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Scenic Rivers Review

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Streams: Sensitive and Unique Habitats

By Kyle F. Balkum

We intend for this article to serve as a brief overview of streams in Louisiana. Hopefully we can all come to a greater appreciation of these valuable natural resources.

Introduction

Louisiana has over 66,000 miles of rivers and streams[1]. We know in Louisiana that streams are important for agriculture, transportation and stormwater drainage. They provide a livelihood for trappers and fishermen. Many of you may even use streams for recreation, including fishing, hunting, paddling, boating, swimming, bird watching, wildlife photography, etc. The more fortunate may enjoy the scenic beauty and peace of living on or near a stream.

However, in our water rich State we sometimes take streams for granted. According to the U.S. Environmental Protection Agency 76% of Louisiana's rivers and streams are impaired, meaning that because of poor water quality the streams do not support all of their intended uses[1]. Designated uses may include recreation (i.e., swimming and boating), fish and wildlife propagation (i.e., fishing and fish consumption), drinking water supply and agriculture.

Stream Types, Sources and Characteristics

Streams are any natural channel of flowing water. Streams are often classified as perennial, intermittent or ephemeral. Perennial streams flow continuously. Intermittent streams flow only at

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Spring Creek in Rapides Parish supports swimming and boating but fishing is impaired[2]. (Credit: K. Balkum)

Bogue Falaya River in St. Tammany Parish supports swimming and boating but fishing is impaired[2]. (Credit: C. Davis)

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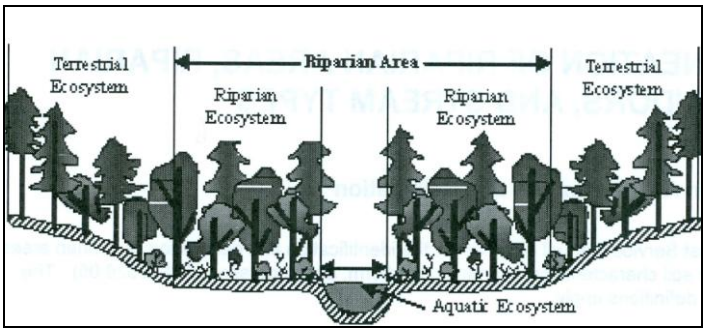
certain times of the year. Ephemeral streams flow only during and after a period of rainfall. Streams provide habitat for fish, aquatic insects, crawfish, mussels, and many species of turtle, snake, frog and salamander. For terrestrial wildlife and birds, streams and adjoining riparian zones are places of shelter, sources of food and corridors for migration.

The origin of a stream is called its source. The source of a stream may be a spring from which groundwater flows to the surface. It may be surface runoff whereby rain water flows over land before entering a stream channel. Stream sources may also be lakes or wetlands.

Stream gradient or the drop in elevation of a stream is an important characteristic of a stream. Low gradient streams are found in flat, low-lying areas and are typically slow-moving, have wide flood plains and extensive looping meanders. Our bayous in Louisiana are low gradient streams. High gradient streams are found flowing through gently sloping terrain. They are typically faster flowing, have narrow channels, no flood plain and little shifting channels. Higher gradients create habitat diversity such as sequences of runs, riffles and pools which in turn can increase biological diversity (i.e., species adapted to deep or shallow, slow or fast moving water) (Figure 1).

Riparian Areas

Riparian areas are found immediately adjacent to stream banks. They may consist of fairly narrow strips of land to broader bottoms that represent a transition between drier upland areas and streams.



Riparian area (Credit: U.S. Forest Service)

Forested riparian areas perform important ecological and environmental services. Vegetated riparian areas reduce the amount of sediment and nutrients that reach streams in surface runoff. They provide wildlife habitat and wildlife corridors. They provide stream shading which lowers water temperatures and

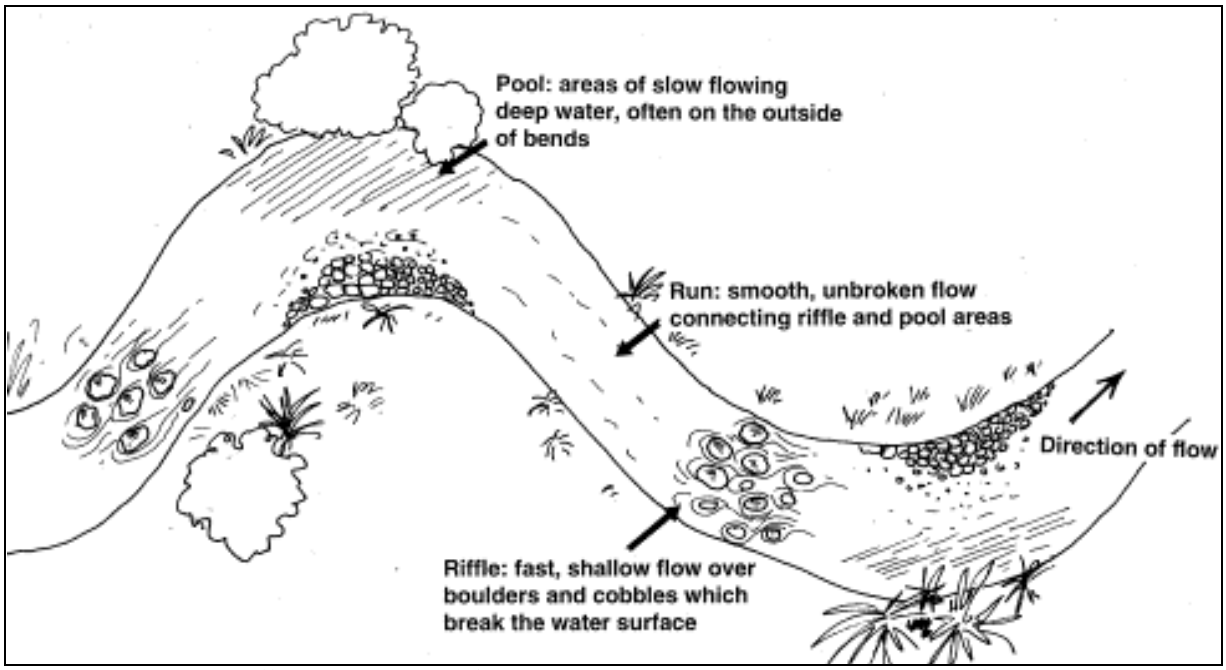


Figure 1. Stream run-riffle-pool sequence (Credit: NIWA - www.niwa.co.nz/our-science/freshwater/tools/shmak)

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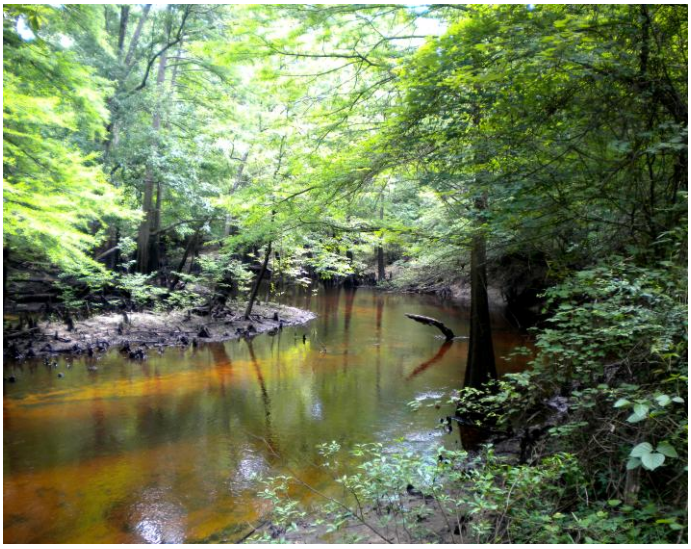
improves aquatic organism habitat. They protect against stream bank erosion, reduce flood peaks by storing flood waters, provide a source of detritus and woody debris for aquatic and terrestrial organisms, and remove and store carbon from the atmosphere. To say that riparian areas are important is an understatement. They are critical for maintaining healthy streams and species diversity.

Which stream would you live in if you were a fish?



Corney Bayou in Union Parish (Credit: Ryan Cornet, Landpoint, Inc.)

Creek with cleard bank in E. Baton Rouge Parish (Credit: K. Balkum)

Threats to Streams

Threats to stream ecology are many and they include the following:

- clearing and development in riparian areas;
- draining and filling wetlands;
- wastewater, stormwater and industrial discharges;
- introduction of non-native species;
- release of anthropogenic mercury
- extraction of sand and gravel within streams and floodplains;
- litter and illegal dumping;
- forestry and agricultural activities that do not adhere to best management practices; and
- hydromodifications (e.g., dredging, forced drainage, flow alterations, sediment resuspension, water withdrawal).

All of these threats result in reduced water quality. In turn, poor water quality adversely affects fish and other aquatic life inhabiting our streams and also hurts our opportunities to enjoy these unique and diverse natural resources. Government agencies will continue efforts to enhance and improve water quality through educational outreach programs and enforcement of laws and regulations. But each of us has at least a small part to play in the conservation of our streams. We can conserve water in our homes and places of business. We can encourage others not to litter or dump chemicals in storm drains. We can plant trees on stream banks. We can play and work responsibly in our State's waterways. Let's protect our streams not only for our use and enjoyment, but for future generations.

[1] – U.S. EPA, Louisiana Water Quality Assessment Report
[2] – LDEQ 2012 Integrated Report of Water Quality in Louisiana

If you have enjoyed time on a Scenic River and want to share your experience, please submit your story and pictures to us and it may be included in future issues of this newsletter.

LDWF Proposes Revised Rules for Scenic Rivers Regulations

The Louisiana Wildlife and Fisheries Commission approved a notice of intent to amend the rules governing the Natural and Scenic Rivers System.

Recommendations to amend the existing rules were made by the Louisiana Department of Wildlife and Fisheries.

Some of the Notice of Intent (NOI) proposed changes include:

- Prohibiting the use of a motor vehicle or other wheeled or tracked vehicle on a designated system stream, except for permitted uses and direct crossings by immediately adjacent landowners, lessees, and persons who have written permission from the landowner for non-commercial activities that do not significantly degrade the ecological integrity of the stream.

- Requiring a permit for a moored houseboat or floating camp, except when moored to a legally permitted piling, pier or bulkhead or moored to trees using connections that do not damage the trees and with written permission of the owner of the trees. A permit or letter of certification from the parish health unit, verifying an approved sewerage disposal system is on board, would also be required.

To review the full NOI document, go to http://www.wlf.louisiana.gov/action-items.

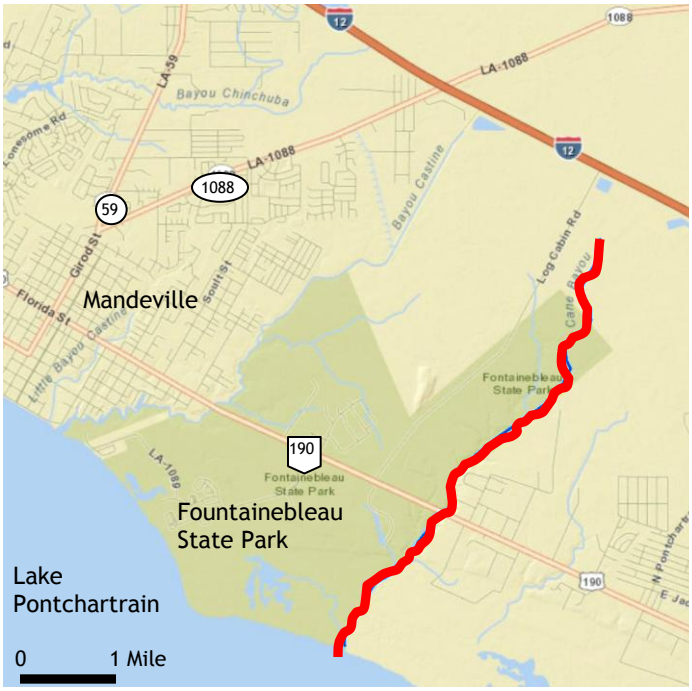
Interested persons may submit comments on the proposed changes to Keith Cascio, Scenic Rivers Coordinator, P.O. Box 98000, Baton Rouge, LA 70898-9000, or via email at kcascio@wlf.la.gov through December 20, 2013.

Stream Spotlight:

Bayou Cane

By Mathew Weigel

Located in St. Tammany Parish, just East of Mandeville; nestled between Fontainebleau State Park and Big Branch National Wildlife Refuge, flows Bayou Cane. The bayou, from its head waters to Lake Pontchartrain, is a designated Louisiana Natural and Scenic River. With its close proximity to the population centers of the North Shore, moderate length, and varied habitat, the approximately six mile long bayou is a convenient retreat which offers visitors a chance to explore a number of Louisiana's natural communities.



Bayou Cane, St. Tammany Parish

Near its head waters, the stream runs through a natural area, the St. Tammany State Game Refuge. These northern reaches of the bayou are bordered by a large tract of pine flatwoods and overgrown savannah, but the stream is not navigable in this area and is best explored on foot from the State Game Refuge. The stream leaves the refuge and becomes navigable to small craft as it runs for a half mile or so along the perimeter of a residential area.

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Just beyond this suburbanized zone, Highway 190 crosses the bayou near mile four (1.7 stream miles north of Lake Pontchartrain), segregating the stream's southern segment. Direct access to these lower reaches of the stream is made easy by a small public boat ramp located immediately southwest of the Highway 190 crossing. The facility is primitive, but affords visitors parking and a place to launch small craft; the bayou is easily accessed traveling downstream from the launch.

From the launch, as you head down stream toward the lake, you continue through a shaded channel surrounded by mixed pine uplands yielding to pine flatwoods containing mature hardwood specimens. One can spot sizable live oaks, hackberries, red maples, magnolias and many other wetland tree species. As you leave the pine flatwoods community, you'll begin to see the tall pines replaced by cypress as the bayou transitions into cypress swamp. This swamp is rather open, allowing fresh water marsh vegetation ample voids to inhabit. Among the fresh water marsh plants visible from the bayou are bulltongue, cutgrass and cattail. The cypress trees along the bayou quickly begin to thin and those remaining show signs of stress from subsidence and higher salinity. As you continue southward, a few stubborn cypress trees persist, but the dominant freshwater marsh vegetation begins to be replaced with species indicative of a transitional marsh community. In this area the bayou's bankline is perforated by tidal creeks and if water levels are favorable, these creeks offer passage to further exploration amongst the surrounding wetlands. Although the ridges and banks are still occasionally punctuated by locust, live oaks, hackberries and other hardy volunteers, colonies of Roseau cane (the bayous namesake) dominate while wax myrtle and groundsel bush attempt to maintain a foothold within their ranks. This intermediate marsh continues along the banks until the bayou meets Lake Pontchartrain. At this confluence the bayou boasts one last botanical offering, extensive seagrass beds, a very rare occurrence in Louisiana waters.

Cypress swamps along Bayou Cane (Credit: Z. Chain)

Many bird, herp, mammal and fish species inhabit the bayou. Some of the more ubiquitous bird species found along the bayou include kingfishers, various herons, egrets and songbirds. Several raptors make their homes along the bayou. An active osprey nest overhangs the bayou and bald eagles are known to nest in the vicinity. Birders visiting the area should not be disappointed and if vigilant, may enjoy a glimpse of a red-cockaded woodpecker, an endangered species that inhabits the area. Alligators are not uncommon in the bayou and locals report occurrences of large individuals. Other reptiles and amphibians indicative of slow moving streams, swamps and marshes are abundant throughout the system, and a trained ear might detect the call of the ornate chorus frog, an extremely rare species which is critically imperiled in Louisiana. Furbearers are common along the bayou, but a charismatic mammal of particular interest may be encountered in the shallows, the endangered West Indian Manatee. Fish species found in the bayou are typical of slow moving freshwater systems and estuarine environments. Fishing is popular on the bayou and anglers have regular success with bass, bluegill and other sunfish species. If conditions are right, speckled trout and other estuarine fish may be taken near the mouth of the bayou.

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Osprey nest along Bayou Cane (Credit: M. Weigel)

The river is tidally influenced so water levels fluctuate slightly as the coastal waters of the lake ebb and flow. Accordingly, salinity levels are subject to change and saltier waters may migrate upstream as conditions allow. Although much of the watershed is healthy there are developed areas east of the stream that drain into the bayou. Unfortunately, at times these areas may be responsible for reduced water quality within the stream due to the discharge of sanitary effluents and stormwater runoff.

Many recreational opportunities exist and the bayou's slack flows and short length are ideal for leisurely paddling trips. It is a great stream for introducing newer paddlers to canoeing or kayaking, while connectivity to the lake will satisfy intermediate and advanced paddlers as well. A quick outing, from the launch at Highway 190 to the mouth of the bayou and back, can take as little as an hour, but the bayou's diversity, tributaries and tidal creeks warrant a longer stay. If conditions and skill allow, a paddler can easily access the State Park beach to the west or even voyage to Bayou Lacombe from the launch at Bayou Cane. Due to shallow waters and obstructions, the bayou might be best explored by paddlecraft; however, the launch on Bayou Cane can accommodate motorized boats and such vessels regularly enter from the lake and run the bayou from its mouth to the Highway 190 bridge. Due to possible underwater obstructions and shallow areas, precautions should be taken if traveling by power boat.

Mouth of Bayou Cane (Credit: Z. Chain)

Prior to European settlement, the early Choctaw visiting Bayou Cane gave it the name chela'ha, or "noisy" in reference to the sound of the wind rustling through the cane found along the bayou. Due to continued conservation efforts as well as protection afforded by the Louisiana Scenic Rives Program, modern day visitors to the bayou can still find those same cane covered banks near the bayou's confluence with Lake Pontchartrain, and with a little quiet, a little luck, and a little breeze, hear what the first visitors heard thousands of years ago.

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