Potential Tools for Conserving Agricultural Wetlands

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ABSTRACT

Over 500,000 acres of land in rice and crawfish production in Louisiana provide nesting, wintering, and breeding habitat for over 100 species of waterbirds. These agricultural wetlands have become critically important waterbird habitat because over one million acres of adjacent coastal wetlands have been lost since 1950. Land planted to rice in Louisiana has decreased due to falling rice prices and increasing production costs. Reduction in land for crawfish production, importation of low-cost crawfish meat, and the loss of crawfish processing facilities have negatively influenced crawfish production. Conservation payments for agricultural wetlands may stem this potential habitat loss, benefit local wildlife, and help producers financially.

History of Louisiana's Agricultural Wetlands

on of rice began in Louisiana nearly 300 years ago. Initially, rice was grown for local consumption limited to small fields near the Mississippi River. After the Civil War, production increased ially, especially when mechanized techniques began to be used for producing rice in the broad, flat, oils of Southwest Louisiana (Figure 1). On average, since the 1930s, 530,000 acres of rice have rvested annually in Louisiana (USDA/NASS). This means that over one-half million acres of ral wetland habitat is created and managed by rice farmers in Louisiana each year. Unfortunately, alysis indicates this acreage has been decreasing gradually over the past 30 years.

any Louisiana farmers produce crawfish in conjunction with rice. Crawfish production started over rs ago, when crawfish were raised in small garden ponds on plantations. Later, the French Acadian farmers fortuitously began attracting crawfish into rice fields. After harvest, these early rice farmers heir fields during the fall and winter to attract waterfowl for hunting. The crawfish produced by this were harvested the following spring. During the 1930s, Percy Viosca (one of Louisiana's preeminent ts) published recommendations for managing crawfish in artificial settings like rice fields. By the onsistent acreage levels (110,000 acres annually) were attained (LSU Ag Center 1). Unfortunately, and market conditions have caused crawfish acreage to decline recently by 26% from previous Correspondingly, agricultural wetlands available for waterfowl and other organisms have declined.

Figure 1. Louisiana's agricultural wetlands are declining gradually

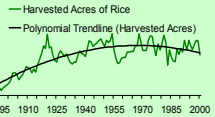
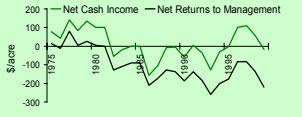


Figure 2. Production of rice in LA is unprofitable without government subsidies



Farming in Louisiana Economically Sustainable?

er producers, rice farmers are concerned with production costs and revenues or economic returns. In a this year, average direct cash expenses or variable costs for producing rice are estimated to be r acre (LSU Ag Center 2). Of total cash expenses, 39% are devoted to planting, 47% are ance costs (including 18% for irrigation expenses), and 14% are harvesting and drying costs. Over three decades however, revenues solely from rice sales covered average cash expenses only one-he time (Figure 2) (USDA/ERS 1). Furthermore, if certain non-cash expenses, such as overhead and nt replacement costs are included, most rice farmers have had negative returns to management for a century.

ment Programs and Subsidies for Rice Production

rs have confronted these economic conditions by altering practices to cut costs and not planting fields (Figure 1). Producers use market price information for planting decisions. Market prices in part, to world consumption and supply patterns. If rice consumption increases domestically or and supply remains relatively constant, then market prices generally will increase. This is why the stry and the United States government have tried to increase domestic consumption and US rice Expectations are that the current situation in the US rice markets, seen in Figure 3, will continue in -term (USDA/WAOB). However, as domestic consumption increases, US prices are pushed higher o foreign market prices, so export demands for US rice may decrease. In fact, the USDA projects a uction in the US share of the world rice export market within the next ten years (USDA/WAOB). is situation, the future of rice production, and by extension agricultural wetlands, may be murky.

Figure 3. Rice production, consumption and exports are increasing steadily

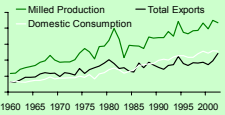
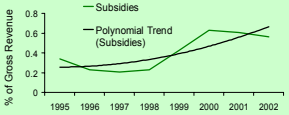


Figure 4. Subsidies for rice farmers have increased substantially



rice farmers, the US government provides them with commodity program payments or direct s based on their production history. From the 1980s through the mid 1990s, about one-third of gross s for rice producers came from direct subsidies (USDA/NASS and USDA/ERS 2). However, since the rm Act, the size of these subsidies has increased substantially (Figure 4). Moreover, since 2000, rice rs received over 60% of their revenues from direct subsidies. The total amount paid directly to rice by taxpayers in three years was $4.3 billion.

Table 1. Birds Recorded at Agricultural Wetland Study Areas in Southern Louisiana
(American Ornithological Society Common Names)
Source: Huner et al. 1999, 2002

Common Loon	Wild Turkey	Long-eared Owl	Golden-winged Warbler
Pied-billed Grebe	Northern Bobwhite	Common Nighthawk	Tennessee Warbler
Horned Grebe	Yellow Rail	Chuck-will's-widow	Orange-crowned Warbler
American White Pelican	Black Rail	Chimney Swift	Nashville Warbler
Brown Pelican	King Rail	Ruby-throated Hummingbird	Northern Parula
Neotropic Cormorant	Virginia Rail	Rufous Hummingbird	Yellow Warbler
Double-crested Cormorant	Sora	Belted Kingfisher	Magnolia Warbler
Anhinga	Purple Gallinule	Red-headed Woodpecker	Yellow-rumped Warbler
Magnificent Frigatebird	Common Moorhen	Red-bellied Woodpecker	Black-throated Green Warbler
American Bittern	American Coot	Yellow-bellied Sapsucker	Cerulean Warbler
Least Bittern	Sandhill Crane	Downy Woodpecker	Black-throated Warbler
Great Blue Heron	Black-bellied Plover	Hairy Woodpecker	Pine Warbler
Great Egret	American Golden-Plover	Northern Flicker	Palm Warbler
Snowy Egret	Wilson's Plover	Pileated Woodpecker	Bay-breasted Warbler
Little Blue Heron	Semipalmated Plover	Eastern Wood-Pewee	Black-and-white Warbler
Tricolored Heron	Killdeer	Acadian Flycatcher	American Redstart
Reddish Egret	Black-necked Stilt	Alder Flycatcher	Prothonotary Warbler
Cattle Egret	American Avocet	Willow Flycatcher	Worm-eating Warbler
Green Heron	Greater Yellowlegs	least Flycatcher	Swainson's Warbler
Black-crowned Night-Heron	Lesser Yellowlegs	Eastern Phoebe	Ovenbird
Yellow-crowned Night-Heron	Solitary Sandpiper	Vermilion Flycatcher	Northern Waterthrush
White Ibis	Willet	Great Crested Flycatcher	Louisiana Waterthrush
Glossy Ibis	Spotted Sandpiper	Western Kingbird	Kentucky Warbler
White-faced Ibis	Upland Sandpiper	Eastern Kingbird	Common Yellowthroat
Roseate Spoonbill	Whimbrel	Scissor-tailed Flycatcher	Hooded Warbler
Wood Stork	Long-billed Curlew	Loggerhead Shrike	Wilson's Warbler
Black Vulture	Hudsonian Godwit	White-eyed Vireo	Canada Warbler
Turkey Vulture	Marbled Godwit	Yellow-throated Vireo	Yellow-breasted Chat
Black-bellied Whistling-Duck	Ruddy Turnstone	Plumbeous Vireo	Summer Tanager
Fulvous Whistling-Duck	Red Knot	Blue-headed Vireo	Scarlet Tanager
Greater White-fronted Goose	Semipalmated Sandpiper	Warbling Vireo	Eastern Towhee
Snow Goose	Western Sandpiper	Philadelphia Vireo	Chipping Sparrow
Ross's Goose	White-rumped Sandpiper	Red-eyed Vireo	Field Sparrow
Canada Goose	Baird's Sandpiper	Blue Jay	Vesper Sparrow
Wood Duck	Pectoral Sandpiper	American Crow	Lark Sparrow
Gadwall	Dunlin	Fish Crow	Savannah Sparrow
American Wigeon	Curlew Sandpiper	Horned Lark	Grasshopper Sparrow
Mallard	Stilt Sandpiper	Purple Martin	Le Conte's Sparrow
Mottled Duck	Buff-breasted Sandpiper	Tree Swallow	Fox Sparrow
Blue-winged Teal	Ruff	Northern Rough-winged Swallow	Song Sparrow
Cinnamon Teal	Short-billed Dowitcher	Bank Swallow	Lincoln's Sparrow
Northern Shoveler	Long-billed Dowitcher	Cliff Swallow	Swamp Sparrow
Northern Pintail	Wilson's Snipe	Barn Swallow	White-throated Sparrow
Green-winged Teal	American Woodcock	Carolina Chickadee	White-crowned Sparrow
Canvasback	Wilson's Phalarope	Tufted Titmouse	Dark-eyed Junco
Redhead	Laughing Gull	Brown Creeper	Lapland Longspur
Ring-necked Duck	Franklin's Gull	Rock Wren	Northern Cardinal
Greater Scaup	Bonaparte's Gull	Carolina Wren	Rose-breasted Grosbeak
Lesser Scaup	Ring-billed Gull	Bewick's Wren	Blue Grosbeak
Surf Scoter	Herring Gull	House Wren	Indigo Bunting
Long-tailed Duck	Gull-billed Tern	Winter Wren	Painted Bunting
Bufflehead	Caspian Tern	Sedge Wren	Dickcissel
Common Goldeneye	Royal Tern	Marsh Wren	Bobolink
Hooded Merganser	Common Tern	Golden-crowned Kinglet	Red-winged Blackbird
Red-breasted Merganser	Forster's Tern	Ruby-crowned Kinglet	Eastern Meadowlark
Ruddy Duck	Least Tern	Blue-gray Gnatcatcher	Yellow-headed Blackbird
Osprey	Black Tern	Eastern Bluebird	Rusty Blackbird
Swallow-tailed Kite	Rock Dove	Veery	Brewer's Blackbird
Mississippi Kite	Eurasian-Collared Dove	Swainson's Thrush	Common Grackle
Bald Eagle	White-winged Dove	Hermit Thrush	Boat-tailed Grackle
Northern Harrier	Mourning Dove	Wood Thrush	Great-tailed Grackle
Sharp-shinned Hawk	Inca Dove	American Robin	Brown-headed Cowbird
Cooper's Hawk	Common Ground-Dove	Gray Catbird	Orchard Oriole
Harris's Hawk	Black-billed Cuckoo	Northern Mockingbird	Baltimore Oriole
Red-shouldered Hawk	Yellow-billed Cuckoo	Brown Thrasher	Purple Finch
Broad-winged Hawk	Groove-billed Ani	European Starling	House Finch
Red-tailed Hawk	Barn Owl	American Pipit	American Goldfinch
American Kestrel	Eastern Screech-Owl	Sprague's Pipit	House Sparrow
Merlin	Great Horned Owl	Cedar Waxwing	
Peregrine Falcon	Barred Owl	Blue-winged Warbler	

QUESTIONS FOR FUTURE RESEARCH AND EXTENSION ACTIVITIES

The long-run economic situation facing Louisiana's rice and crawfish industries is bleak. Without additional financial assistance, 30% of Louisiana's rice production acreage could be lost in the next decade as well as a nontrivial portion of its crawfish production. Commodity payments have exacerbated the supply/demand imbalance and encouraged excess production of rice. Increasingly, taxpayers wonder if all the benefits of supporting agriculture equal all the costs. However, a 30-percent reduction in land planted to rice might lead to a 160,000 acre loss of seasonal wetland habitat and a substantial reduction in crawfish production. *What would become of this land? Would crawfish production alone occur on some of these unplanted rice lands? How would the loss of these agricultural wetlands affect waterfowl and other water birds and the associated revenue-generating activities? How would land values, rental rates and the local rural economy be affected?* Given projected declining rice prices, and increasing production costs, it is unlikely many of these functional wetlands would continue without additional financial assistance. We are beginning to evaluate some of these questions by first determining the level of support available under CSP in Louisiana and the economic costs to participating farmers who provide environmental benefits from these agricultural wetlands. In conjunction with this effort, we will begin determining the value of the environmental benefits associated with the costs of these working agricultural wetlands to residents in Louisiana.

Supplemental Income from Natural Resource-Based Enterprises

In 2003, the gross farm value of fee-based hunting on 7.4 million acres leased in Louisiana was $4 million. Agricultural wetlands generated the highest lease values, with avid duck and goose hunte as much as $70 per acre for prime rice fields (Reed 2002). However, the average value of private leases declined by nearly 20% from 1993 to $5.50/acre. One reason for this decline is a threefold in land leased for hunting in the past decade (Figure 5). Producers were encouraged to increase t supply of leased hunting land because of the declining profitability of domestic commodities such a and the apparent profitability of fee-based hunting. Unfortunately, the demand for waterfowl huntir declined recently due, in part, to the general decline in economic activity nation-wide. Thus, additi expansion of land available for hunting leases could lead to significant reductions in waterfowl leas

Like duck hunting, bird watching is an activity that could provide an alternative source of revenue c agricultural wetlands. The shallow water habitat created by seasonally flooded fields is ideal for re and migratory waterfowl as well as for many other avian species. To date, 278 species of birds (ha them water birds) have been documented on agricultural wetlands in Southern Louisiana (Table 1). However, the opportunity for fee-based birding on Louisiana's agricultural wetlands may be diminishing. Between 1991 and 2001 U.S. expenditures for wildlife viewing grew 40%, yet Louisia 42% reduction in those expenditures during the same period (USFWS 2003) (Figure 6).

Figure 5. Hunting lease acreage in LA has increased despite reductions in lease value

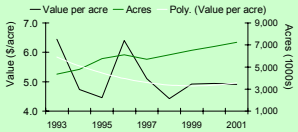
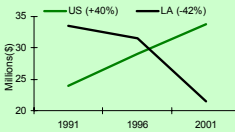


Figure 6. Wildlife-viewing expenditures have countered the national trend



Potential Programmatic Responses of the 2002 Farm Act

The constraints facing rice and crawfish production, waterfowl leasing, and bird watching suggest t more programmatic response may be needed to address the potential decline of agricultural wetla Farm Security and Rural Investment Act authorized in 2002 could signal some relief. This 2002 Fa contains $17 billion in additional authorized funding to expand existing programs and to establish c under the conservation title. This funding level represents an 80% increase over the previous base funding level for conservation programs under the 1996 Farm Act.

Working Lands Conservation Cost-Shares and Stewardship Payments

Traditionally, wetland stewardship initiatives of previous Farm Acts have come in the form of long-t perpetual easement programs. Such easements have been highly effective in helping to offset agr wetland conversions (swampbusters), which remained as high as 280,000 acres per year through 1980s (Figure 7). Louisiana has been the national leader in establishing such easements, with mo 210,000 acres enrolled under the Wetland Reserve Program (WRP). However, in recent years conservation easements have been criticized as "anti-production" by the farm community and men the conservation community have begun to call for programs that address environmental concerns working agricultural lands. For these reasons, cost-share payments of "working lands" programs s the Environmental Quality Incentives Program (EQIP) emerged during the 1990s, and increased substantially under the 2002 Farm Act. Authorized funding for all working lands programs is $12 bi through 2007, a 1000% increase over 1996 levels (USDA/ERS 3). Cumulative budget projections a gradual shift from conservation easements to working lands programs over the next decade (Fig

Figure 7. The conversion of U.S. wetlands due to agriculture has declined

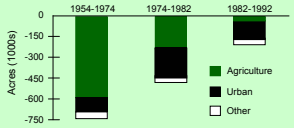
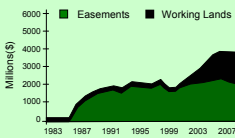


Figure 8. Farm Bill conservation spendin shift from land retirement to working la



A new working lands initiative, the Conservation Security Program (CSP), may provide some much economic assistance to Louisiana's rice and crawfish farmers. The $2 billion program, designed to the best and motivate the rest," corrects a former disincentive of conservation policy in which indep conducted resource stewardship actually disqualified farmers from conservation program assistance. Creating avian habitat is but one of the many environmental benefits provided by agric wetlands for which farmers would qualify for conservation payments under CSP.

CNREP

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USDA/NASS. Agricultural Statistics Data Base

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