Restoring The Delta

Lower Mississippi Valley Largescale Watershed Project

ANNUAL REPORT
FY 2001

Restoring The Delta: Partnerships For Sustainable Restoration In the Lower Mississippi Alluvial Valley

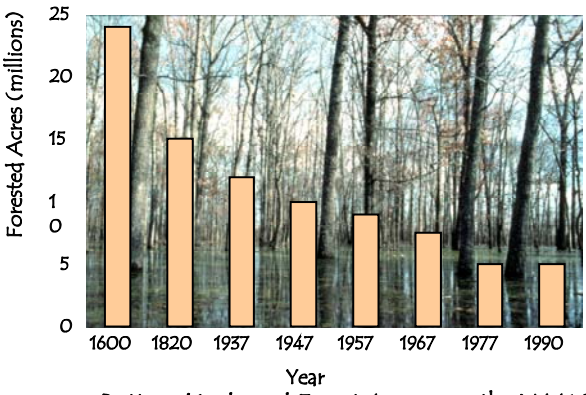
Restoring The Delta: Partnerships For Sustainable Restoration In the Lower Mississippi Alluvial Valley

I. Partnership Overview

The Lower Mississippi Alluvial Valley (LMAV) covers more than 24 million acres in parts of seven states extending from southern Illinois to the Gulf of Mexico. Historically, the LMAV was largely bottomland hardwood forests. Flooding of the mighty Mississippi River and its tributaries shaped this land. Rich soils left by these floods produced a vast forested wetland sheltering a great diversity of wildlife. Settlers in the 1800's, searching for fertile farmland, cleared forests, starting from the highest and best-drained sites. During the 1900's flood control efforts straightened and deepened rivers, drained swamps, and encouraged forest clearing on lower, wetter sites. Between 1950 and 1976, approximately one-third of the LMAV's bottomland forests were converted to agriculture. By the 1980's less than 20% of the original forest was left.

Lower Mississippi Alluvial Valley

Deforestation and draining of wetland areas resulted in a loss of critical wildlife and fish habitat, decreased water quality, reduced floodwater retention, and increased sediment loads, all of which have contributed to the hypoxic zone in the Gulf of Mexico. The Environmental Protection Agency has identified the Mississippi Delta as an area of significant concern regarding surface and ground water quality. The Lower Mississippi Alluvial Valley is also one of seven high priority areas originally identified in the North American Waterfowl Management Plan.



Bottom Hardwood Forest Acreage in the LMAV

The restoration journey has begun. Numerous agencies and organizations including the Fish and Wildlife Service, Ducks Unlimited, state natural resource agencies, USDA Forest Service, Natural Resource Conservation Service, Corps of Engineers, Environmental Protection Agency, Business Council for Sustainable Development, Delta Council, and Lower Mississippi Valley Joint Venture, are playing a variety of roles in restoring this valuable ecosystem. **Restoring the Delta** seeks to catalyze and expand existing partnerships among the public and private interests addressing restoration needs and management challenges in the LMAV. Because over 90 percent of the LMAV is in private ownership, developing economically viable restoration is critical to achieving the biological needs of the LMAV.

Simply put…it's about providing economically and biologically sustainable restoration using Federal, State, and non-governmental agencies, organizations, landowners and companies. **Restoring the Delta** is being implemented on a state-by-state basis with restoration being delivered by the existing partners programs developed in support of the Lower Mississippi Valley Joint Venture.

Our goal…

- 2 million acres of vegetation
- 1 million acres of hydrology

…over the next 20 years

II. Partnership Goals

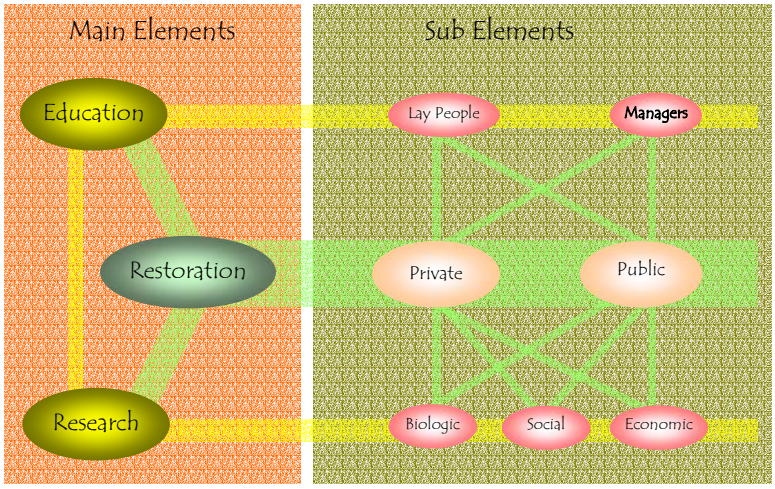
Restoration work in the LMAV is achieved through satisfying the landowners' (public or private) objectives (biologic, economic or community). Regardless of what motivated landowners or managers to restore, the ultimate effect is improved watershed health. In order to help achieve significant watershed health improvement in the 24-million acre LMAV, the **Restoring the Delta** partnership has established the ambitious goal of 2 million acres of vegetation and 1 million acres of hydrology over the next 20 years.

Our approach is to address issues in three broad areas: restoration, research and education. The restoration component includes project development and delivery on private and public lands that is driven by landowner / manager objectives, rather than programmatic guidelines, and secondly, product development to support the biologic and economic decision-making

necessary for project implementation. The intent of the research component is to fully coordinate research activities in the LMAV to help efficiently identify research needs, avoid duplication and provide meaningful information important to delivering the restoration component of **Restoring The Delta**. The purpose of the education component is to create a comprehensive understanding among private landowners and public land managers about the benefits of biologically and economically sustainable restoration at the local scale and illustrates how local restoration benefits regional restoration objectives. The concept is that education leads to motivation. Although all three areas are interrelated and critical to the success of **Restoring The Delta**, the primary initial focus is on the restoration component.

Our approach…

- Develop biologically and economically diverse, public and private landscape level restoration.
- Focus research on biologic, economic and social restoration issues
- Provide sustainable restoration education



The FY 2001 Goals:

1. Develop the overall goal, approach and framework for implementing **Restoring the Delta** across the LMAV.

2. Obtain commitment from partners in Arkansas and implement **Restoring The Delta** in Arkansas as a first step to implementation across the entire LMAV.

The FY 2001 Goals (con't):

3. Develop GIS-based Restoration Focus Areas in Arkansas.

4. Develop 800 acres of private land projects to be implemented in the winter of 2001/2002.

5. Engage State forestry agencies into restoration partnerships.

6. In partnership with the Mississippi Forestry Commission, develop hardwood management guidebook for Mississippi.

7. Deliver GIS soil-moisture index for the LMAV to identify and focus restoration efforts.

III. Accomplishments

A. Actions

1. A partnership of USDA Forest Service, Ducks Unlimited, and the Lower Mississippi Valley Joint Venture Office completed development of the overall goal, approach and framework for implementing **Restoring The Delta**.

2. Obtained commitments from Arkansas Game and Fish Commission, Arkansas Forestry Commission (AFC), Natural Resources Conservation Service, Ducks Unlimited, USDA Forest Service, and U.S. Fish and Wildlife Service to implement **Restoring The Delta** in Arkansas. Project delivery will be through the Arkansas Partners Program. Developed consensus among partners for guidelines for integration of the AFC and USDA Forest Service Resources into the existing partners program.

3. Initiated development of GIS-based Restoration Focus Areas in Arkansas. Participating agencies and organizations include the AFC, Arkansas Multi-Agency Wetland Planning Team, Ducks Unlimited, The Nature Conservancy, U.S. Fish and Wildlife Service, and Natural Resources Conservation Service. Approximately 33% complete.

4. Identified bottomland hardwood sites on the Delta National Forest and the St. Francis National Forest to be developed as seed production areas. This is a partnership effort including the Mississippi Forestry Commission, Arkansas Forestry Commission, USDA Forest Service, and Ducks Unlimited.

5. Developed 335 acres of private land restoration in Mississippi to be implemented in the winter of 2001/2002. The project includes both bottomland hardwood and hydrology restoration. Project partners include the landowner, USDA Forest Service, Ducks Unlimited, Mississippi Forestry Commission, and the Mississippi Partners Project.

B. Environmental Consequences / Outcomes

The primary emphasis in FY 2001 was in developing the scientific foundation, educating potential partners and obtaining partner commitment to the goals of **Restoring The Delta**. This groundwork is a critical foundation and will ultimately determine the extent and quality of environmental outcomes. Examples of the importance of actions taken in FY 2001 to future environmental consequences / outcomes include:

1. Restoration Focus Areas…This is the biological foundation for project implementation and based on landscape-level biological criteria (forest

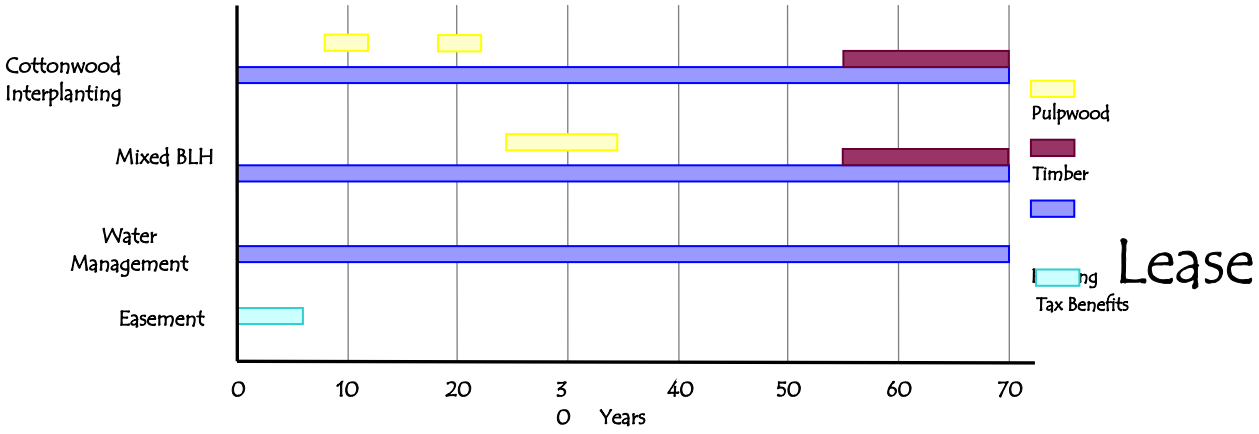
fragmentation, area-dependent species, impaired waters, etc…) of agencies and organizations interested in restoration work in Arkansas. A number of nongovernmental organizations and government agencies have developed criteria for deciding where in the landscape would be most appropriate for achieving their respective restoration objectives. The goal to is consolidate this information to a) focus restoration efforts in a biologically efficient and meaningful manner across the landscape; b) leverage scarce resources; and c) spatially identify potential partners based on their restoration criteria. These focus areas will be developed on a state-by-state basis and ultimately linked to regional biological objectives for the entire LMAV.

2. Ensuring an adequate seed source has been identified as a critical issue. Nuttall oak, one of the most valuable bottomland hardwoods to wildlife and timber production, has experienced poor seed production over the past several years and as a consequence, Nuttall oak seedlings have been scarce or unavailable. No seed…no seedling. Potential seed production areas on the Delta and St. Francis National Forests have been identified for this species. A partnership has been formed to manage these areas as seed production areas to help address the critical need for the seed of this valuable species.

3. The development of the 335-acre private land restoration project in Mississippi will serve as a demonstration project for the development of biologically and economically diverse restoration designed to meet landowner objectives. The project components include a cottonwood/oak inter-planting, mixed bottomland hardwood plantings, water management units, and a Ducks Unlimited conservation easement. Demonstrating the biological and economic benefits is critical to achieving our restoration goals.

Demonstrating biologic and economic diversity…

Potential Benefit	Cottonwood Interplanting		Mixed Bottomland Hardwoods		Water Management		Easement	
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term
Game Species	X	X		X		X		X
Waterfowl				X	X	X		X
Neotropical Birds	X	X		X		X		X
Shorebirds					X	X		X
Water Quality	X	X	X	X	X	X		X
Wetland Function		X		X	X	X		X
Education	X	X	X	X	X	X	X	X



Distribution of Economic Benefits

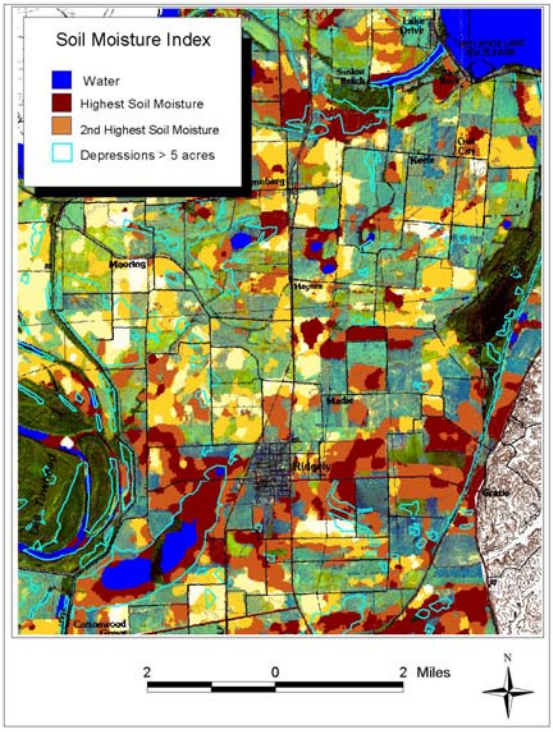
C. Growth

In addition to the existing partnership activities of Ducks Unlimited, the Lower Mississippi Valley Joint Venture and the USDA Forest Service, **Restoring The Delta** has established a new partnership in Arkansas with the Arkansas Game and Fish, Arkansas Forestry Commission, Natural Resources Conservation Service, and U.S. Fish and Wildlife Service to deliver restoration work in Arkansas through the existing partners program. Additional partnership opportunities have been explored with Winrock International, The Nature Conservancy, Business Council for Sustainable Development, and Tembec (forest industry).

A critical element to the success of **Restoring The Delta** is to fully engage the state forestry agencies into restoration partnerships. They provide a unique perspective and the technical forest management skills required to deliver biologically and economically diverse restoration. The Arkansas Forestry Commission played a vital role in developing **Restoring The Delta** in Arkansas and will be providing seedlings and technical assistance for restoration projects in the Arkansas Delta. Their role is critical to expanding the range of technical expertise and opportunities for private landowners. In addition, the Mississippi Forestry Commission has played an active role in developing the demonstration project in Mississippi, even though **Restoring The Delta** has not been formally implemented in Mississippi.

D. Products Produced

Restoration work in the LMAV focuses primarily on lands that are frequently flooded and poorly drained. These areas generally contain soil characteristics that are well suited to restoring wetland functional capacity. The problem is that complete soils information in digital format for the LMAV is not available.



In a partnership effort between Ducks Unlimited and the USDA Forest Service, a GIS soil-moisture index for the LMAV was developed to help identify and focus restoration efforts. The index was produced to complement GIS work being conducted by the Lower Mississippi

Valley Joint Venture biologists and helps answer the question, "Where in the landscape is restoration realistic and most biologically effective?" Using 1999 satellite imagery, the index characterizes surface soil moisture on fallow agricultural fields and other bare soil areas and divides the LMAV into five relative wetness classes. The two wettest relative classes correlate well with existing soils information and represent the frequently flooded and poorly drained soils in the LMAV. The tool is currently in use by Ducks Unlimited, USDA Forest Service and the Lower Mississippi Valley Joint Venture Office in their planning and partnership efforts in the LMAV.

A hardwood management guidebook for Mississippi was also developed, in partnership with the Mississippi Forestry Commission to provide technical guidance on the restoration and management of hardwoods in Mississippi. The guidebook integrates forest and wildlife management and was specifically developed for Mississippi's soils, wildlife and forests.

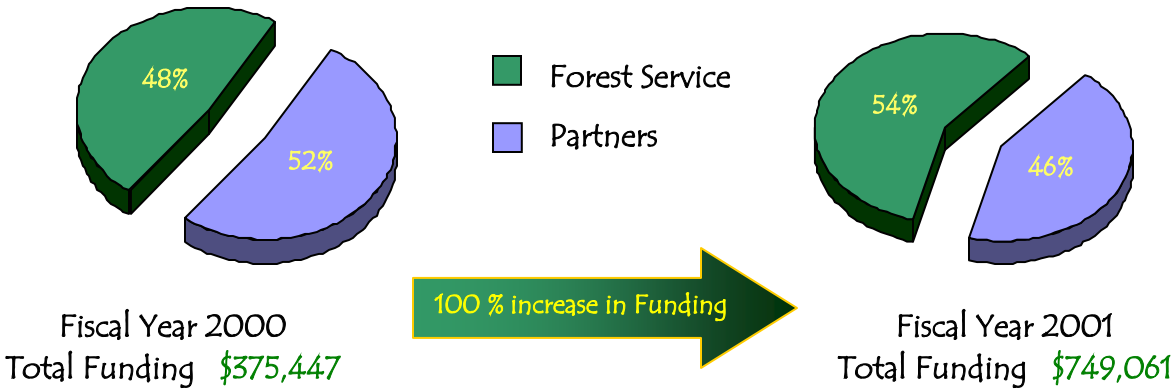
IV. Future Actions and Opportunities

In the coming year **Restoring The Delta** will continue to refine its approach, broaden its partnerships to other states, expand its restoration goals and continue to contribute technical tools, information and assistance to public and private interests in the LMAV. Activities over the next year include:

1. Develop 1,500 acres of vegetative and hydrologic restoration in the LMAV.
2. Implement **Restoring the Delta** in the States of Mississippi And Louisiana.
3. Deliver a GIS forest change detection product covering the last 50 years in the LMAV to be used as a restoration-planning tool. A component of the product will include a pilot project to evaluate the use of remote sensing to evaluate and monitor tree survival on restored sites.
4. Conduct a Carbon Sequestration Conference for the LMAV.

5. Deliver a multi-media environmental credit trading presentation to illustrate the concept of developing an environmental credit-trading project that allows the trading of various restoration credits within a watershed.
6. Establish a black willow regeneration study to determine the practical application of using black willow on restoration sites.
7. Double the number of partners in **Restoring The Delta**.
8. Increase partners' contributions by 50%.

V. Partnership Budget / Costs



VI. Partnership Contacts

- Gary L. Young, Lower Mississippi Alluvial Valley Watershed Coordinator, USDA Forest Service, (601) 206-5466, gyoung@ducks.org

- Curtis Hopkins, Director of Conservation Programs, Southern Regional Office, Ducks Unlimited, (601) 206-5445, chopkins@ducks.org

- Ted Leininger, Project Leader, Center for Bottomland Hardwood Research, USDA Forest Service, (662) 686-3178, tleininger@fs.fed.us