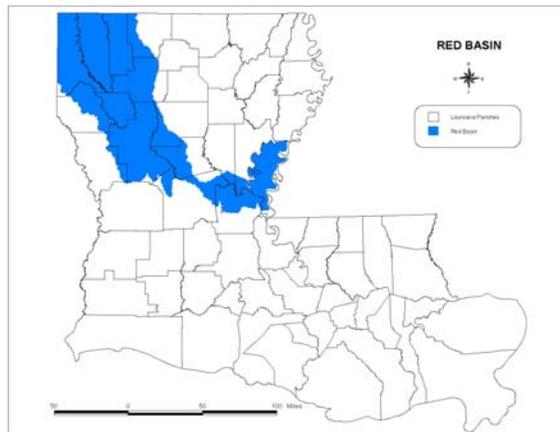


i. Red Basin

General Description:

The Red River is one of Louisiana's major river systems and is located in the Mississippi drainage basin. The headwaters of the Red River begin in Curry County, New Mexico and it ends 1,360 miles downstream at the Mississippi River. The Red River watershed is 69,200 square miles (44,287,823 acres) (Ken Guidry, personal communication) and receives drainage from 5 states including New Mexico, Texas, Oklahoma, Arkansas, and Louisiana. The Red River drains approximately 7,760 square miles within Louisiana (COE 1998).



The Red River enters Louisiana from Arkansas in the northwest portion of the state and follows a southeasterly course, passing through or forming the boundary of 10 parishes, until it reaches its mouth at the Mississippi River. Shreveport and Alexandria are the principle cities located along the river. The Red River received its name from the high concentration of red soil present in the river following flood periods. Much of the basin is forested and agriculture lands are primarily located within the Red River's historic floodplain.

Navigational improvements on the Red River began in the early part of the 19th century. The most recent improvements, part of the \$1.9 billion Red River Waterway Project (RRWP) authorized by Congress with the Rivers and Harbors Act of 1968, consisted of dredging a channel 9 feet deep and 200 feet wide and adding a series of five lock and dam complexes to improve navigation from the Mississippi River to Shreveport. Other improvements within the RRWP consisted of developing a comprehensive plan for bank stabilization from the Denison Dam on the Texas/Oklahoma boarder to the Mississippi River.

There are roughly 99 species of freshwater fishes (W. Kelso, personal communication), 36 species of mussels (Vidrine 1993), and 18 species of crawfish (J. Walls, personal communication) found within the Red Basin.

Water Quality:

The 2004 Water Quality Inventory Report (LDEQ 2004) indicated that 23% of the 71 water body subsegments within the basin were fully supporting their three primary designated uses. However, 75% of the subsegments were not supporting their designated use for fish and wildlife propagation. The suspected causes for these water quality

problems include: metals, nutrients, polychlorinated biphenyls (PCBs), fecal coliform, non-native aquatic plants, organic enrichment and low concentration of dissolved oxygen, dissolved and suspended solids, pH levels, sedimentation/siltation, and turbidity. The suspected sources of the water quality problems include: forestry activities, crop production, pasture lands, home sewage systems, land development and urban runoff, channelization or dredging of streams, removal of riparian vegetation, and road construction.

RED BASIN SPECIES OF CONSERVATION CONCERN (17)		
CRUSTACEANS	Chub Shiner	MUSSELS
Kisatchie Painted Crawfish	Suckermouth Minnow	Louisiana Pearlshell
Javelin Crawfish	Bluehead Shiner	Louisiana Pigtoe
Vernal Crawfish	Blue Sucker	
Twin Crawfish	River Redhorse	REPTILES
	Crystal Darter	Alligator Snapping Turtle
FRESHWATER FISH	Western Sand Darter	Ouachita Map Turtle
Pallid Sturgeon		
Paddlefish		

Louisiana pearlshell

Priority Species Research and Survey Needs:

Crystal Darter: First recorded in the Red River in 2002, extending the documented range of this species westward (Pezold and Antwine 2003). Continue to survey its preferred habitat to determine its current distribution.

Louisiana Pearlshell: Research needed on host fish species.

Alligator Snapping Turtle: Baseline mark-release data were obtained during the late 1990s. New surveys are needed to obtain population trend data for this species.



Louisiana Pearlshell

Species Conservation Strategies:

1. Crustaceans: Develop a protocol to monitor abundance, distribution patterns, and habitat quality using baseline data obtained in SWG project T10 (Walls 2003).
2. Louisiana Pearlshell:
 - Develop a survey protocol to monitor the remaining populations, especially in streams located within the KNF.
 - Partner with the USFWS to implement conservation recommendations in the recovery plan (USFWS 1989).
 - Work with landowners to maintain water quality in the streams inhabited by the Louisiana pearlshell.

Threats Affecting Basin:

The following table illustrates the threats identified for the Red Basin and the sources of these threats. This represents all threats and sources of threats identified for this basin.

Source of Threat	Threat							
	Altered Composition/ Structure	Competition for Resources	Habitat Destruction or Conversion	Habitat Disturbance	Modification of Water Levels; Changes in Natural Flow Patterns	Nutrient Loading	Sedimentation	Toxins/ Contaminants
Channelization of rivers or streams	XXX		XXX	XXX	XXX		XXX	
Commercial/industrial development							XXX	XXX
Construction of ditches, drainage or diversion systems	XXX					XXX	XXX	
Construction of navigable waterways	XXX				XXX		XXX	
Crop production practices	XXX		XXX			XXX	XXX	
Dam construction	XXX		XXX	XXX	XXX	XXX	XXX	
Incompatible forestry practices			XXX	XXX			XXX	
Industrial discharge								XXX
Invasive/alien species	XXX	XXX	XXX	XXX				
Levee or dike construction	XXX		XXX				XXX	
Management of/for certain species			XXX	XXX				
Operation of dams or reservoirs	XXX		XXX	XXX	XXX		XXX	
Operation of drainage or diversion systems	XXX		XXX				XXX	

Basin Conservation Strategies:

1. Develop a comprehensive survey methodology for the Red River Basin.
2. Conduct a detailed inventory of the Red River above Shreveport that focuses on habitats and species of conservation concern.
3. Develop partnerships with regulatory agencies to share data on habitat threats and to ensure compliance of existing regulations.
4. Work with LANSTF to identify and address threats related to invasive species.
5. Prepare educational material on potential impacts invasive species to the Red River.
6. Continue LDWF involvement in the environmental review process for all river basin related projects and identify appropriate mitigation methods.
7. Develop education and outreach programs with NRCS to reduce sediments and nutrient loading within the Red River Basin.

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