

THE WATER BANK PROGRAM AND ITS STATUS IN MISSISSIPPI

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Abstract: The Water Bank Program in the southeastern United States has been limited to Mississippi, Louisiana, and Arkansas. A review of the program in Mississippi suggests that a southern Water Bank Program can be consistent with national Water Bank Program objectives through the preservation of production habitat for the wood duck (*Aix sponsa*). Mississippi has 90 Water Bank Program agreements, which include 3,403 ha of wetland habitat and 4,585 ha of adjacent land habitat. Agreement areas range in size from 5 ha to 470 ha and average 89 ha. Annual payments to landowners are computed at a rate of \$12.35 per ha per year and amount of \$98,642. In 1977, the cost for technical services from the Soil Conservation Service was \$1.95 per ha.

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The Water Bank Program, which began in 1972, is one of many federal programs designed to achieve wetland preservation. Major emphasis has been placed on wetland preservation in the prairie pothole region of the North Central States. Expansion of the program in the Southeast has been limited to the lower Mississippi River states of Mississippi, Louisiana, and Arkansas.

The integrity of a southern Water Bank Program (WBP) has been questioned. Womack (1976) reported that implementation of the WBP in Mississippi, Louisiana, and Arkansas was inconsistent with the goals and constraints of the Water Bank Act. However the General Accounting Office (1979) took a more positive position on the potential of a southern WBP and recommended to Congress that the program be expanded to include additional eligible wetland types more common to the Southeast.

Wildlife professionals in the Southeast have had very little exposure to the Water Bank Program. The future expansion of the program may hinge upon how well wildlife professionals know and understand the program, and how well they can relate to decision makers the needs, problems, and potentials of the program. The objective of this paper is to expand professional awareness of the Water Bank Program as it relates to wetland preservation in the Southeast, with emphasis on the status of the program in Mississippi.

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THE NATIONAL PROGRAM

The WBP was authorized by the Water Bank Act, Public Law 91-559, on 19 December 1970 to preserve, restore, and improve the wetlands of the nation. The Act gave a variety of reasons for these objectives such as conservation of surface water, reduction of soil erosion, and preservation and improvement of habitat for waterfowl and other wildlife.

To effectuate the WBP, the Secretary of Agriculture was given authority to develop rules and regulations within certain guidelines. The Secretary was authorized to enter into 10-year agreements with, and to make payments to, owners and operators of farms, ranches, or other land to preserve wetlands. Although the scope of the Act was broad, constraints within the law limited the Water Bank Program to Types 1, 2, 3, 4 and 5 wetlands, as described by Shaw and Fredine (1956), in important migratory waterfowl nesting and breeding areas (U.S. Congress 1970). Regulations subsequently developed by the U.S. Department of Agriculture further limited eligible wetlands to Types 3, 4, and 5

and provided for the eligibility of certain adjacent land that was essential for nesting and breeding of migratory waterfowl.

Administration of the Water Bank Program is through the Agricultural Stabilization and Conservation Service. Under current regulations, annual payment is offered to eligible landholders who sign 10-year agreements to preserve designated wetland and adjacent land habitat. In return for payment, the landowner agrees to certain limitations on the use of the designated area. The area cannot be harvested for agricultural purposes, grazed except under certain conditions, used as set-aside areas under another program, drained, burned, filled, clipped, or used in any other way that would destroy its wetland character or value as a nesting or breeding area.

Technical assistance for the Water Bank Program is provided by the Soil Conservation Service. Water Bank Program agreements are based on conservation plans prepared in cooperation with local soil and water conservation districts. The major Soil Conservation Service responsibilities are to (1) provide the technical service needed to determine eligibility of the wetlands and to determine the practices required in the WBP agreement for wetland protection, (2) develop conservation plans on the operating unit with designated wetlands and adjacent lands identified as necessary for protection and improvement of the waterfowl habitat, and (3) provide the technical assistance needed to carry out the conservation plan.

As of July 1978, 4,456 Water Bank Program agreements were in effect in 178 counties in 15 states. These agreements included 54,594 ha of wetland and 139,755 ha of adjacent land, totaling 194,349 ha (Soil Conservation Service 1978).

WETLAND PRESERVATION NEEDS

The need for wetland preservation is well documented (Alexander 1963, Aus 1969, Harmon 1969, Whitesell 1970, Landin 1978, and Bellrose and Low 1978). Allen (1973) said that marshes, swamps, and wet areas of North America were our most endangered form of wildlife habitat.

Land use trends in agriculture accentuate the need for wetland preservation in the Southeast. Land use conversion from forest to cropland is continuing at a rate of 105,263 ha annually, and it is predicted that forest land will be reduced to 809,717 ha (1% of the total area) before the year 2000 (U.S. Fish and Wildlife Service, unpublished data 1978). In Mississippi alone, recommended plans for agricultural drainage improvements call for elimination of seasonal flooding on 36,275 ha of land and the reduction of frequency and duration of flooding on 356,437 ha (U.S. Department of Agriculture 1975). The projected impacts of these changes leave no doubt about the need for a program to preserve southern wetlands.

The plight of southern wetlands has been brought to the attention of the U.S. Congress. In hearings before the House of Representatives, Lynn Greenwalt, Director of the Fish and Wildlife Service, reported that: "While the loss of wetland habitat in the prairie pothole region is serious, some 35,000 to 60,000 acres annually, the greatest losses of wetland and adjacent upland vegetation are now occurring in the lower Mississippi River region, primarily in Arkansas, Mississippi and Louisiana. . . . As we review our overall wetlands preservation program, we must consider all of the available tools for more adequately protecting this type of habitat." (U.S. Congress, House of Representatives Hearing 1978:225-226).

Recent developments in the Congress, such as House of Representatives Bill Number 2043 and Senate Bill Number 837, indicate that with the proper legislative changes, the Water Bank Program can become a major wetland preservation effort. Wildlife professionals can play an important role in this effort by supplying their technical expertise to decision makers and by supporting the need for wetland preservation at every opportunity.

WATER BANK EVALUATIONS

Since 1976, several attempts have been made to evaluate the effectiveness of the Water Bank Program (Womack 1976, General Accounting Office 1979). Conclusions reached by these reviewers seldom complement one another, especially where the need to preserve southern wetlands is the issue. A study of these reports, however, can aid in understanding the importance of the southern Water Bank Program to national wetland policy.

Womack (1976) focused on the program's contribution to maximize continental waterfowl production. Little emphasis was placed on other related wetland resource values and thus the importance of wetland preservation in Mississippi, Louisiana, and Arkansas was discounted. A national evaluation summary by Womack (1977:252) described the situation in this manner: "...the Water Bank Program is not making a maximum contribution toward waterfowl production. First, 17 of the participating Water Bank counties are not considered by the Fish and Wildlife Service to be significant locations for habitat preservation. Either the habitat is not biologically useful for breeding or nesting, or there is little threat of habitat loss."

These conclusions do not reflect the original recommendations of the U.S. Fish and Wildlife Service (1975:6-7) for Mississippi, Louisiana, and Arkansas which stated: "The counties in these States that were recommended for participation in WBP generally coincided with those having excellent wood duck breeding habitat, as well as high waterfowl wintering use. . . . This type of habitat is highly threatened by drainage and clearing. However, the principal habitat occurring in these areas consists of Type 1 (seasonally flooded bottomlands), Type 6 (shrub swamp), and Type 7 (wooded swamp) wetlands; the latter two, at present, do not qualify for Water Bank Program participation. . . ."

In the most recent Water Bank Program evaluation, the General Accounting Office (1979) concluded that waterfowl production is overemphasized and recommended to Congress that the Water Bank Act be changed to include eligible wetland Types 6 and 7 so that the Secretary of Agriculture could protect any wetland, not just nesting and breeding areas. The General Accounting Office also stated that: "In the past, the value of wetlands has relied principally on the benefits of preserving fish and wildlife habitats. Other values generally were overlooked. Only recently have studies examined the benefits of flood control, ground water recharge, and pollution and sediment control. These (studies) have shown that in some cases benefits from these wetland values have dwarfed those from fish and wildlife values. These findings raise the question: How much past wetland drainage has contributed to present problems of flooding, ground water depletion and pollution, and sedimentation? These studies suggest that the relation is significant and that greater support of wetland preservation (and perhaps re-creation) may be warranted." (General Accounting Office 1979:iv). These new ideas are a welcome change in light of the continuing threats to southern wetlands and associated bottomland hardwood habitats.

THE PROGRAM IN MISSISSIPPI

The Water Bank Act limits expansion of the Water Bank Program to important migratory waterfowl nesting and breeding areas. This restricts the opportunity for wetland preservation in Mississippi primarily to habitats suitable for wood duck production. Preservation of production habitat for the wood duck, the only significant breeding and nesting duck in Mississippi, is consistent with the objectives of the WBP, as long as its emphasis does not exceed the relative importance of the species. In terms of significance, the wood duck represents 10.7% of all ducks harvested annually in the Mississippi Flyway. Average annual harvest figures for this flyway indicate that the wood duck ranks second to the mallard (*Anas platyrhynchos*) in numbers harvested (Carney et al. 1978). Through 1978, Water Bank Program agreements, based on wood duck

production in Mississippi, covered 3.4% of the total area in the program nationally (Soil Conservation Service 1978).

Since the Water Bank Program is restricted to nesting and breeding areas and because only wetland Types 3, 4, and 5 are eligible, the quantity of eligible wetlands available for the program in Mississippi is severely limited. However, many otherwise ineligible wetlands are indirectly available as adjacent land. The only restrictions applying to eligible adjacent land are that (1) they must be essential to nesting and breeding and (2) they cannot be farther than 402 m from the designated wetlands. This flexibility, when coupled with the breeding and nesting requirements of the wood duck, allows for acceptance of wetland Types 1 (seasonally flooded bottomland), 6 (shrub swamps), and 7 (wooded swamps). The acceptance of these additional wetland types as adjacent land has not been widely acknowledged at the national level where wetland Types 6 and 7 are commonly referred to as ineligible for the Water Bank Program. Actually, these wetland types are ineligible only as designated wetland in the program agreement.

The opportunity to accept a variety of habitat types, either as eligible wetland or adjacent land, makes Mississippi's Water Bank Program far more significant to wetland preservation than it appears to those unfamiliar with the program. While Water Bank Program lands in Mississippi provide essential breeding and nesting habitat for the wood duck, they also benefit upland wildlife, furbearers, wading birds, and large concentrations of wintering waterfowl.

The program has been well received by landowners and operators in 2 Mississippi counties. Leflore County accepted program agreements from 1972 through 1977, and Tallahatchie County entered the program in 1978 (Table 1). A total of 90 Water Bank

TABLE 1. Water Bank Program referrals, agreements and agreement areas in Mississippi from 1972 through March 1979.

County Year	WBP Referrals Issued by ASCS			WBP Agreements Signed by Landowners	Agreement Areas		
	Serviced by SCS (Number)	Disqualified by SCS (Number)	Qualified by SCS (Number)		Total (ha)	Wetland (ha)	Adjacent Land (ha)
Leflore:							
1972	65	36	29	23	2,200	859	1,341
1973							
1974	17	6	11 ^a	11 ^b	1,634	1,071	563
1975	30	10	20	19 ^c	1,253	642	611
1976	51	9	42	17 ^d	1,048	343	705
1977	9	2	7	8 ^e	433	118	315
1978							
1979							
Tallahatchie:							
1978	15	2	13	12	1,420	370	1,050
Totals	187	65	122	90	7,988	3,403	4,585

^aFunds not available for three referrals

^bEight referrals made 11 contracts

^cTwo referrals made 1 contract

^dTwenty referrals made 17 contracts

^eOne contract resulted from division of a 1975 contract

Program agreements, covering 7,988 ha, are now in effect in these counties. The existing agreements include 3,403 ha of wetland habitat and 4,585 ha of adjacent land habitat. Annual payments to landowners for wetland and adjacent land are computed at a rate of \$12.35 per ha per year and amount to \$81,115 in Leflore County and \$17,527 in Tallahatchie County (Table 2).

TABLE 2. Water Bank program annual payments, fund allocations and agreement sizes in Mississippi from 1972 through March 1979.

County/ Year	Annual Payments to Landowners (Dollars)	WBP Funds Allocated to ASCS		WBP Agreement Sizes	
		Initially (Dollars)	Increases (Dollars)	Largest (ha)	Smallest (ha)
Leflore:					
1972	27,175	17,800	17,892	394	7
1973					
1974	20,180	18,000	20,400	339	11
1975	15,475	58,070		165	6.
1976	12,940	70,709	175,000	317	6
1977	5,345			240	5
1978					
Tallahatchie:					
1978	17,527	123,828	51,537	470	11
Totals	98,642	288,407	264,829		

Table 3 provides a comparison of important WBP characteristics in Mississippi and the nation. Mississippi's average Water Bank Program agreement size is about twice as large as the national average. However, there is little difference between the national and Mississippi average annual agreement cost, because Mississippi's average annual cost per ha is less than one-half the national average. Therefore, Mississippi WBP agreements cover about twice as much land for the same amount of money.

Mississippi has an adjacent land to wetland ratio of 1.3:1, as compared to 2.6:1 for the national average. Ratios which express an equal relationship between adjacent land and wetland reflect proper emphasis on preservation of wetland habitat. In reality,

TABLE 3. A comparison of Mississippi and national Water Bank Program characteristics.

Water Bank Program Characteristic	Mississippi Average	National Average
Average agreement size (hectares)	89	43
Average annual agreement cost (\$)	1,096.00	1,207.00
Average annual cost per hectare (\$)	12.35	27.17
Adjacent land to wetland ratio	1.3:1	2.6:1
Incidence of agreement termination (%)	2.2	11.8 ^a
SCS Technical service cost for fiscal year		
1977 (\$):		
Per hectare	1.95	3.88
Per agreement	175.00	168.00

^aData from Womack (1977)

Mississippi's ratio approaches 1:1 because many adjacent land areas include wetland Types 6 and 7.

Nationally, the incidence of agreement termination has been reported at 11.8% (Womack 1977). More recently, the Department of Agriculture quantified the termination rate at 4.3% (U.S. Congress, House of Representatives 1979). In Mississippi, only 2, or 2.2% of the Water Bank Program agreements have been terminated since 1972. The loss of Water Bank Program land through agreement termination has been more than offset by increases on existing agreements (Table 4).

TABLE 4. Water Bank Program agreement violations, terminations, modifications, and, refunds in Mississippi from 1972 through March 1979.

County Year	WBP	WBP	WBP	Refunds to ASCS (Dollars)	WBP Agreement Modifications	
	Agreement Violations (Number)	Agreements Terminated (Number)	Agreements Terminated (ha)		Increases (No.) (ha)	Reductions (No.) (ha)
Leflore:						
1972						
1973						
1974						
1975	1					
1976	1				7 990	1 87
1977					1 20	
1978	1	1	141			1 313
1979		1	37	1,908.66		
Tallahatchie:						
1978						
Totals:	3	2	178	1,908.66	8 1,010	2 400

Water Bank Program cost per ha for technical services from the Soil Conservation Service in Mississippi in 1977 was about one-half the national average (Table 3).

Mississippi's Water Bank Program bears an interesting relationship to other efforts to preserve wetlands in the Southeast, particularly the Migratory Bird Land Acquisition Program of the Fish and Wildlife Service. The Fish and Wildlife Service's Bottomland Hardwood Preservation Program has delineated 54,825 ha in 25 areas of primary importance to waterfowl in Mississippi (U.S. Fish and Wildlife Service, unpublished data 1978). Water Bank Program agreements are currently in effect in 9 of these areas.

One criticism of the Water Bank Program has been that it duplicates wetland preservation efforts by the Fish and Wildlife Service; however, this does not appear to be the case in Mississippi. Acquisition efforts by the Fish and Wildlife Service seek lands through fee title purchases or perpetual easements. Problems associated with this type of wetland acquisition are being encountered in several states (Wildlife Management Institute 1978), and much of the desirable land in Mississippi is not now available under these terms. However, many landowners are willing to enter into 10-year Water Bank Program agreements. In addition, the Fish and Wildlife Service is currently seeking land units in excess of 405 ha. This excludes the acquisition of many small, isolated wetland areas which are extremely desirable for inclusion in Mississippi's Water Bank Program. Mississippi agreement sizes range from 470 ha to 5 ha, and average 89 ha (Table 2).

The Water Bank Program provides a wetland preservation alternative which private landowners can accept, and program agreements in Mississippi may be protecting desirable wetlands for acquisition by the Fish and Wildlife Service at some future date. If properly directed, the Water Bank Program can continue to complement all other

wetland preservation efforts and foster greater landowner support of wetland preservation.

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