Water-Quality Data and Descriptions of Biota for Selected Watersheds of the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, September 1996 through March 1997

By Roland W. Tollett and Robert B. Fendick, Jr.

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CONVERSION FACTORS, VERTICAL DATUM, AND ABBREVIATED WATER-QUALITY UNITS

Multiply	By	To obtain
inch (in.)	25.4	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
foot per mile (ft/mi)	0.1894	meter per kilometer
inches per year (in/yr)	2.54	centimeter per year
square foot (ft^2)	0.09290	square meter
square mile (mi^2)	2.590	square kilometer

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Temperature in degrees Fahrenheit (°F) can be converted to degrees Celsius (°C) as follows: °C = (°F - 32)/1.8.

Abbreviated water-quality units:

milligrams per liter (mg/L)
micrograms per gram (µg/g)
micrograms per kilogram (µg/kg)
micrometer (µm)
microsiemens per centimeter at 25 degrees Celsius (µS/cm)
milliequivalents per liter (meq/L)
millimoles per liter (mmol/L)
micrograms per liter (µg/L)

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ABSTRACT

The U.S. Army Joint Readiness Training Center and Fort Polk is studying the potential impacts of conducting increased training exercises on approximately 45,000 acres of the Kisatchie National Forest. The area being considered for increased use is known locally as the Limited Use Area (LUA) of the Vernon Ranger District, Kisatchie National Forest, and is located south of the Fort Polk Military Reservation. The proposed land use would involve increased types and frequencies of training activities. The increased use could affect the water quality of streams in the watersheds of the LUA, including the downstream reaches of Whiskey Chitto Creek and Sixmile Creek. These reaches are a part of the Louisiana Natural and Scenic Rivers System.

Water-quality data are presented for 14 stream sites situated in the LUA and one additional site south of the LUA. Specific conductance, in microsiemens per centimeter at 25 degrees celsius (µS/cm), and pH values are lowest (7 µS/cm and 4.95, respectively) in the eastern part of the LUA, and the values increase (226 µS/cm and 7.35, respectively) in the western part of the LUA. Daily calcium and magnesium data for the six sites are presented in tables. Calcium values ranged from less than 1 mg/L (milligram per liter) in Sixmile Creek to greater than 15 mg/L in Whiskey Chitto Creek . Magnesium values ranged from 1.3 mg/L in Whiskey Chitto Creek to less than 0.6 mg/L in Sixmile Creek. Some trace metal concentrations are above detection limits but below background levels for the area. Concentrations of explosive compounds in bed material are below detection limits at the 14 sites sampled. Periphyton algal community samples collected at the sites within the LUA are representative of communities found in mineral-poor waters, low in alkaline earths and in buffering capacity, as described in other localities in the United States. Freshwater mussel populations are lowest in the headwaters of the Sixmile Creek system. Descriptions of terrestrial biota, including plant species, vegetation type, and rare and endangered species, indicate that the LUA has a high level of diversity of both plants and animals.

INTRODUCTION

The U.S. Army Joint Readiness Training Center and Fort Polk is studying the potential effects of conducting increased training exercises on approximately 45,000 acres of the Kisatchie National Forest. The area being considered for increased use is known as the Limited Use Area (LUA) of the Vernon Ranger District, Kisatchie National Forest, and is located south of the Fort Polk Military Reservation (hereinafter referred to as the Reservation) (fig. 1). The proposed land use would involve increased types and frequencies of training activities.

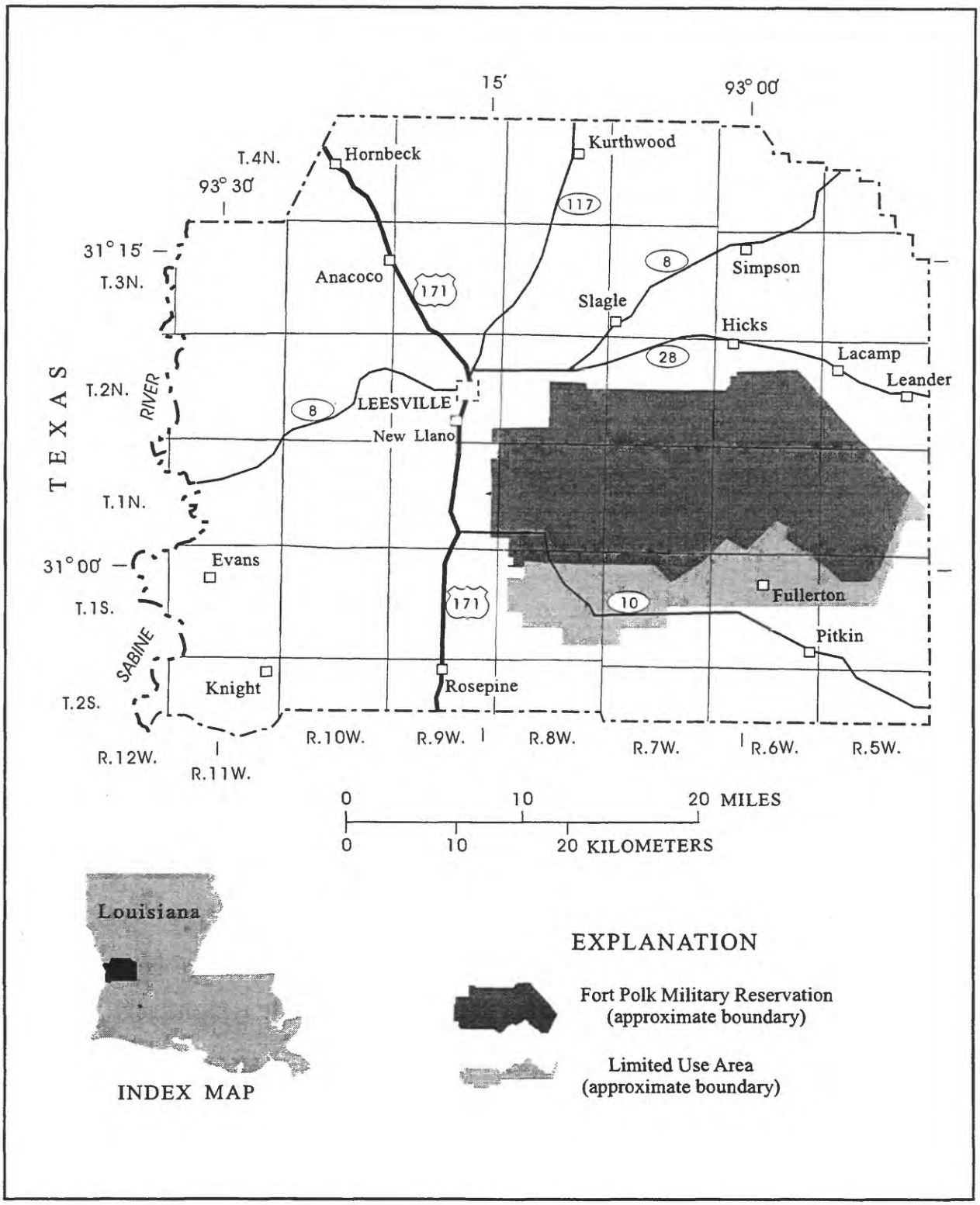


Figure 1. Fort Polk Military Reservation and the Limited Use Area of the Kisatchie National Forest, Vernon Ranger District, Vernon Parish, Louisiana.

The expanded use could affect the water quality of streams in the watersheds. Background information and data are needed to describe the water quality (defined as the fitness of water for use, being affected by physical, chemical, and biological factors) of streams located in the LUA. In September 1996, the U.S. Geological Survey (USGS), in cooperation with the U.S. Forest Service (USFS) and the U.S. Army, began a study designed to collect and document the water-quality data and biota for perennial creeks and associated watersheds draining the LUA, with additional emphasis on the scenic rivers.

The southern reaches of two streams, Whiskey Chitto and Sixmile Creek, located within the LUA are included in the Louisiana Natural and Scenic Rivers System. These reaches are a part of approximately 1,400 miles of Louisiana streams that are protected through a State law enacted in 1970. A natural and scenic river is defined as a free-flowing river, stream, or bayou that has not been altered by mankind in the last 25 years, has no or few man-made structures on its banks, and has native vegetation covering its shoreline (Cormier and others, 1990, p. 58).

Purpose and Scope

This report presents water-quality data and descriptions of biota for selected watersheds in the LUA. Descriptive information and data on watersheds and streams are included. Field and laboratory methods used in the collection of water-quality data by the USGS are described, and all data collected are presented in tables.

Water-quality data are presented for five sites within the LUA and one south of the LUA along the scenic streams. Data presented for six sampling sites include daily minimum, median, and maximum values for specific conductance, pH, and water temperature; daily sample composites of calcium and magnesium concentrations; and major inorganic chemical data.

Additional data are presented for 14 sites, five sites (mentioned above) along the scenic streams as well as nine other sites located within the LUA. These data, which provide areal stream coverage, include physical properties and chemical constituents in surface water and chemical constituents in bottom material; bacteria; sediment grain size in bottom material; periphyton species identification; freshwater mussel identification and population counts; and terrestrial biota such as plant species, vegetation type, rare and endangered species, and bog locations.

Knowledge of current (1997) water-quality conditions of the streams within the LUA will aid the U.S. Forestry Service and the U.S. Army in assessing potential effects of expanded military training exercises. The water-quality data presented in this report will be included in an Environmental Assessment of the LUA.

Acknowledgments

The authors express appreciation to Charles H. Stagg, Chief of the Environmental and Natural Resources Management Division of the Directorate of Public Works for the U.S. Army Joint Readiness Training Center and Fort Polk, for assistance provided during the design and preparation of this report. The authors also extend their appreciation to Malcom F. Vidrine, professor of biology at Louisiana State University at Eunice, Louisiana, for conducting field work and providing and summarizing freshwater mussel data; Charles M. Allen, professor of biology at Northeast Louisiana University, for conducting field work and providing descriptions of biota; and Fred Bryan for conducting periphyton analyses.

DESCRIPTION OF THE STUDY AREA

The study area is located in the southern half of Vernon Parish, Louisiana, extending from southeast of Leesville to northwest of Pitkin, Louisiana. The relative locations and approximate boundaries of the Reservation and the LUA in Vernon Parish are shown in figures 1 and 2. Information on the environmental setting and climate is included to provide an overview of the LUA and surrounding areas.

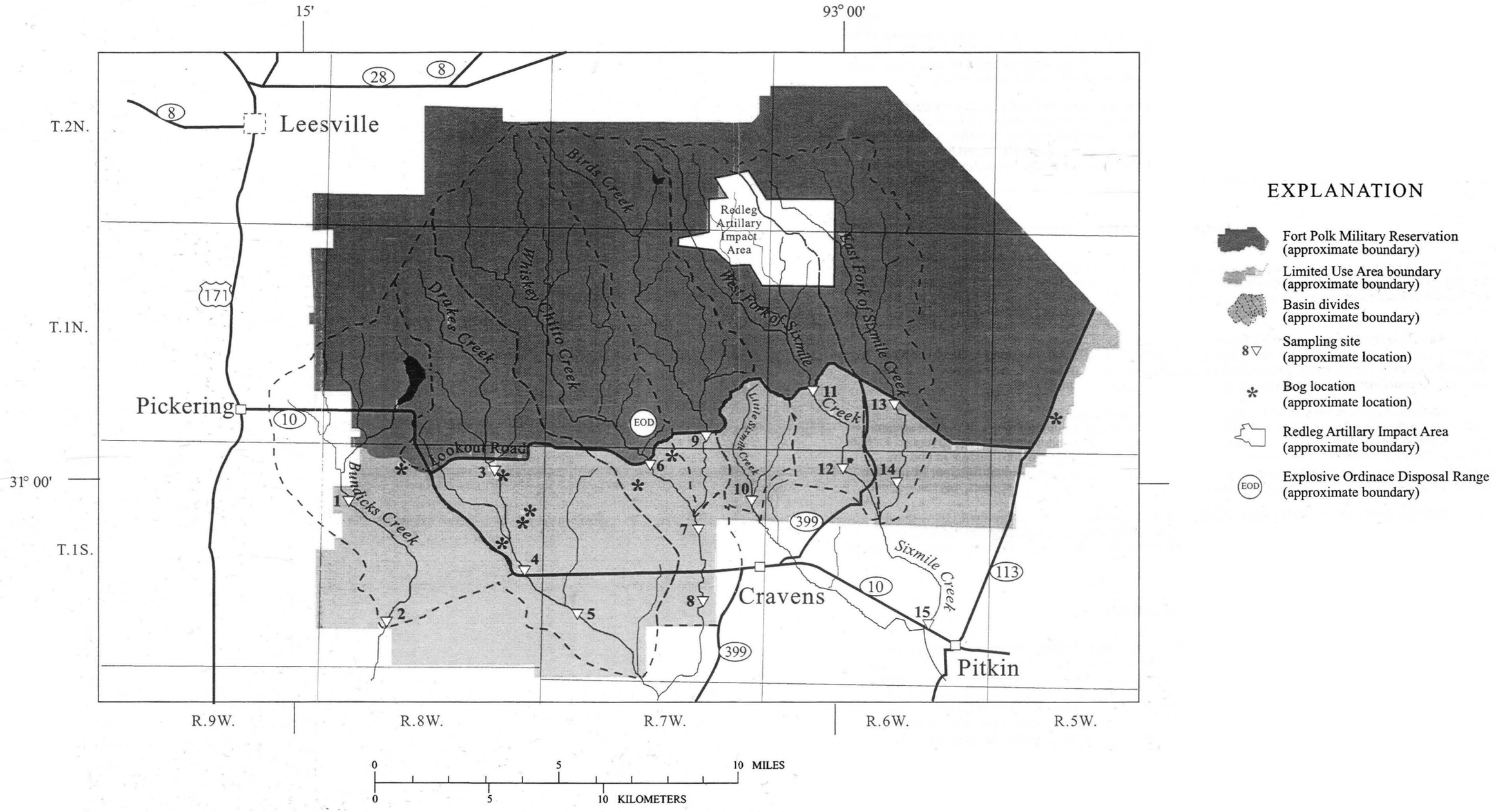


Figure 2. Location of the study area, basin divides, sampling sites, and bogs within the Fort Polk Military Reservation and Limited Use Area boundaries, Vernon Parish, Louisiana.

Environmental Setting

The study area is located on a topographic high and is near the headwaters of the Calcasieu River system. The headwaters of Whiskey Chitto Creek and West and East Fork of Sixmile Creek, and the two scenic rivers originating on the Reservation, flow through the LUA (fig. 2) are of particular concern to the U.S. Army. Whiskey Chitto Creek drains the land containing the Explosive Ordnance Disposal (EOD) Range, while West and East Fork of Sixmile Creek drain the Redleg 1 Artillery Impact Area (fig. 2). Downstream, south of the Reservation, the reaches of Whiskey Chitto Creek and Sixmile Creek are a part of the Louisiana Natural and Scenic Rivers System. Other streams of concern in the study area are Birds (a tributary to Whiskey Chitto Creek) Bundick, Drakes, and Little Sixmile Creeks.

The streams in the study area are first, second, and third order streams that drain hilly, dense piney uplands lacking intensive agricultural and/or urban use. The altitude of the drainage divides north of the study area range from 400 to 450 feet above sea level, with the outlets of the drainage basins at the southern boundary of the LUA ranging from 150 to 200 feet above sea level. The drainage basins are characterized by loamy soils, high runoff and infiltration, and rapid changes in creek stages during heavy rainfall. The primary land uses within the study area are recreation, logging, and limited military training activities.

Unconsolidated sedimentary deposits, ranging in age from Miocene to Pleistocene, crop out in Vernon Parish and the LUA. Only sediments of the Castor Creek and Blounts Creek Members (Evangeline aquifer) of the Fleming Formation and Pleistocene deposits are present at the surface in the LUA (fig. 3). Stratigraphic units and hydrogeologic units are shown in figure 4.

Climate

The climate is humid subtropical. The average annual rainfall for the 5-year period 1992-96 was 58.3 inches at the Fort Polk Airfield. During 1992-96, annual rainfall ranged from 48.03 inches in 1992 to 74.52 inches in 1995. The drier months are during late summer (August) through early fall (October) (Lieutenant Patricia Vollmer, Fort Polk Airfield Weather Station, written commun., 1997). In 1996, the average temperature for the study area was 65.3 °F, a -0.1 departure from normal; the high temperature was 98 °F on July 13; and the low temperature was 12 °F on February 4. The coldest months are December through February, with a average temperature of 48.7 °F. The hottest months are June through August, with a average temperature of 78.5 °F (National Oceanic and Atmospheric Administration, 1996).

DATA COLLECTION AND PRESENTATION

Methods used to collect descriptive information and data on watersheds and streams, water-quality, and biota are discussed in this section. Brief discussions of the data that were collected and analyzed are included. The data and corresponding figures are presented at the back of the report.

Data were collected at 15 sites (fig. 2 and table 1): 2 on Bundick Creek, 3 on Drakes Creek, 3 on Whiskey Chitto Creek, 1 on Birds Creek, 1 on Little Sixmile Creek, and 2 each on West and East Fork of Sixmile Creek within the LUA; 1 was on Sixmile Creek south of the LUA. Most of the data for the study was collected in the fall of 1996. No historical water-quality data in the LUA were available for the two scenic rivers.

Drainage areas for watersheds encompassing the LUA were calculated using the horizontal plane enclosed by the topographic divide where direct surface runoff drains into the stream from a specific point along the stream (Sloss, 1971). Drainage areas were measured using an Altek AC40 digitizer and the Fort Polk Military Installation Map, 1976 edition. Basin gradients were calculated using the "85-10" slope factor as described by Singh (1992).

Stream habitats were characterized at the basin, segment, and reach levels, using protocols outlined by the USGS (Meador and others, 1993). Stream habitat characterization includes physical, chemical, and biological data that represent major natural and human factors, such as ecoregion, stream size, riparian habitat, hydrology, and geology. Field surveys were conducted at the 14 sampling sites in the LUA, and

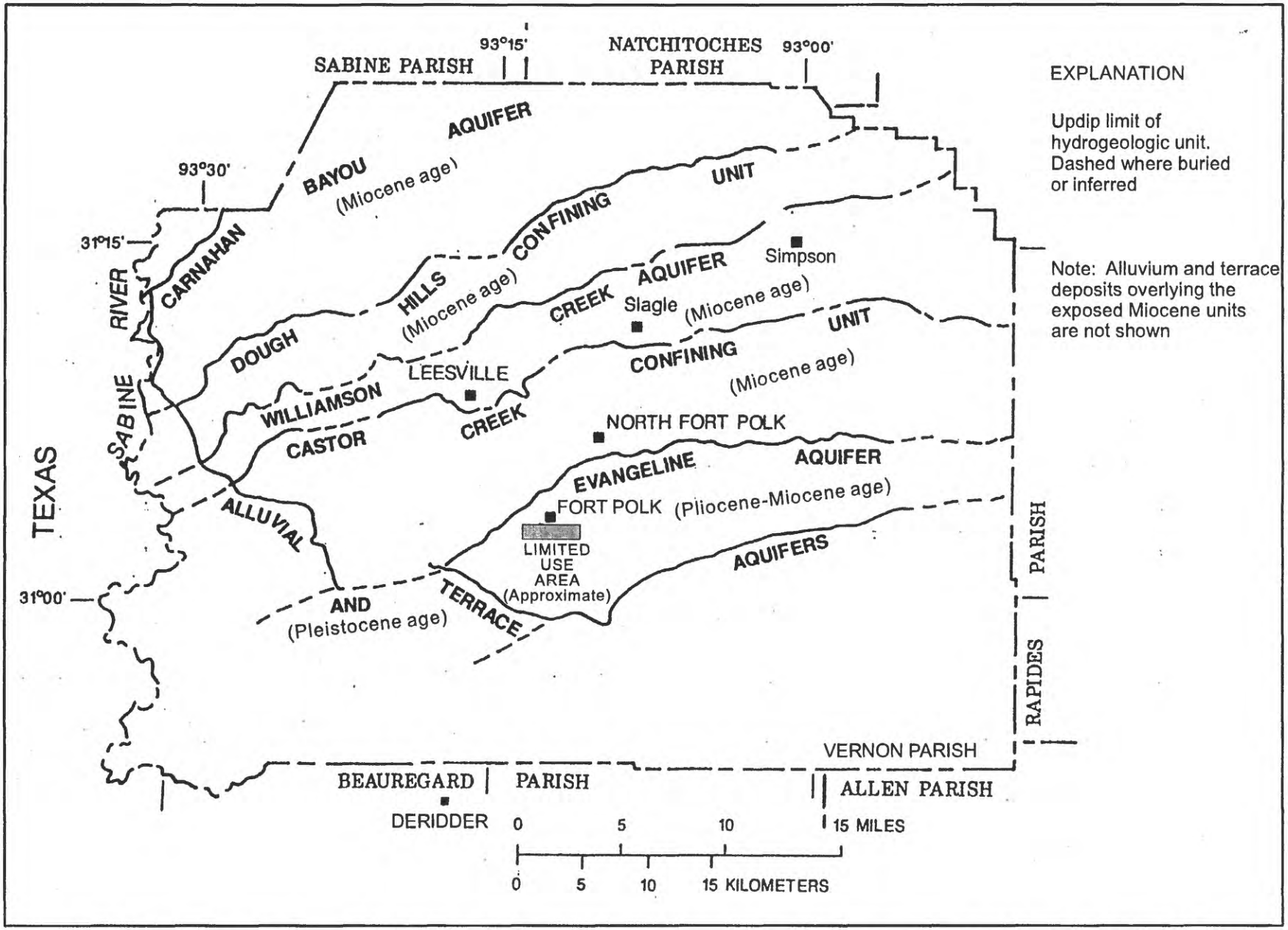


Figure 3. Updip limits of hydrogeologic units of Miocene age and younger deposits in Vernon Parish and the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana (adapted from McWreath and Smoot, 1989).

Geologic Age		Stratigraphic unit		Hydrogeologic unit	
System	Series				
Quaternary	Pleistocene	Alluvial deposits and terrace deposites		Alluvial aquifers and terrace aquifers	
Tertiary	Pliocene ? Miocene	Fleming Formation	Blounts Creek Member	Evangeline aquifer	
			Castor Creek Member	Castor Creek confining unit	
			Williamson Creek Member	Jasper aquifer system	Williamson Creek aquifer
			Dough Hills Member		Dough Hills confining unit
			Carnahan Bayou Member		Carnahan Bayou aquifer
			Lena Member	Lena confining unit	
	? Oligocene	Catahoula Formation		Catahoula aquifer	
		Vicksburg Group, undifferentiated		Vicksburg-Jackson confining unit	
	Eocene	Jackson Group, undifferentiated			
		Claiborne Group	Cockfield Formation	Cockfield aquifer	

Figure 4. Stratigraphic and hydrogeologic units outcropping in Vernon Parish, Louisiana, and the study area (adapted from McWreath and Smoot, 1989).

Table 1. Reference list of sampling site number, latitude and longitude, and location, Vernon Parish, Louisiana (see fig. 2)

[Latitude and longitude is for the center transect of each stream reach; ~, approximately; ft, feet]

Site number	Downstream order number	Latitude and longitude	Location
1		3059300931307	Bundick Creek ~400 ft south of bridge on Forest Service Road 422.
2		3056310931205	Bundick Creek ~200 ft north of bridge on Forest Service Road 410.
3		3100130930901	Drakes Creek ~200 ft north of bridge on Forest Service Road 421.
4		3057520930817	Drakes Creek ~300 ft north of bridge on Louisiana Highway 10.
5		3056430930641	Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.
6	08013630	3100320930449	Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road.
7	08013660	3058470930323	Whiskey Chitto Creek ~200 ft northwest of bridge on Ray Gill Road east of Leesville.
8		3057260930324	Whiskey Chitto Creek ~200 ft north of old Athison Topeka and Santa Fe railroad bridge.
9	08013650	3101150930312	Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.
10		3059330930149	Little Sixmile Creek near the end of Gravel Pit Cutoff Road.
11	08013850	3102180930014	West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road.
12		3100300925919	West Fork of Sixmile Creek ~750 ft west of Fullerton Lake.
13	08013880	3102030925802	East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.
14		3100100925753	East Fork of Sixmile Creek ~200 ft northeast of bridge on Fullerton Blacktop Road (FS 412).
[1]15	08013895		Sixmile Creek ~300 ft north of bridge on Louisiana Highway 458 near Pitkin.

[1]Site number 15 is located south of the Limited Use Area, Vernon Ranger District, Kisatche National Forest.

data were entered into the reach characterization section of the stream habitat assessment. A wading rod, a Price AA flow meter, and a digitizer were used to collect velocity measurements. A Brunton compass and Suunto clinometer were used to measure downstream flow direction, canopy angles, and bank angles. A secchi disk was used to measure light penetration.

Stream habitat characterization forms are presented in figures 12-25. The stream characterization form is divided into three sections: basin, stream segment, and a first-level reach. A site map corresponding to each of the 14 stream reach characterization forms is included in the first-level reach section (figures 12-25, at back).

Information on basin area, length, and gradient is listed in table 2 (at back). Additional area calculations were performed to document the extent of public land within the LUA, net acreage of the Kisatchie National Forest Land within the LUA, and drainage area for each sampling site outlet. The Whiskey Chitto system, which includes Birds Creek, has the largest drainage area, followed closely by the Sixmile Creek drainage area, which consists of East Fork and West Fork Creek. Stream length, change in elevation, and basin gradient for each sampling site also are presented. Little Sixmile Creek has the steepest basin gradient, approximately 31 feet per mile and Whiskey Chitto Creek had the lowest basin gradient, approximately 12 feet per mile.

Brief descriptions of the surface soils in the LUA are listed in table 3 (at back) (Herbert McDaniel, U.S. Department of Agriculture-Natural Resources Conservation Service, written commun., 1997). The surface soils of the upland areas of the LUA tend to be well drained with low natural fertility, and the surface soils in lower areas tend to be acidic and poorly drained. Table 4 (at back) lists the location of these soils in the LUA based on slope and position within the watershed.

WATER QUALITY

Water-quality sampling for the two scenic rivers included collecting physical and chemical data. Physical properties data included average daily specific conductance, pH, and temperature; chemical data included major inorganic ions and daily calcium and magnesium concentrations.

Reaches of Louisiana Scenic Rivers

Daily water-quality data were collected from November 1996 to February 1997 for six sites on the two Louisiana Natural and Scenic Rivers in the LUA. Results for physical properties and chemical data for the two scenic rivers are presented in the following discussions.

Physical properties were determined hourly with on-site multiparameter water-quality data recorders from November 5, 1996, to February 18, 1997, at sites 6 and 7 along Whiskey Chitto Creek, site 9 along Birds Creek, site 11 along West Fork Creek, site 13 along East Fork Creek, and site 15 along Sixmile Creek (fig. 2). These water-quality data recorders were placed on the stream bottom for collection of data to determine physical properties, including specific conductance, pH, and temperature.

Daily minimum, maximum, and median values for specific conductance, pH, and temperature are presented in tables 5A to 10C (at back) for sites 6, 7, 9, 11, 13, and 15. Plots representing the daily median values are presented in figures 5 to 7. Some data values were missed when the water-quality recorders were removed from the field for monthly cleaning and calibration checks. Additional data were omitted due to probe fouling and burial by sediments and debris. Specific conductance and pH values are lowest (7 µS/cm and 4.95, respectively) in the eastern part of the LUA (Sixmile Creek), and increase (226 µS/cm and 7.35, respectively) towards the western part the LUA.

To determine chemical constituents, water samples were collected from sites 6, 7, 9, 11, 13, and 15 using an automatic ISCO water sampler and by dipping. ISCO samplers were set to collect 1 liter of water daily from sites 11, 13, and 15. For consistency, dipping samples were collected daily, with the exception of weekends, from sites 6, 7, and 9. Daily samples were filtered through a 142 millimeter (mm) diameter 0.45 micron cellulose nitrate membrane filter. The samples were then treated with nitric acid and shipped

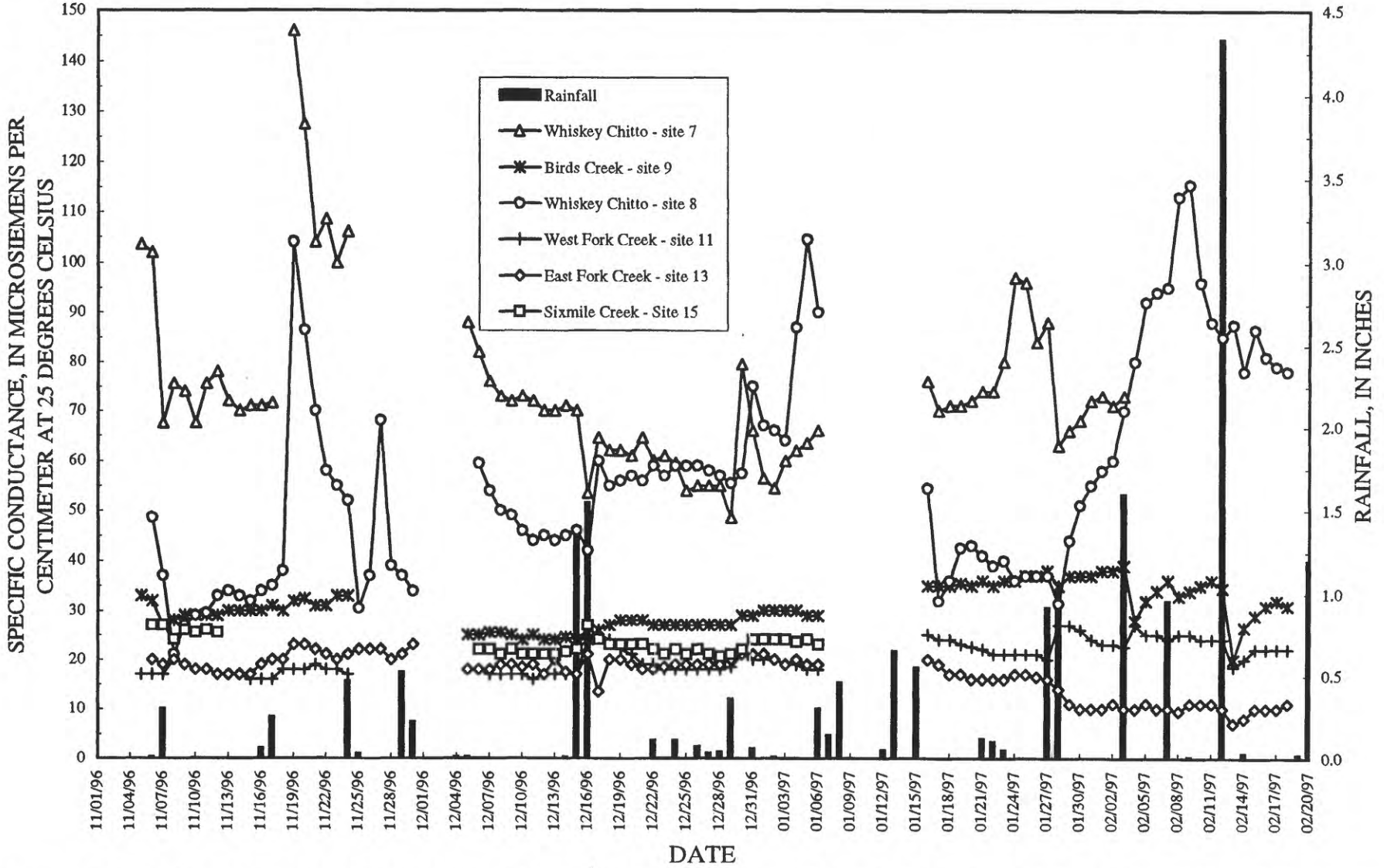


Figure 5. Specific conductance values and rainfall, November 5, 1996 - February 18, 1997, for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

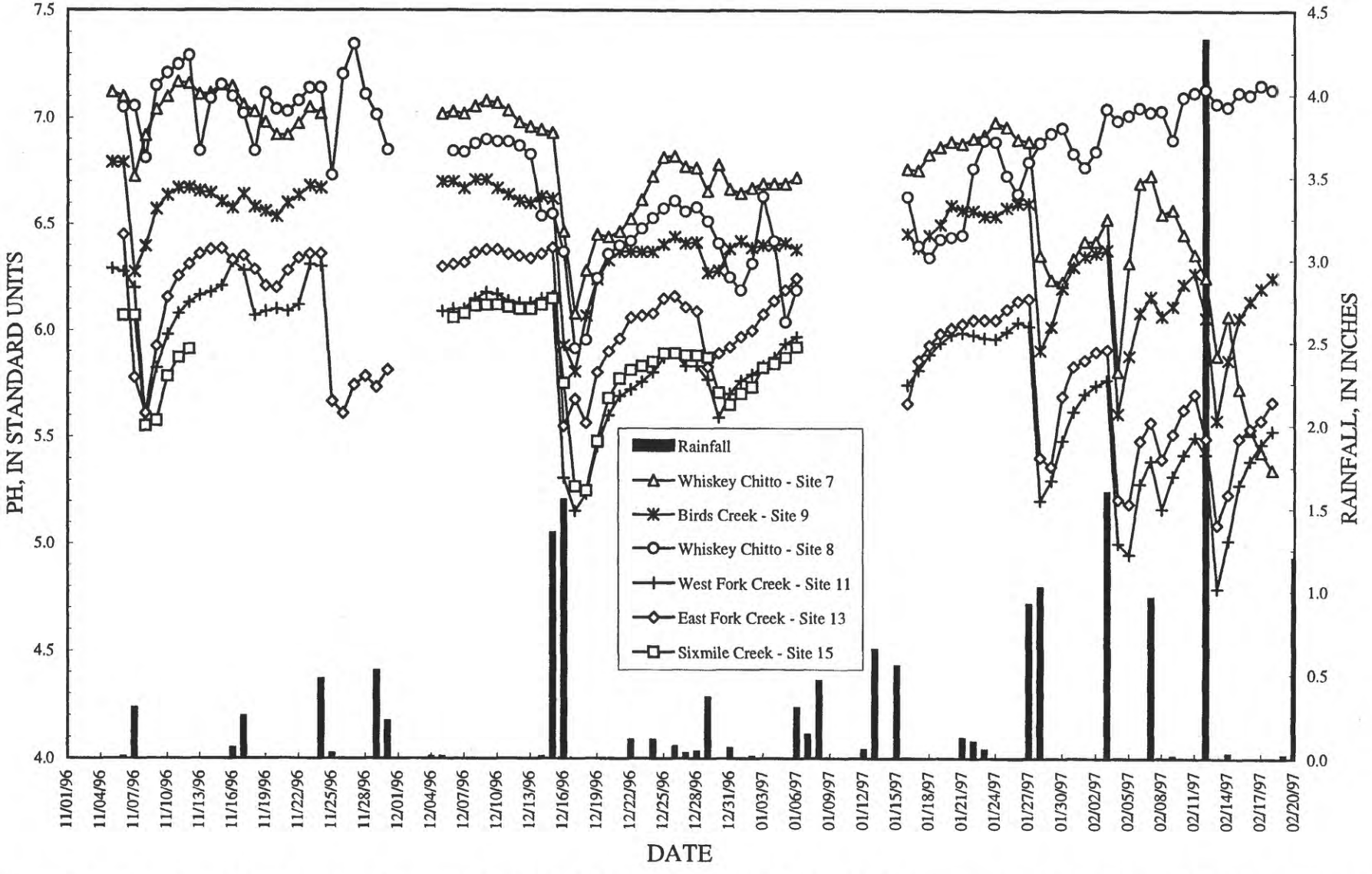


Figure 6. Values for pH and rainfall, November 5, 1996 - February 18, 1997, for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

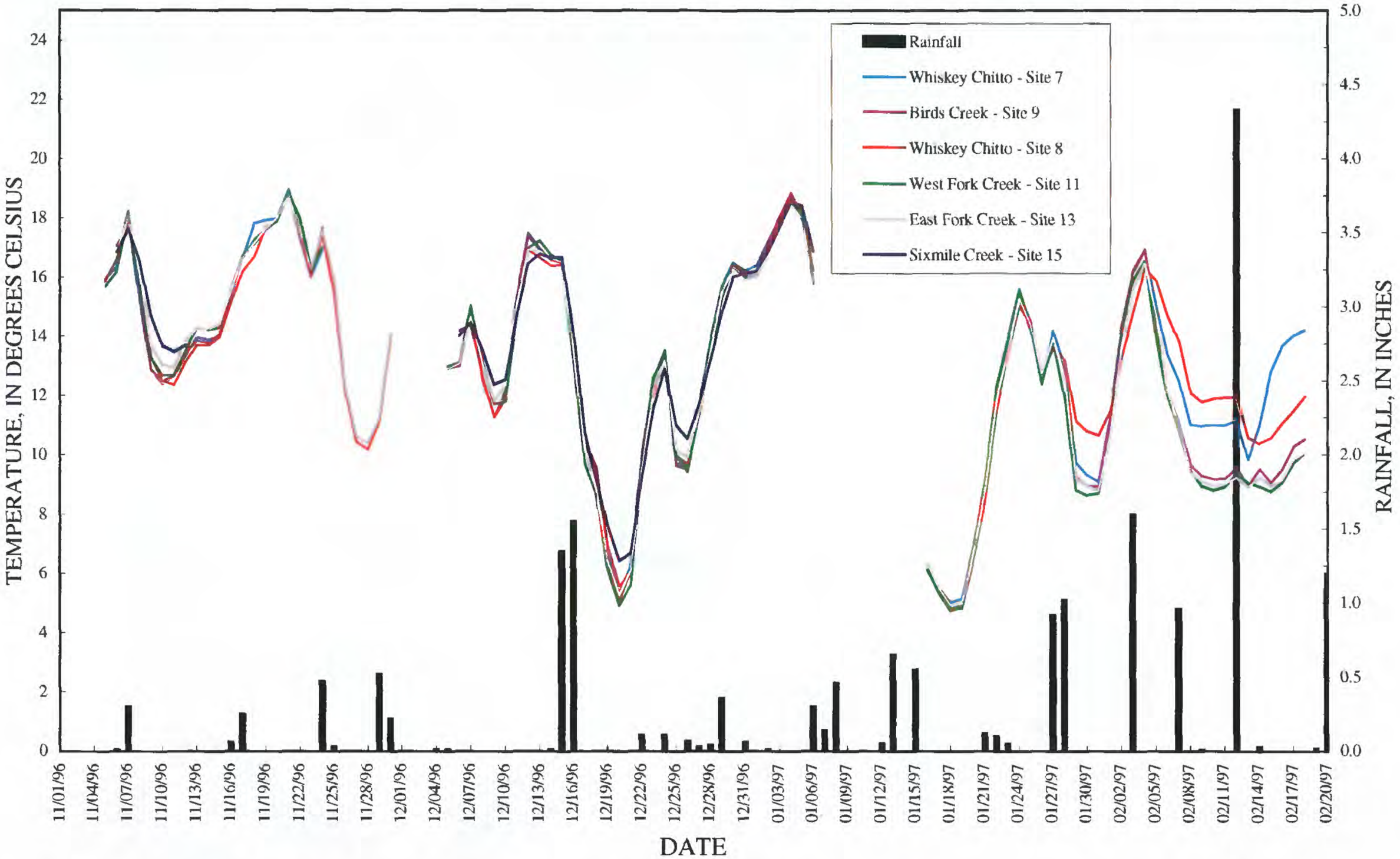


Figure 7. Temperatures and rainfall, November 5, 1996 - February 18, 1997, for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

to a USGS laboratory for analysis. Samples were analyzed for calcium and magnesium, with additional cations and anions measured every 10th sample. Approximately 10% of the samples analyzed were field duplicates or deionized water blanks (Horowitz and others, 1994).

Daily calcium and magnesium data for the six sites are presented in tables 11 and 12 (at back). Calcium values ranged from less than 1 mg/L in Sixmile Creek to greater than 15 mg/L in Whiskey Chitto Creek. Magnesium values ranged from 1.3 mg/L in Whiskey Chitto Creek to less than 0.6 mg/L in Sixmile Creek. Graphical representations of calcium and magnesium data are presented in figures 8 and 9, respectively. Major inorganic ion data for the six sites are presented in table 13 (at back). Again, the Whiskey Chitto system showed higher ion concentrations than Sixmile Creek. Piper diagrams, based on chemical ion percentages, are presented to indicate water type (figs. 10 and 11) (Hem, 1985). Alkalinity was used to calculate bicarbonate concentrations. Values for pH ranged from 4.95 to 7.35; therefore, only the bicarbonate species was considered as a contributor to alkalinity (Hem, 1985).

Areal Stream Coverage

Water-quality data were collected at 14 sampling sites in the LUA from December 5 through 11, 1996 (fig. 2). Water-quality sampling at the sites included collecting bed material, physical properties, chemical constituents, and biological data. Bed material analyses included sediment grain-sizes, explosive compounds, and trace metal concentrations. Chemical constituents included nutrients and major inorganic ion analyses. Biological data included bacteria and periphyton analyses. Data for the sites are presented in the following discussions.

Bed-material samples were collected using a stainless-steel petite ponar. Standing downstream of the ponar, the sampler was lowered onto the creek bed and the collected material was placed in a clean plastic pan. This procedure was repeated until enough material was collected for sediment grain-sizes, explosives, and trace metals analyses. The material was mixed thoroughly with a plastic spoon and scooped into appropriate containers. Chemical constituents analyses were performed by a USGS laboratory using methods described by Matthes (1992). Explosives were analyzed using U.S. Environmental Protection Agency (USEPA) method 8338.

Bed material samples were collected from the center transect of sites 1 through 14. Results of the grain-size sediment analyses are presented in table 14 (at back). Grain-size sediment analyses indicate the bed material in the creeks sampled in the LUA is predominantly sand and gravel. Trace metal analyses and explosives analyses for bed-material samples collected at sites 1 through 14 are presented in tables 15 and 16 (at back). Concentrations of all explosives analyzed were below detection limits. Some trace metal concentrations were above detection limits but below background levels for the region.

Chemical constituents were determined from water samples collected from creeks by dipping samples, because the creeks were shallow at most of the sampling sites. Samples were collected by standing downstream and dipping the appropriate bottle just below the surface of the water. The mouth of the bottle was pointed upstream, as near the center of flow as possible without disturbing the bottom sediments. The samples were analyzed for major inorganic ions and nutrients by the USGS using methods described by Fishman and Friedman (1989).

Water samples were collected from the center transect of sites 1 through 14. Water-quality analyses are presented in table 17 (at back). Cation and anion balances and percent differences for the 14 sampling sites are listed in table 18 (at back). Cation and anion balances are used as a laboratory quality-control check.

Water samples were collected from the center transect of sites 1 through 14 for bacteria analyses. Water samples for analysis of fecal coliform and fecal streptococcus bacteria were collected by dipping, using a sterilized glass bottle. Bacteria samples were analyzed in the field using the multiple plate method (Britton and Greeson, 1989). Bacteria analyses by the USGS are presented in table 19 (at back).

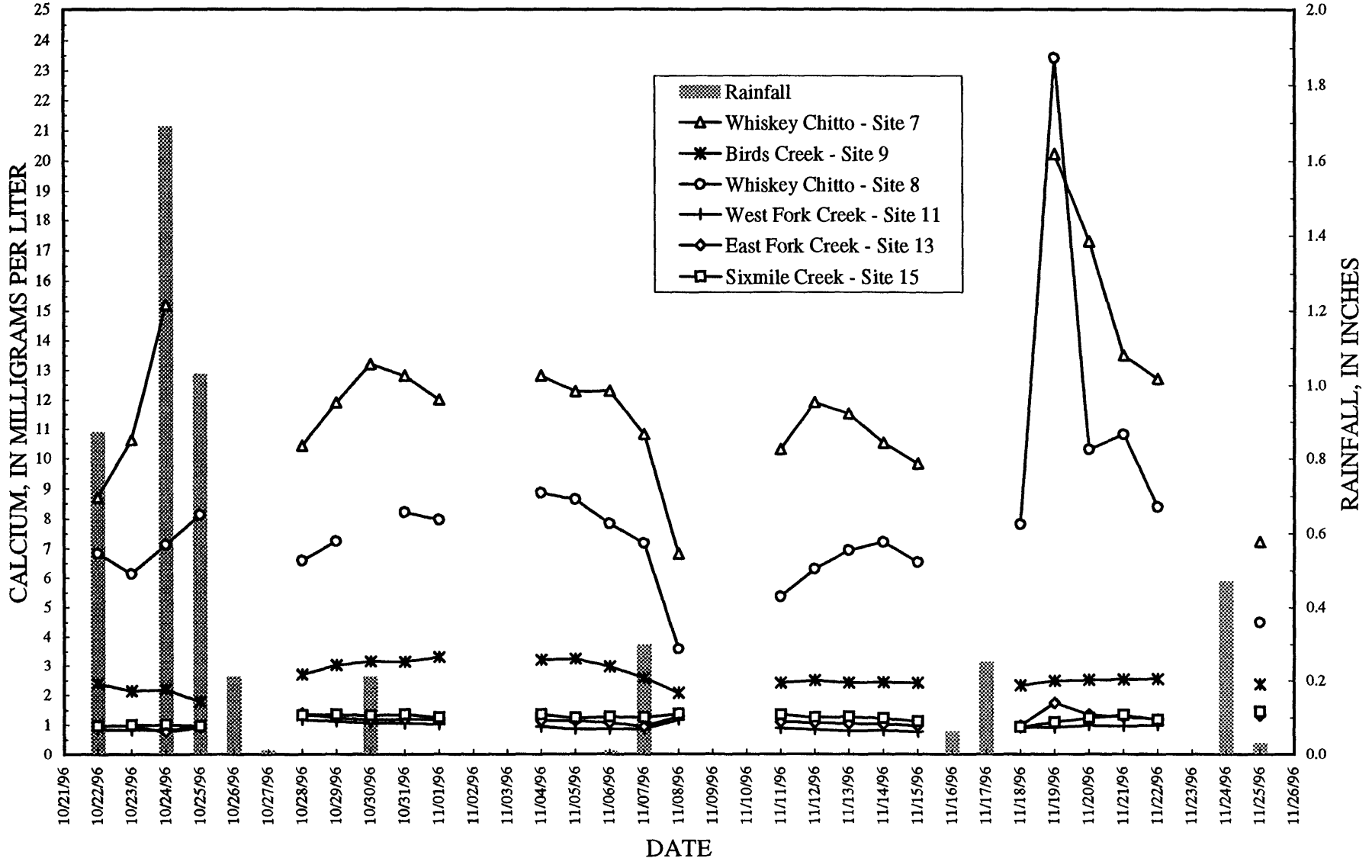


Figure 8. Calcium data for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

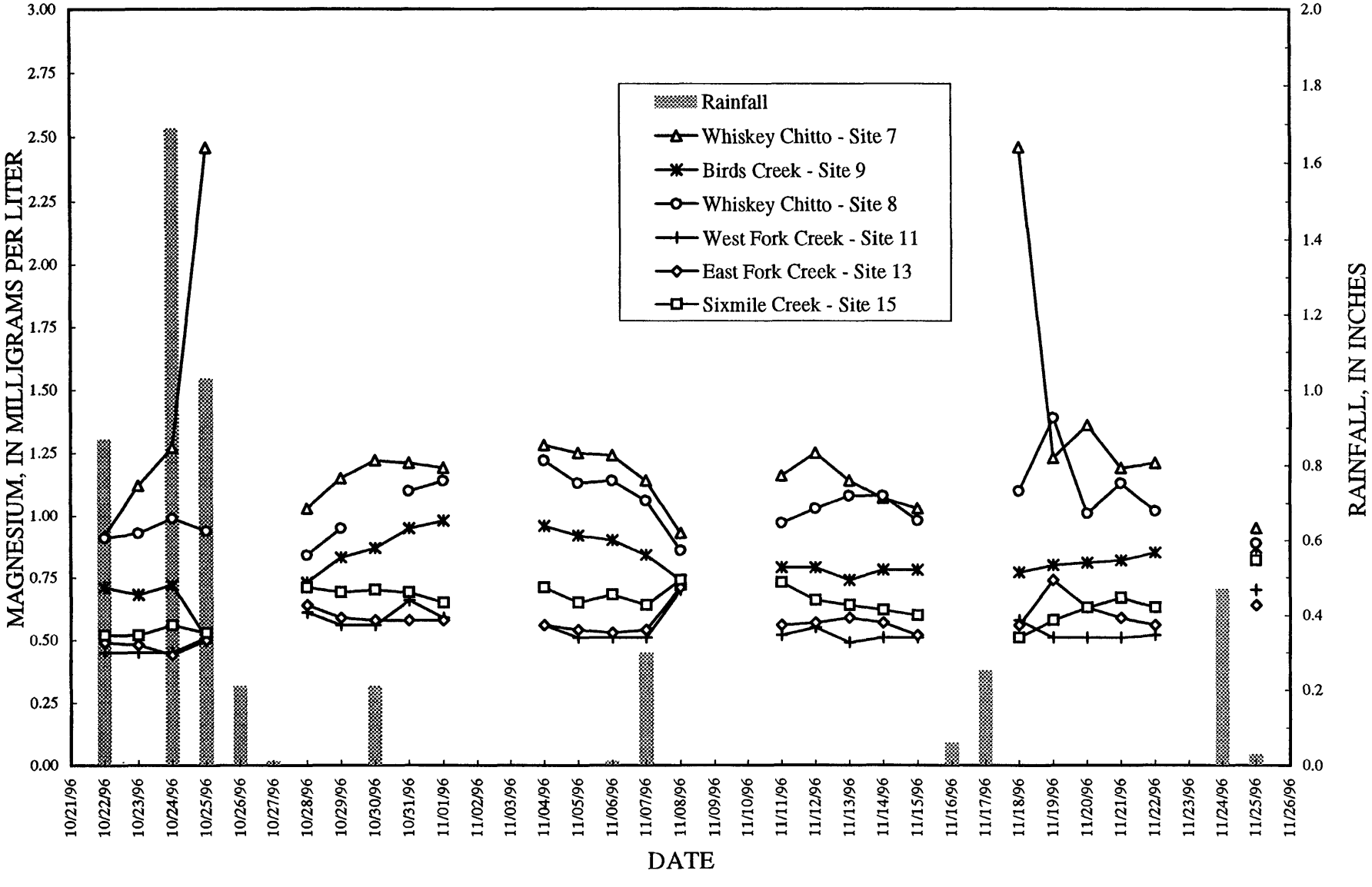
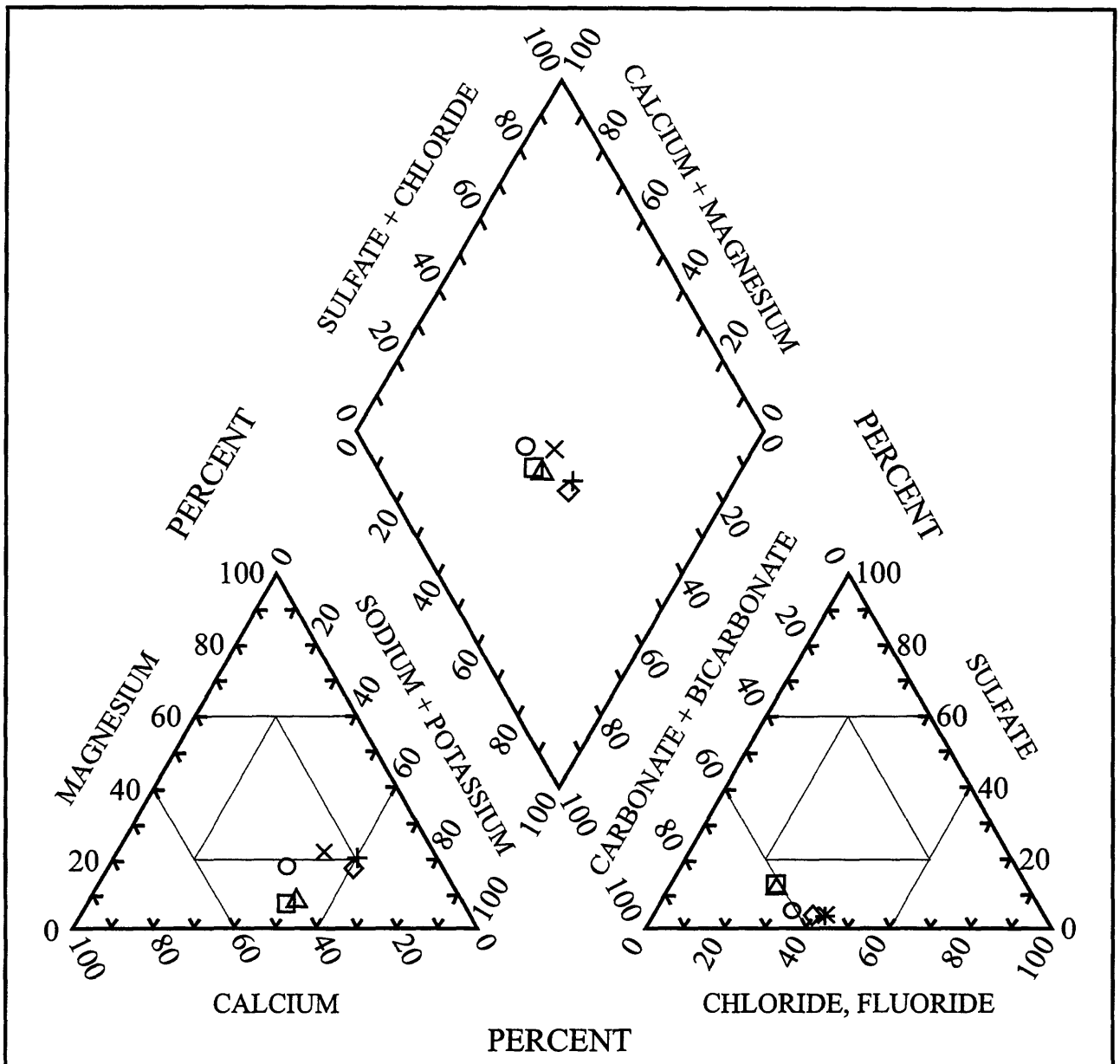


Figure 9. Magnesium data for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

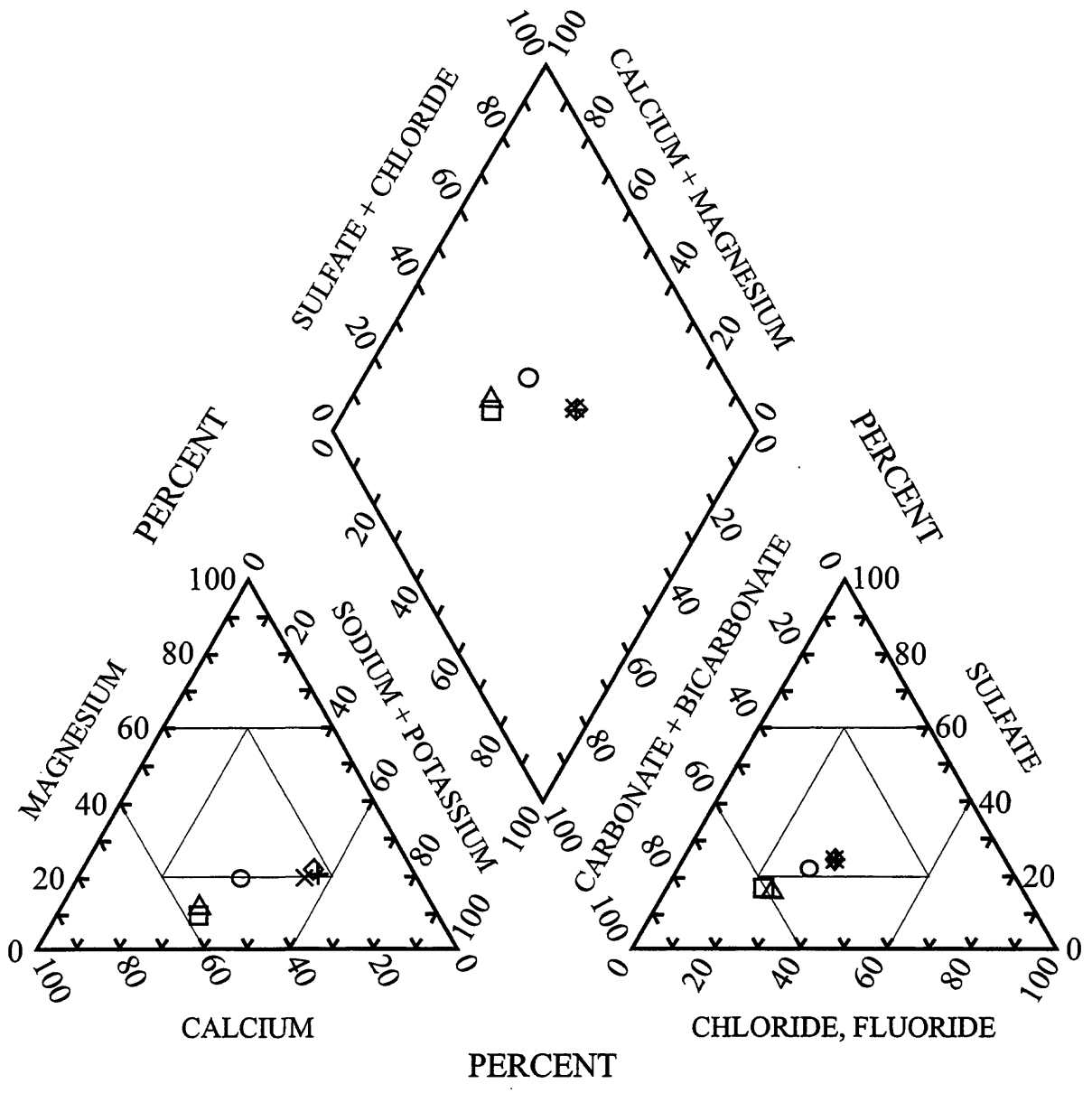


EXPLANATION

- ○ - Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road (site 9)
- □ - Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road (site 6)
- △ - Whiskey Chitto Creek ~200 ft south of bridge on Ray Gill Road (site 7)
- × - East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road (site 13)
- \+ - West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road (site 11)
- ◇ - [1]Sixmile Creek ~300 ft north of bridge on Louisiana Highway 458 near Pitkin

[1]This site is south of the Limited Use Area, Kisatchie National Forest, Louisiana

Figure 10. Piper diagram plotting major ion data for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, October 22, 1996.



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[1]This site is south of the Limited Use Area, Kisatchie National Forest, Louisiana

Figure 11. Piper diagram plotting major ion data for the daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, November 5, 1996.

DESCRIPTION OF BIOTA

Description of biota includes information and data on stream and terrestrial biota within the LUA. Stream biota include periphyton and freshwater mussel data; terrestrial biota include identifications of plant species, vegetation type, and rare and endangered species.

Stream

Stream biota include periphyton and freshwater mussel data collected at each stream reach. Periphyton communities and mussel populations are sensitive to a variety of environmental factors, such as temperature, oxygen, pH, hardness, acidity, spates (flash floods), and food availability, and thus are good indicators of water quality (Hynes, 1970).

Periphyton samples were collected using a stainless steel knife blade to scrape a 2.5 cm (centimeter) by 5.0 cm area from submerged woody debris. This material was placed in a 250 mL (milliliter) plastic bottle, filled with stream water, treated with 12.5 ml of formaldehyde, and shipped to a USGS laboratory for further analyses using the Utermohl (1958) method for the inverted microscope. The periphyton sample was diluted to 1 L (liter) and thoroughly mixed. Next, a 10-ml aliquot was transferred to a plankton sedimentation chamber (known area) and allowed to settle for approximately 24 hours. The periphyton sample was then placed on an inverted microscope (a Wild M40, equipped with a Plan-APO oil immersion objective -- 1000X). The dispersed algal cells seen upon examining one transect (one Whipple disc wide) were enumerated across the entire chamber; or simply, all algal cells were counted in approximately 290 fields. For colonies or filaments with large numbers of cells, the cells were counted in the entire colony. If cell counts within colonies were too large, cells were counted in a known area of the Whipple grid, then multiplied by the number of grids occupied by the colony.

Algal cell identifications for periphyton analyses of samples collected from 14 sampling sites in the LUA are listed in Appendix A, table A1 (F. Bryan, written commun., 1997). Raw counts of algal cells reflect the relative abundance of each taxon in the periphyton communities at each stream site. Cell counts can be expanded to numbers per cm^2 of surface area of the substrate that was scraped at each site. Periphyton counts for replicate samples collected from sampling sites in the LUA are listed in Appendix A, table 2. Replicate sample counts do not match original counts: however, replicate sample counts provide a good measure to confirm major taxa in biological communities (F. Bryan, written commun., 1997). Periphyton algal community samples collected at the sites within the LUA are representative of communities found in mineral-poor waters, low in alkaline earths and in buffering capacity, as described in other localities in the United States.

Identification and population counts of freshwater mussels were performed by Louisiana State University at Eunice, Louisiana (M.F. Vidrine, written commun., 1997). The sampling consisted of nondestructive, visual identification and examination of each mussel from the stream bottom for a distance of 50 feet upstream and 50 feet downstream of the center transect of each site. In addition, notes were compiled based on habitat preferences of the individual freshwater mussel species.

Freshwater mussel data are presented in Appendix B (M.F. Vidrine, written commun., 1997). Freshwater mussel sampling sites correspond to the center transect of the 14 sampling sites. A list of freshwater mussels located at each sampling site is presented in Appendix B, table B2. A list of mussels, exotic clams, and snails of Louisiana is presented in Appendix B, table B1. A list of freshwater mussels from headwater creeks originating from Fort Polk, Peason Ridge, and the Kisatchie National Forest is presented in Appendix B, table B3. An additional list of other species that occur in headwater creek and larger creeks of the Kisatchie National Forest is presented in Appendix B, table B4. A list of the distribution of mussels in Louisiana streams in regards to provinces as they commonly occur in headwater streams is presented in Appendix B, table B5. Series of tables were extracted from Vidrine (1996c) referring to mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainage downstream from the LUA and are presented in Appendix B, table B6. Freshwater mussel populations are lowest in the headwaters of the Sixmile Creek system.

Terrestrial

Descriptions of terrestrial biota such as plant species, vegetation type, and rare and endangered species are presented in Appendix C (C.M. Allen, written commun., 1997). Vegetation descriptions of riparian zones and adjoining upland pine forests are described to species level. Vegetation types were categorized as bog, baygall, savannah, sandy, riparian, mixed and longleaf, disturbed areas, swamp, and water habitats. Bog locations selected for vegetation descriptions are shown in figure 2. Plant species and common names are presented in Appendix C, table C1. Plant species by vegetation types are presented in Appendix C, table C2. A list of rare and endangered species with State and Global Ranking from the Kisatchie National Forest Limited Use and Vicinity at either Fort Polk or Vernon Parish is presented in Appendix C, table C3. A list of plant species reported from only riparian habitats along the scenic streams in the LUA is presented in Appendix C, table C4. Descriptions of terrestrial biota indicate that the LUA has a high level of diversity of plants and animals (C.M. Allen, written commun., 1997).

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Stream Characterization Forms

Figures 12-25

Explanation (adapted from Meador and others, 1993)

[mm, millimeters; m, meters; cm, centimeters; sq km, square kilometers; sq mi, square miles; km, kilometers; mi, miles; ft, feet; ft/sec, feet per second; in/yr, inches per year; ~, approximately]

ACPN	Atchafalaya/Pontchartrain study unit (nearest National Quality Water Assessment, or NAQWA, code to study area)
F.S.	Forest Service
Qth	Quaternary deposits, Pleistocene: High terraces
Mfb	Miocene deposits: Fleming Formation, Blounts Creek Member
LB	left bank
RB	right bank
CL	clay, generally less than 0.004; determined in field by feel and taste
SI	silt, generally fine material 0.004 - 0.06 mm in diameter; determined in field by feel and taste
SA	sand, gritty material 0.06 - 2.0 mm in diameter; determined in field by feel and ruler
SA/GR	mostly sand, with some gravel
SA/SI	mostly sand, with some silt
SI/SA	mostly silt, with some sand
GR	gravel, coarse material 2 - 64 mm in diameter; determined in field with ruler
WD	woody debris and snags
OV	overhanging vegetation (terrestrial)
UB	undercut banks
ME	macrophytes-emergent (rooted to the bottom with parts extending above surface)
MA	macrophytes-submerged (grow under water, and depend on water column for support)
CC	bank description, concave upwards
CV	bank description, convex upwards
LN	bank description, linear bank
SCB	slightly cut bank scalloping
MCB	moderately cut bank scalloping
hd[1]	hardwood trees, at least 2 m high and diameter at breast height of at least 3 cm
p[1]	pine trees, at least 2 m high and diameter at breast height of at least 3 cm
sh[1]	shrubs

[1]The bank's woody vegetation is listed in the reach characterization of the stream characterization form in order of relative abundance.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Bundick Creek ~400 ft south of bridge on Forest Service Road 422.
4. Station identification	Downstream order number: none **Site 1**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305934 Longitude: 931309 ± 25ft
7. Drainage area for Bundick Creek north of bridge on F.S. road 422 (map scale 1:50000)	46.4 sq km 17.9 sq mi 11464 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	2.2 11. Stream length 12.2 km
12. Basin relief above site 1 (north)	105m - 65m = 40m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Bundick Creek ~400 ft south of bridge on Forest Service Road 422.
4. Station identification	Downstream order number: none **Site 1**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305934 Longitude: 931309 ± 25ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 8 W
11. Section	NE 1/4, SE 1/4, section 7
12. Quadrangle	HURRICANE BRANCH QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 1 is ~12.2 km.
15. Elevation of reference location	217ft or 66m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0033
18. Channel sinuosity (1:50000)	1.7
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 12. Stream characterization form for site 1 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Wed, March 12, 1997		
3. Station name	Bundick Creek ~400 ft south of bridge on Forest Service Road 422.				
4. Station identification	Downstream order number:	none	**Site 1**		
5. Investigators	R. B. Fendick/R. W. Tollett				
6. Reference location (bridge)	Latitude:	305934	Longitude:	931309	± 25ft
	Weather Conditions:	light rain	Time:	0730	
	Stage:	stable			
7. Reference location description	middle bridge of three on Forest Service Road 422				
8. Upstream reach boundary (T1) nearest to reference location	about 325ft downstream from the reference location				
9. Channel width at center transect	15ft x 10 (20 recommended) = reach length				
10. Geomorphic channel units	none	11. Reach length:	150ft		
12. Stream type	meandering/slightly cutting banks				

Transects

	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	75	0	75
14. Channel width (ft)	19	14	16
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 — Latitude 305930 Longitude 931307 ± 40ft

Distances from left bank edge.	LB	3.5	7.0	10.5	RB
17. Depth (feet)	0	2.8	2.9	1.0	0
18. Velocity (ft/s)	0	0.952	0.864	0.750	0
19. Bed substrate	SA	SA	SA	SA	SA
20. Embeddedness	0 (none)	0 (none)	0 (none)	0 (none)	0 (none)

Transects

	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	20		10		<5	
22. Aspect (azimuth - 360 degrees)	150		190		165	
23. Habitat features	WD, OV, UB, ME		WD, UB, MA		WD, OV, UB	
24. Bar/shelf/island	none		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	115	105	105	145	155	105
26. Bank height (ft)	5.5	5.5	6.0	5.5	6.0	5.5
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	CC	CC	CC	CV	LN	CC
29. Bank erosion	SCB	SCB	MCB	none	none	MCB
30. Bank substrate	SA/SI	SA/SI	SA/SI	SA/SI	SA/SI	SA/SI
31. Woody vegetation	hd/sh	hd/sh	sh/hd	hd/sh	hd	sh/hd

32. Photodocumentation (center transect)	none
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	abundance of cypress trees/bamboo common on banks
	secchi disk (light penetration) = 2.8 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 12. Stream characterization form for site 1 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

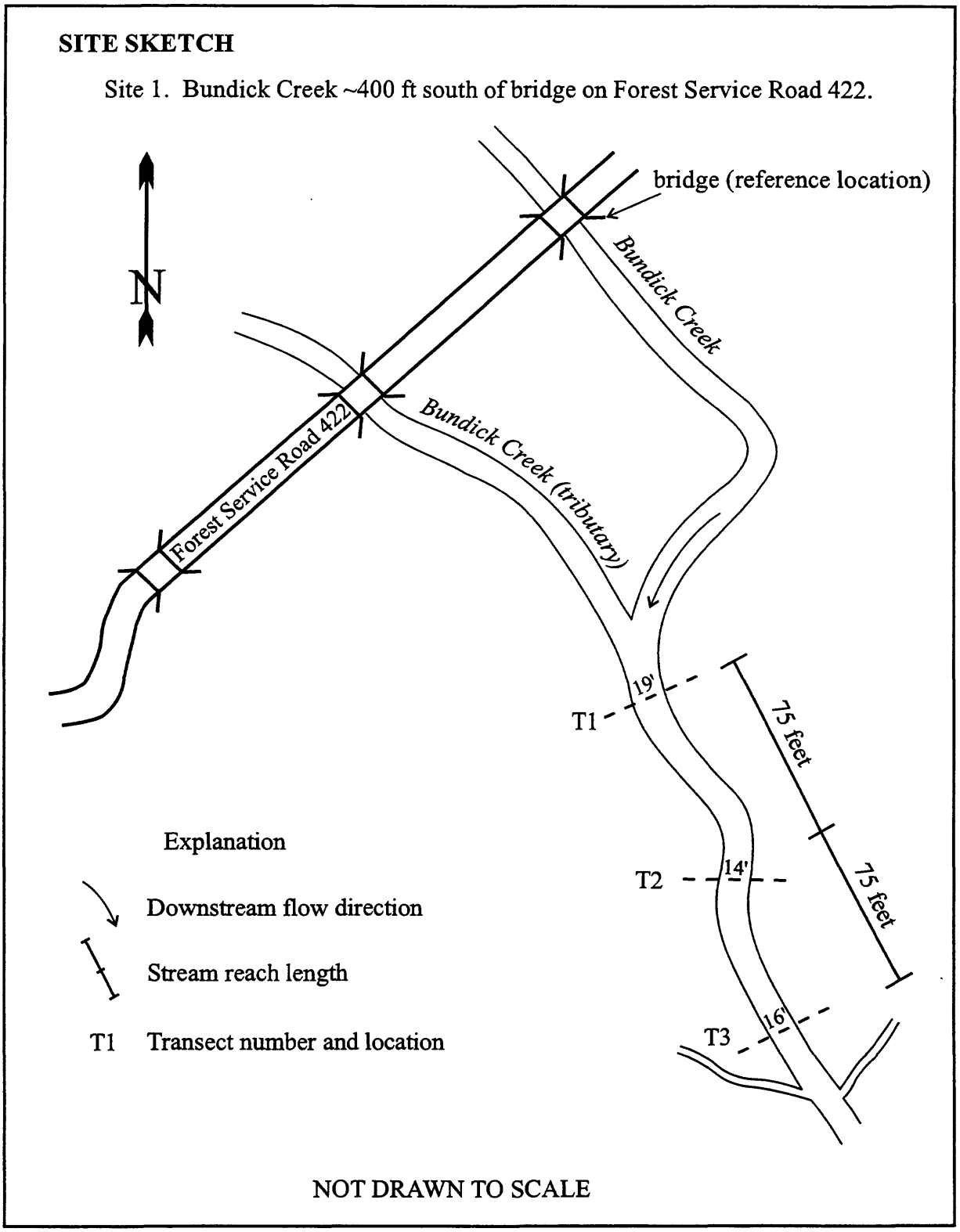


Figure 12. Stream characterization form for site 1 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Bundick Creek ~200 ft north of bridge on Forest Service Road 410.
4. Station identification	Downstream order number: none **Site 2**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305630 Longitude: 931208 ± 20ft
7. Drainage area for Bundick Creek north of bridge on F.S. road 410 (map scale 1:50000)	77.3 sq km 29.8 sq mi 19094 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	3.0 11. Stream length 20.1 km
12. Basin relief above site 2 (north)	105m - 55m = 50m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Bundick Creek ~200 ft north of bridge on Forest Service Road 410.
4. Station identification	Downstream order number: none **Site 2**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305630 Longitude: 931208 ± 20ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 8 W
11. Section	SE 1/4, SE 1/4, section 29
12. Quadrangle	HURRICANE BRANCH QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 2 is ~20.0 km.
15. Elevation of reference location	178ft or 54m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0025
18. Channel sinuosity (1:50000)	1.6
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 13. Stream characterization form for site 2 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD		2. Date:	Tues, March 11, 1997		
3. Station name	Bundick Creek ~200 ft north of bridge on Forest Service Road 410.					
4. Station identification	Downstream order number:		none		**Site 2**	
5. Investigators	R. B. Fendick/R. W. Tollett					
6. Reference location (bridge)	Latitude:	305630	Longitude:	931208	± 20ft	
	Weather Conditions:	cloudy	Time:	1500		
	Stage:	1/2 bank full, cresting				
7. Reference location description	concrete bridge on partial blacktop road					
8. Downstream reach boundary (T3) nearest to reference location	about 100ft upstream from the reference location					
9. Channel width at center transect	15ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none		11. Reach length:	150ft		
12. Stream type	meandering/actively cutting banks					

	Transects		
	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	75	0	75
14. Channel width (ft)	18	15	17
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 Latitude 305631 Longitude 931205 ± 41ft

Distances from left bank edge.	LB	3.75	7.5	11.25	RB
17. Depth (feet)	0	2.3	2.2	2.4	0
18. Velocity (ft/s)	0	1.419	1.186	1.359	0
19. Bed substrate	SA	SA	coarse SA	SA	SA
20. Embeddedness	0 (none)	0 (none)	0 (none)	0 (none)	0 (none)

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	75		0		15	
22. Aspect (azimuth - 360 degrees)	180		195		210	
23. Habitat features	WD, OV		WD		WD	
24. Bar/shelf/island	LB - bar		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	160	115	120	140	150	120
26. Bank height (ft)	6.0	6.5	7.0	7.0	6.0	5.0
27. Bank vegetation stability	2	2	3	2	3	3
28. Bank shape	CC	CV	CV	LN	CV	CC
29. Bank erosion	none	MCB	MCB	none	none	MCB
30. Bank substrate	SA/SI	SA/SI	SA	SA	SA	SA/SI
31. Woody vegetation	p/hd/grass	p/hd/sh	hd/grass	hd	hd/sh	sh/hd

32. Photodocumentation (center transect)	none
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	abundance of cypress trees and cypress knees along banks
	secchi disk (light penetration) = 2.7 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 13. Stream characterization form for site 2 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

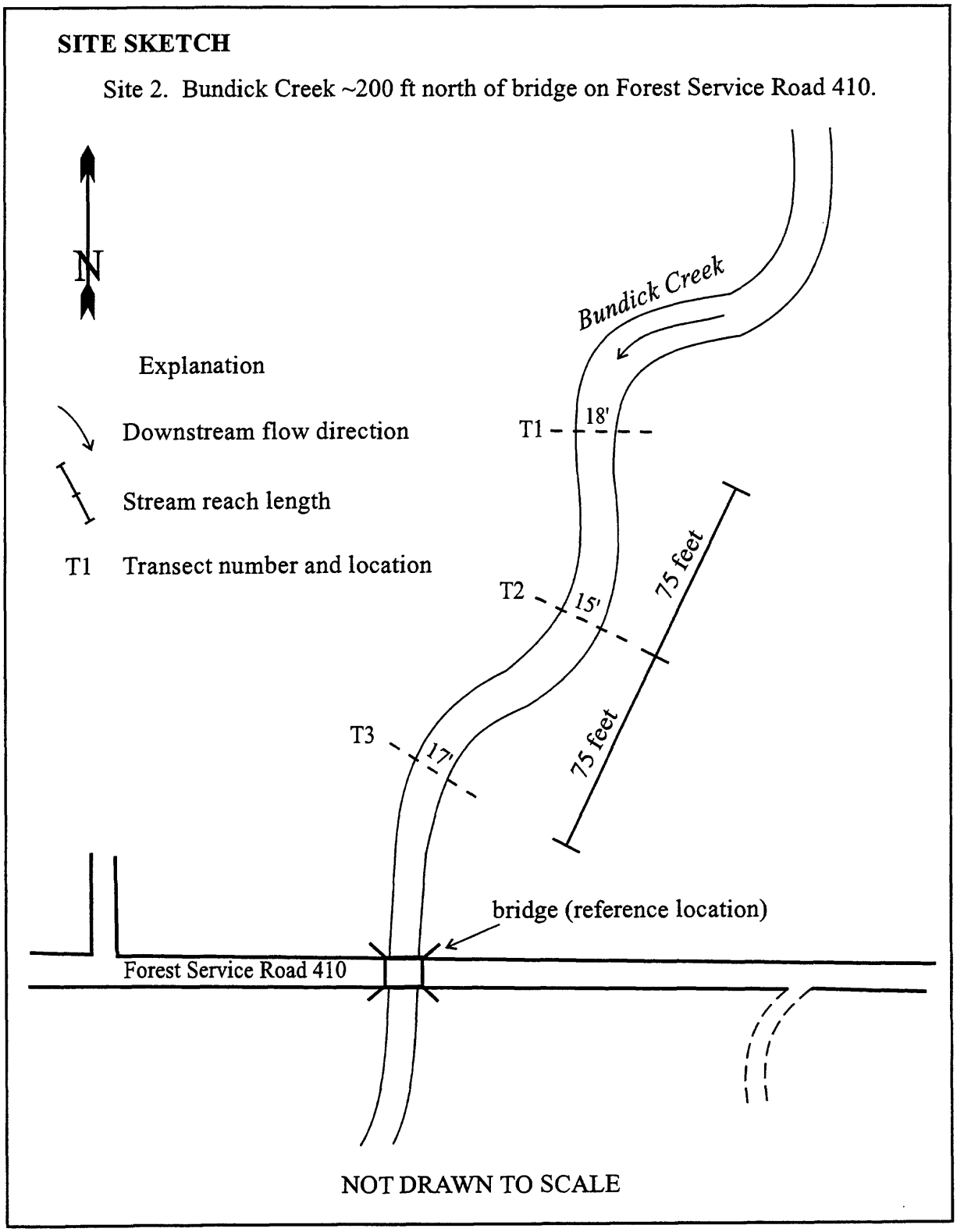


Figure 13. Stream characterization form for site 2 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Drakes Creek ~200 ft north of the bridge on Forest Service Road 421.
4. Station identification	Downstream order number: none **Site 3**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 310013 Longitude: 930859 ± 25ft
7. Drainage area for Drakes Creek north of bridge on F.S. road 421 (map scale 1:50000)	37.9 sq km 14.6 sq mi 9365 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	3.1 11. Stream length 11.0 km
12. Basin relief above site 3 (north)	105m - 60m = 45m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Drakes Creek ~200 ft north of the bridge on Forest Service Road 421.
4. Station identification	Downstream order number: none **Site 3**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 310013 Longitude: 930859 ± 25ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 8 W
11. Section	SW 1/4, SW 1/4, section 1
12. Quadrangle	FORT POLK QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 3 is ~11.0 km.
15. Elevation of reference location	195ft or 59m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0041
18. Channel sinuosity (1:50000)	1.6
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 14. Stream characterization form for site 3 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Wed, March 12, 1997		
3. Station name	Drakes Creek ~200 ft north of the bridge on Forest Service Road 421.				
4. Station identification	Downstream order number:	none	**Site 3**		
5. Investigators	R. B. Fendick/R. W. Tollett				
6. Reference location (bridge)	Latitude:	310013	Longitude:	930859 ± 25ft	
	Weather Conditions:	light rain	Time:	1230	
	Stage:	1/3 bank full, stable			
7. Reference location description	concrete bridge on unimproved road, F.S. Road 421				
8. Downstream reach boundary (T3) nearest to reference location	about 100ft upstream from the reference location				
9. Channel width at center transect	20ft x 10 (20 recommended) = reach length				
10. Geomorphic channel units	none	11. Reach length:	200ft		
12. Stream type	meandering/actively cutting banks				

	Transects		
	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	100	0	100
14. Channel width (ft)	15	20	21
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 — Latitude 310013 Longitude 930901 ± 21ft

Distances from left bank edge.	LB	5.0	10.0	15.0	RB
17. Depth (feet)	0	1.2	0.8	0.9	0
18. Velocity (ft/s)	0	1.068	0.979	0.887	0
19. Bed substrate	SA	SA	SA	SA	SA
20. Embeddedness	0 (none)	0 (none)	0 (none)	0 (none)	0 (none)

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	0		0		0	
22. Aspect (azimuth - 360 degrees)	115		100		110	
23. Habitat features	OV, WD, UB, ME		OV, WD, UB		OV, WD, UB	
24. Bar/shelf/island	none		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	155	90	100	115	110	135
26. Bank height (ft)	8.0	8.5	5.5	5.5	6.0	6.5
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	LN	LN	CV	LN	CC	CC
29. Bank erosion	none	MCB	SCB	MCB	MCB	none
30. Bank substrate	SI/CL/SA	SI/SA	SI/CL/SA	SI/CL/SA	SI/CL/SA	SI/CL/SA
31. Woody vegetation	hd/sh	hd/sh/p	hd/p/sh	hd/p/sh	hd/sh	hd/sh

32. Photodocumentation (center transect)	none
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	numerous mussels found on bottom of stream at all 3 transects
	secchi disk (light penetration) = > 2.0 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 14. Stream characterization form for site 3 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

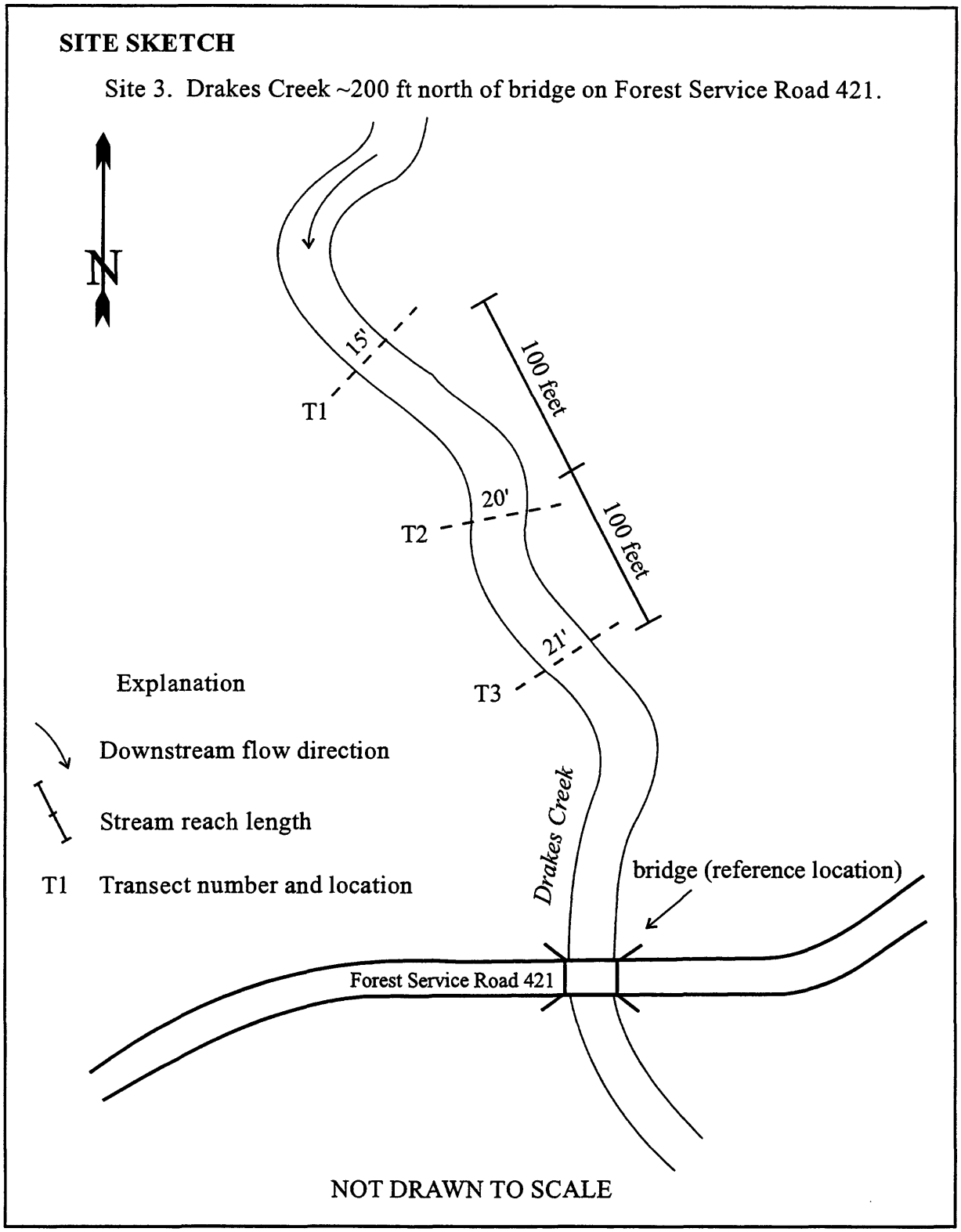


Figure 14. Stream characterization form for site 3 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Drakes Creek ~400 ft north of the bridge on Louisiana Highway 10.
4. Station identification	Downstream order number: none **Site 4**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305748 Longitude: 930818 ± 39ft
7. Drainage area for Drakes Creek north of bridge on LA hwy 10 (map scale 1:50000)	55.5 sq km 21.4 sq mi 13707 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	4.3 11. Stream length 16.0 km
12. Basin relief above site 4 (north)	105m - 55m = 50m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Drakes Creek ~400 ft north of the bridge on Louisiana Highway 10.
4. Station identification	Downstream order number: none **Site 4**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305748 Longitude: 930818 ± 39ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 8 W
11. Section	SW 1/4, NE 1/4, section 24
12. Quadrangle	HURRICANE BRANCH QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 4 is ~16.0 km.
15. Elevation of reference location	180ft or 55m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0031
18. Channel sinuosity (1:50000)	1.5
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 15. Stream characterization form for site 4 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Tues, March 11, 1997			
3. Station name	Drakes Creek ~400 ft north of the bridge on Louisiana Highway 10.					
4. Station identification	Downstream order number:	none	**Site 4**			
5. Investigators	R. B. Fendick/R. W. Tollett					
6. Reference location (bridge)	Latitude:	305748	Longitude:	930818 ± 39ft		
	Weather Conditions:	cloudy	Time:	1330		
	Stage:	1/3 bank full, stable				
7. Reference location description	concrete bridge on LA. Highway 10					
8. Downstream reach boundary (T3) nearest to reference location	about 300ft upstream from the reference location					
9. Channel width at center transect	20ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none	11. Reach length:	200ft			
12. Stream type	meandering/actively cutting banks					

Transects

	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	100	0	100
14. Channel width (ft)	23	18	22
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 — Latitude 305752 Longitude 930817 ± 30ft

Distances from left bank edge.	LB	4.5	9.0	13.5	RB
17. Depth (feet)	0	2.0	1.8	1.5	0
18. Velocity (ft/s)	0	0.835	1.305	1.099	0
19. Bed substrate	SA	SA	SA	SA	SA
20. Embeddedness	0 (none)	0 (none)	0 (none)	0 (none)	0 (none)

Transects

	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	65		35		30	
22. Aspect (azimuth - 360 degrees)	140		170		270	
23. Habitat features	OV, UB, ME		OV, WD		OV, WD, UB	
24. Bar/shelf/island	LB - point bar		none		RB - point bar	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	135	140	140	145	120	145
26. Bank height (ft)	6.0	7.5	6.0	6.5	7.0	6.0
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	CV	CC	LN	LN	CV	CC
29. Bank erosion	SCB	SCB	SCB	none	SCB	none
30. Bank substrate	SA/SI	SA/SI	SA/SI	SA/SI	SA/SI	SA/SI
31. Woody vegetation	hd/sh/p	hd/sh/p	hd/sh/p	hd/sh/p	hd/p/sh	hd/sh

32. Photodocumentation (center transect)	none
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	bamboo on banks of center transects
	secchi disk (light penetration) = 2.4 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 15. Stream characterization form for site 4 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 4. Drakes Creek ~300 ft north of bridge on Louisiana Highway 10.

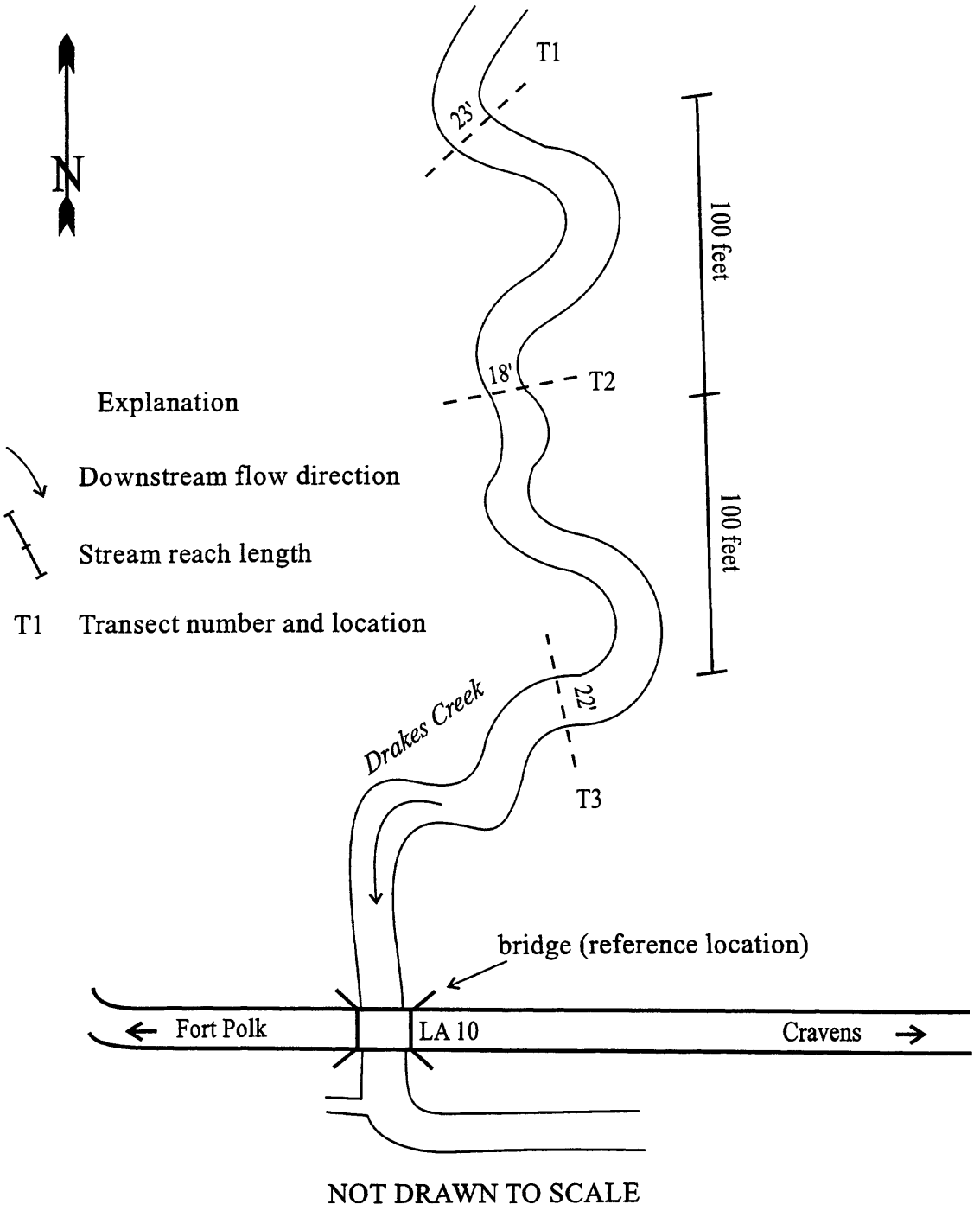


Figure 15. Stream characterization form for site 4 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.
4. Station identification	Downstream order number: none **Site 5**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305643 Longitude: 930642 ± 22ft
7. Drainage area for Whiskey Chitto Creek north of the bridge on Lookout Road (map scale 1:50000)	84.7 sq km 32.7 sq mi 20935 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	3.8 11. Stream length 19.7 km
12. Basin relief above site 5 (north)	105m - 50m = 55m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.
4. Station identification	Downstream order number: none **Site 5**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305643 Longitude: 930642 ± 22ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 7 W
11. Section	NE 1/4, SW 1/4, section 29
12. Quadrangle	SUGRUE QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 5 is ~19.7 km.
15. Elevation of reference location	168ft or 51m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0028
18. Channel sinuosity (1:50000)	1.5
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 16. Stream characterization form for site 5 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD		2. Date:	Tues, March 11, 1997		
3. Station name	Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.					
4. Station identification	Downstream order number:	none		**Site 5**		
5. Investigators	R. B. Fendick/R. W. Tollett					
6. Reference location (bridge)	Latitude:	305643	Longitude:	930642 ± 22ft		
	Weather Conditions:	cloudy	Time:	1200		
	Stage:	1/2 bank full, rising				
7. Reference location description	concrete bridge off unimproved road, F.S. Road 402					
8. Upstream reach boundary (T1) nearest to reference location	about 100ft downstream from the reference location					
9. Channel width at center transect	15ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none		11. Reach length:	150ft		
12. Stream type	meandering/actively cutting banks					

	Transects		
	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	75	0	75
14. Channel width (ft)	14	15	15
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 Latitude 305643 Longitude 930641 ± 22ft

Distances from left bank edge.	LB	3.75	7.5	11.25	RB
17. Depth (feet)	0	3.8	3.5	2.6	0
18. Velocity (ft/s)	0	1.181	1.052	0.932	0
19. Bed substrate	SA	SA/GR	GR	SA/GR	SA
20. Embeddedness	0 (none)	2 (75%)	4 (10%)	2 (75%)	0 (none)

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	15		0		20	
22. Aspect (azimuth - 360 degrees)	90		140		90	
23. Habitat features	WD/OV/UB		WD, OV, UB		UB,WD,OV	
24. Bar/shelf/island	none		none		LB - point bar	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	95	135	115	145	145	100
26. Bank height (ft)	7.5	6.5	7.5	6.5	6.5	7.5
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	LN	LN	LN	CV	LN	LN
29. Bank erosion	MCB	none	MCB	none	none	MCB
30. Bank substrate	SA	SA	SA	SA	SA	SA/SI
31. Woody vegetation	p/hd/sh	hd/sh	p/hd/sh	hd/sh	sh/hd	hd/sh

32. Photodocumentation (center transect)	none
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	center transect (RB) has abundant cypress trees and knees
	secchi disk (light penetration) = 2.1 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 16. Stream characterization form for site 5 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 5. Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.

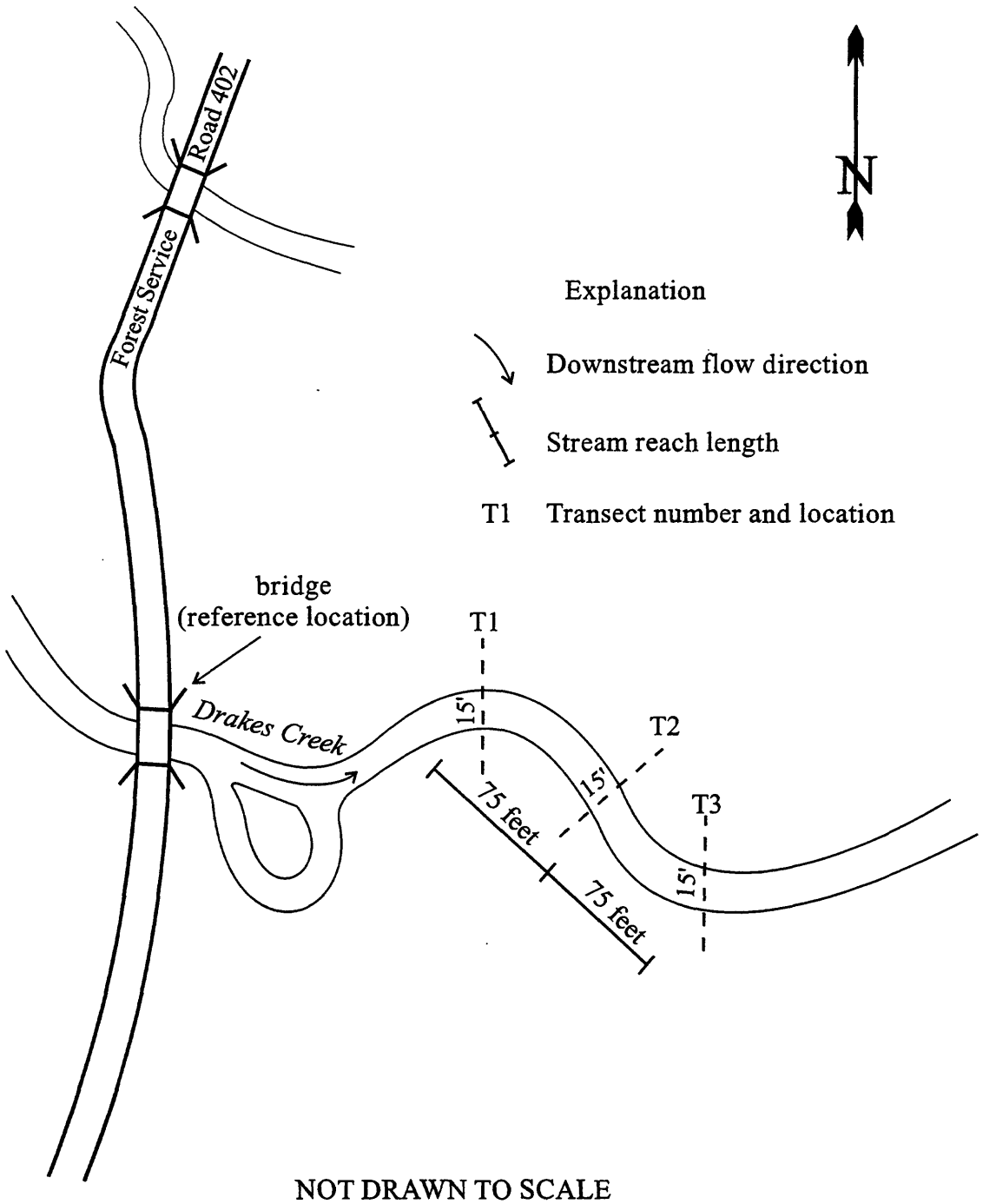


Figure 16. Stream characterization form for site 5 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road.
4. Station identification	Downstream order number: 08013630 **Site 6**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge H-7)	Latitude: 310034 Longitude: 930451 ± 26ft
7. Drainage area for Whiskey Chitto Creek north of the bridge on Lookout Road (map scale 1:50000)	74.2 sq km 28.7 sq mi 18341 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	3.5 11. Stream length 20.6 km
12. Basin relief above site 6 (north)	115m - 59m = 56m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road.
4. Station identification	Downstream order number: 8013630 **Site 6**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge H-7)	Latitude: 310034 Longitude: 930451 ± 26ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 7 W
11. Section	SW 1/4, NW1/4, section 3
12. Quadrangle	BIRDS CREEK QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 6 is ~20.6 km.
15. Elevation of reference location	190 ft or 59 m (land surface elevation at bridge H-7)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0027
18. Channel sinuosity	1.5
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 17. Stream characterization form for site 6 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Tues, March 4, 1997			
3. Station name	Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road.					
4. Station identification	Downstream order number:		8013630	Site 6		
5. Investigators	R. B. Fendick/R. W. Tollett					
6. Reference location (bridge H-7)	Latitude:	310034	Longitude:	930451	±26ft	
	Weather Conditions:	Sunny	Time:	1200		
	Stage:	1/3 bank full, falling				
7. Reference location description	concrete bridge on Lookout Road					
8. Upstream reach boundary (T1) nearest to reference location	about 150ft downstream from the reference location					
9. Channel width at reach boundary	30ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none	11. Reach length:	300ft			
12. Stream type	meandering/actively cutting banks					

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
13. Distance from center of reach (ft)	150		0		150	
14. Channel width (ft)	30		30		30	
15. Bank width (ft)	no data		no data		no data	
16. Flood-plain width			LB>50m, RB>50m			
	Center Transect - T2		Latitude 310032 Longitude 930449 ± 45ft			
Distances from left bank edge.	LB	7.5'	15.0'	22.5'	RB	
17. Depth (feet)	0	2.1	3.0	2.8	0	
18. Velocity (ft/s)	0	0.773	0.734	0.592	0	
19. Bed substrate	SA	SA/GR	GR/SA	SA/GR	SA	
20. Embeddedness	0 (none)	2 (66%)	3 (45%)	2 (66%)	0 (none)	

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	55		45		80	
22. Aspect (azimuth - 360 degrees)	135		140		160	
23. Habitat features	WD/OV/UB		WD/OV/UB/MS		WD/OV/UB/MS	
24. Bar/shelf/island	none		center bar		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	140	130	145	140	150	155
26. Bank height (ft)	11.5	11.5	12.0	11.5	8.5	8.0
27. Bank vegetation stability	3	3	2	2	2	2
28. Bank shape	CV	CV	CV	CC	LN	CV
29. Bank erosion	SCB	SCB	SCB	MCB	SCB	MCB
30. Bank substrate	SA	SA/SI	SA/SI	SA/SI	SA/SI	SA/SI
31. Woody vegetation	hd/sh/p	p/hd	p/hd	hd/sh	p/hd/sh	p/hd

32. Photodocumentation (center transect)	upstream/left bank/downstream/right bank (clockwise)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = 2.0 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 17. Stream characterization form for site 6 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

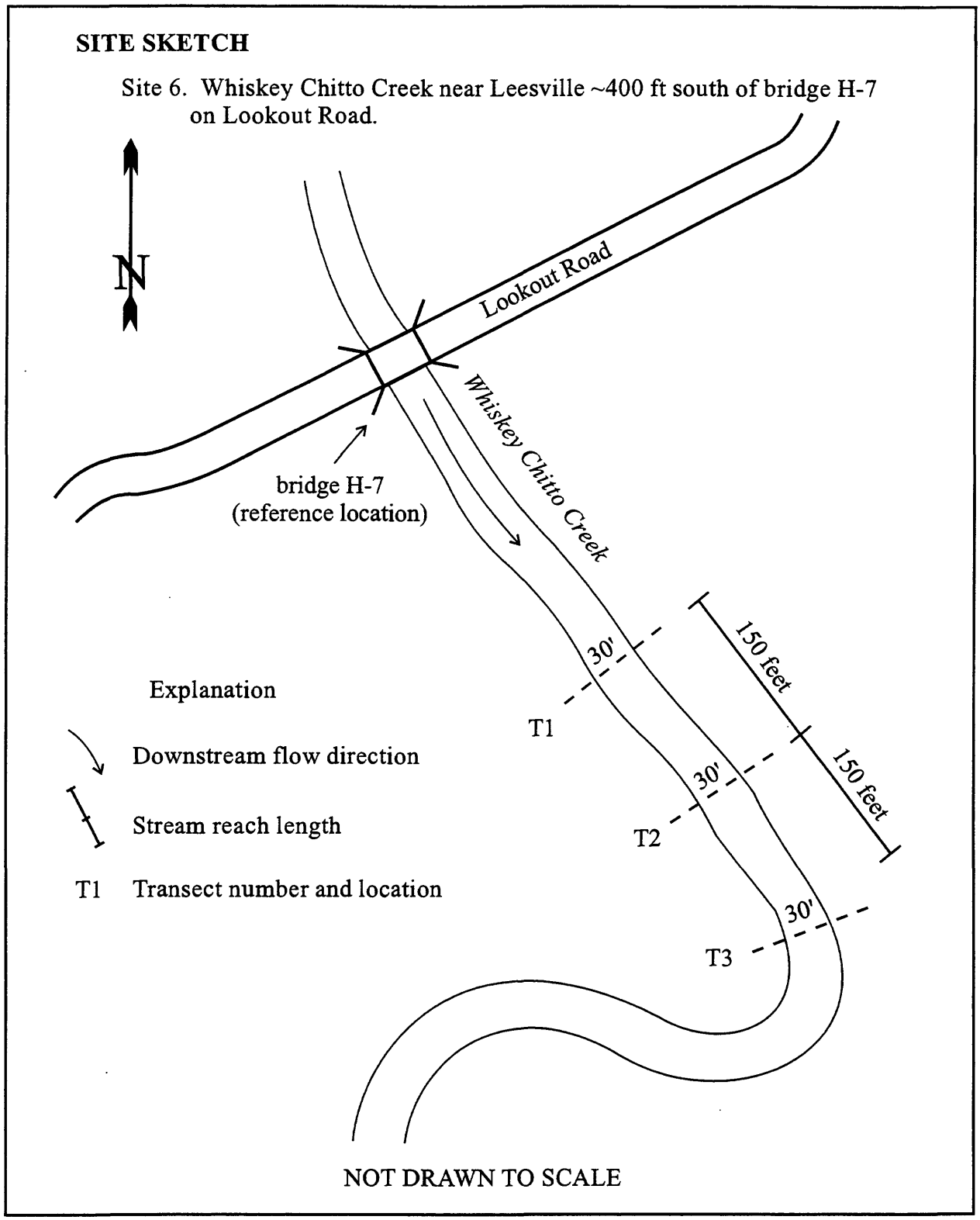


Figure 17. Stream characterization form for site 6 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Whiskey Chitto Creek ~200 ft north of bridge on Ray Gill Road east of Leesville.
4. Station identification	Downstream order number: 08013660 **Site 7**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305847 Longitude: 930320 ± 25ft
7. Drainage area for Whiskey Chitto Creek north of the bridge on Ray Gill Road (map scale 1:50000)	145.3 sq km 56.1 sq mi 35901 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	2.7 11. Stream length 25.6 km
12. Basin relief above site 7 (north)	115m - 56m = 59m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Whiskey Chitto Creek ~200 ft north of bridge on Ray Gill Road east of Leesville.
4. Station identification	Downstream order number: 8013660 **Site 7**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305847 Longitude: 930320 ± 25ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 7 W
11. Section	SW 1/4, NE 1/4, section 14
12. Quadrangle	SUGRUE QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 7 is ~25.6 km.
15. Elevation of reference location	179ft or 56m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0023
18. Channel sinuosity	1.5
19. Stream order	3 20. Downstream link 4
21. Water management feature	None

Figure 18. Stream characterization form for site 7 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Tues, March 4, 1997		
3. Station name	Whiskey Chitto Creek ~200 ft north of bridge on Ray Gill Road east of Leesville.				
4. Station identification	Downstream order number:		8013660	**Site 7**	
5. Investigators	R. B. Fendick/R. W. Tollett				
6. Reference location (bridge)	Latitude:	305847	Longitude:	930320	± 25ft
	Weather Conditions:	light fog	Time:	0800	
	Stage:	1/2 bank full, falling			
7. Reference location description	wooden plank bridge on unimproved road				
8. Downstream reach boundary (T3) nearest to reference location	about 75ft upstream from the reference location				
9. Channel width at reach boundary	30ft x 10 (20 recommended) = reach length				
10. Geomorphic channel units	none	11. Reach length:	300ft		
12. Stream type	meandering/actively cutting banks				

	Transects		
	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	150	0	150
14. Channel width (ft)	30	30	30
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB>50m, RB>50m	

Center Transect - T2 — Latitude 305847 Longitude 930323 ± 25ft

Distances from left bank edge.	LB	7.5'	15.0'	22.5'	RB
17. Depth (feet)	0	4.0	3.4	3.2	0
18. Velocity (ft/s)	0	1.136	1.283	1.248	0
19. Bed substrate	SA	SA	SA/GR	SA	SA
20. Embeddedness	0 (none)	0 (none)	1 (90%)	0 (none)	0 (none)

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	0		0		0	
22. Aspect (azimuth - 360 degrees)	90		90		70	
23. Habitat features	WD/OV/UB		WD/OV/UB/MS		WD/OV/UB	
24. Bar/shelf/island	LB - sand bar		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	140	115	100	130	115	130
26. Bank height (ft)	9.5	10.0	10.0	10.0	8.5	9.0
27. Bank vegetation stability	3	2	3	3	3	3
28. Bank shape	LN	CV	LN	CC	CV	CC
29. Bank erosion	SCB	MCB	SCB	MCB	SCB	MCB
30. Bank substrate	FINE SA	SA/SI	FINE SA	SA/SI	SA	SA/SI
31. Woody vegetation	hd	p/sh	hd/sh	p/sh	hd/sh	hd/sh

32. Photodocumentation (center transect)	upstream/left bank/downstream/right bank (clockwise)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = 1.7 ft

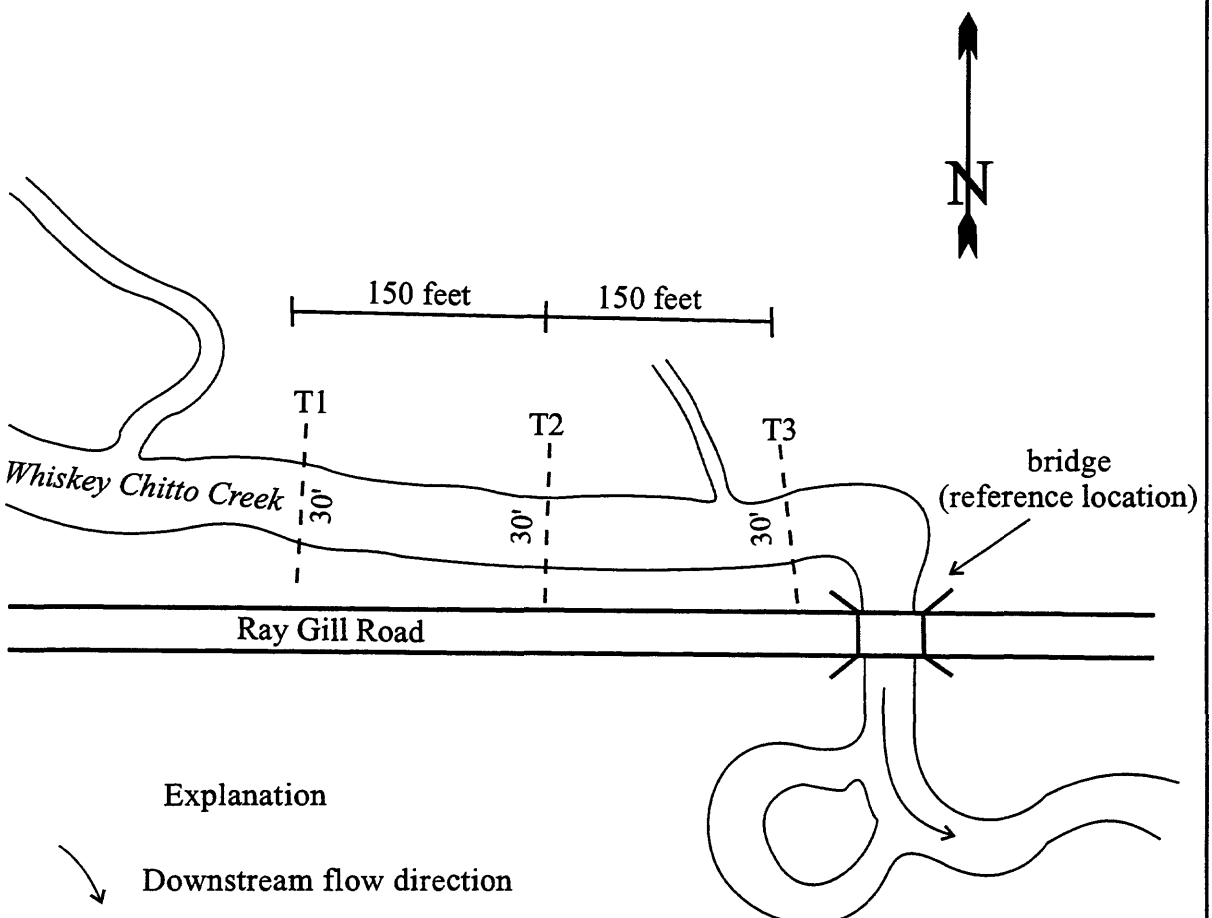
SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 18. Stream characterization form for site 7 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 7. Whiskey Chitto Creek ~200 ft northwest of bridge on Ray Gill Road east of Leesville.



NOT DRAWN TO SCALE

Figure 18. Stream characterization form for site 7 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Whiskey Chitto Creek ~200 ft north of old Athison Topeka and Santa Fe railroad bridge.
4. Station identification	Downstream order number: none **Site 8**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305723 Longitude: 930322 ± 40ft
7. Drainage area for Whiskey Chitto Creek north of the old railroad bridge (map scale 1:50000)	150.8 sq km 58.12 sq mi 37253 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	3.3 11. Stream length 26.3 km
12. Basin relief above site 8 (north)	115m - 51m = 62m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Whiskey Chitto Creek ~200 ft north of old Athison Topeka and Santa Fe railroad bridge.
4. Station identification	Downstream order number: none **Site 8**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge)	Latitude: 305723 Longitude: 930322 ± 40ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 7 W
11. Section	SW 1/4, SE 1/4, section 23
12. Quadrangle	SUGRUE QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 8 is ~26.3 km.
15. Elevation of reference location	165ft or 51m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0024
18. Channel sinuosity	1.3
19. Stream order	3 20. Downstream link 4
21. Water management feature	None

Figure 19. Stream characterization form for site 8 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Wed, March 5, 1997			
3. Station name	Whiskey Chitto Creek ~200 ft north of old Athison Topeka and Santa Fe railroad bridge.					
4. Station identification	Downstream order number:	none	**Site 8**			
5. Investigators	R. B. Fendick/R. W. Tollett					
6. Reference location (bridge)	Latitude:	305723	Longitude:	930322 ± 40ft		
	Weather Conditions:	partly cloudy	Time:	1200		
	Stage:	1/2 bank full, falling				
7. Reference location description	end of railroad bed, north of piling (bridge removed)					
8. Downstream reach boundary (T3) nearest to reference location	about 50ft upstream from the reference location					
9. Channel width at reach boundary	30ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none	11. Reach length:	300ft			
12. Stream type	meandering/slightly cutting banks					

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
13. Distance from center of reach (ft)	150		0		150	
14. Channel width (ft)	30		30		30	
15. Bank width (ft)	no data		no data		no data	
16. Flood-plain width			LB>50m, RB>50m			
	Center Transect - T2		Latitude 305726 Longitude 930324 ± 52ft			
Distances from left bank edge.	LB	7.5'	15.0'	22.5'	RB	
17. Depth (feet)	0	1.8	3.1	4.0	0	
18. Velocity (ft/s)	0	1.055	1.460	1.289	0	
19. Bed substrate	SA	SA	SA	SA	SA	
20. Embeddedness	0 (none)	0 (none)	0 (none)	0 (none)	0 (none)	

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	45		10		0	
22. Aspect (azimuth - 360 degrees)	190		190		195	
23. Habitat features	WD/OV/MS		WD/OV/MS		WD/OV/UB/MS	
24. Bar/shelf/island	none		LB-point bar		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	100	130	145	105	145	110
26. Bank height (ft)	14.5	9.0	9.5	14.0	8.0	10.5
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	LN	CV	LN	CC	LN	CV
29. Bank erosion	MCB	SCB	no CB	MCB	SCB	MCB
30. Bank substrate	SI	SA/SI	SA/SI	SA/SI	SI/SA	SA/SI
31. Woody vegetation	p/hd/sh	hd/p	hd/p	hd/p	hd/p	hd/p

32. Photodocumentation (center transect)	right bank/upstream/left bank/downstream (clockwise)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = 1.6 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 19. Stream characterization form for site 8 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

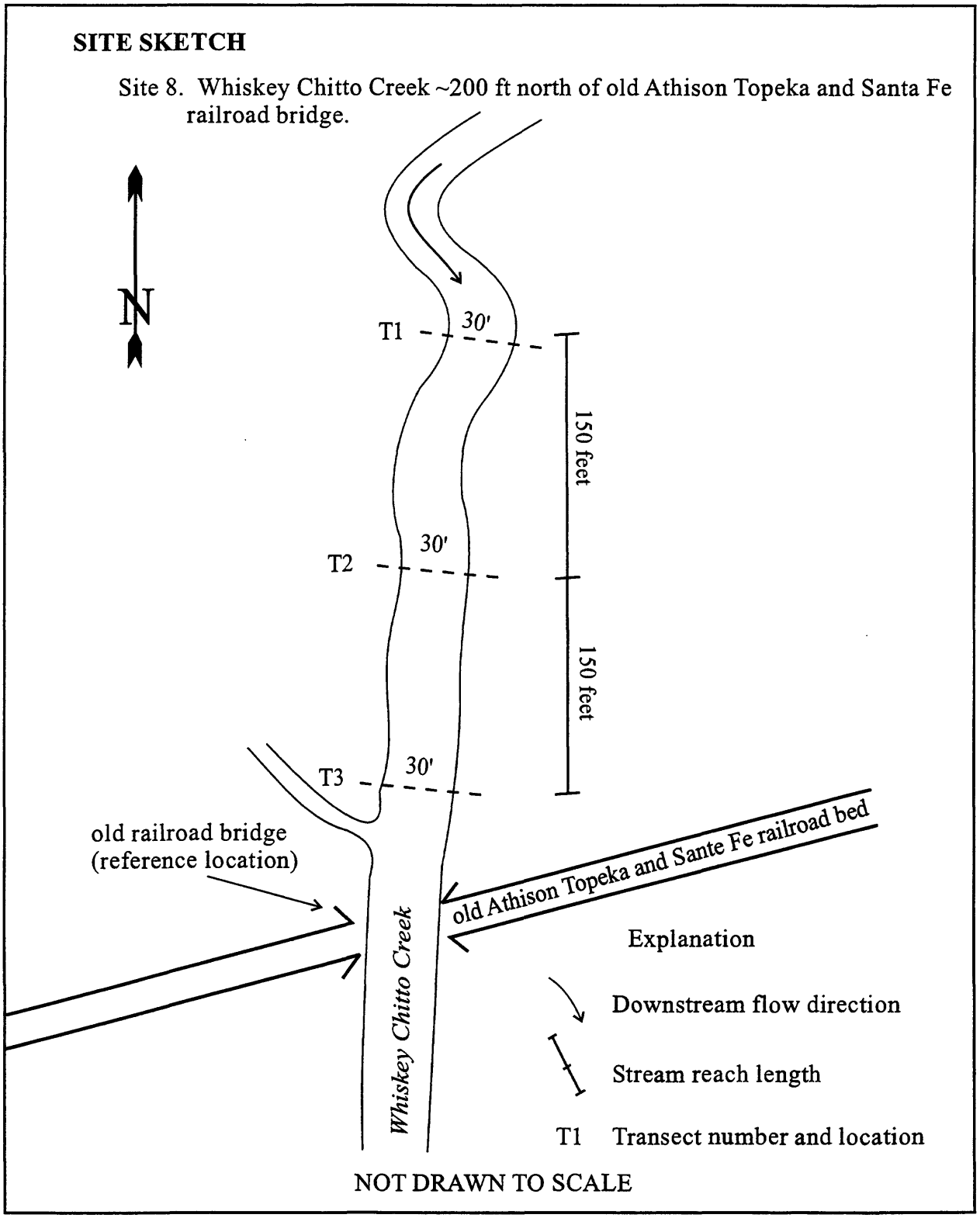


Figure 19. Stream characterization form for site 8 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.
4. Station identification	Downstream order number: 08013650 **Site 9**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge H-8)	Latitude: 310116 Longitude: 930313 ± 32ft
7. Drainage area for Birds Creek north of the bridge on Lookout Road (map scale 1:50000)	56.5 sq km 21.8 sq mi 13955 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape (1:50000)	4.3 11. Stream length 18.4 km
12. Basin relief above site 9	137m - 60m = 77m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.
4. Station identification	Downstream order number: 08013650 **Site 9**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge H-8)	Latitude: 310116 Longitude: 930313 ± 32ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 N 10. Range R. 7 W
11. Section	NE 1/4, SE 1/4, section 35
12. Quadrangle	BIRDS CREEK QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 9 is ~18.4 km.
15. Elevation of reference location	201ft or 61m (land surface elevation at bridge)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0042
18. Channel sinuosity	1.4
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 20. Stream characterization form for site 9 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Tues, March 4, 1997			
3. Station name	Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.					
4. Station identification	Downstream order number:	08013650	**Site 9**			
5. Investigators	R. B. Fendick/R. W. Tollett					
6. Reference location (bridge H-8)	Latitude:	310116	Longitude:	930313 ± 32ft		
	Weather Conditions:	cloudy	Time:	1600		
	Stage:	1/3 bank full, falling				
7. Reference location description	concrete bridge on Lookout Road					
8. Upstream reach boundary (T1) nearest to reference location	about 200ft downstream from the reference location					
9. Channel width at reach boundary	20ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none	11. Reach length:	200ft			
12. Stream type	meandering/actively cutting banks					

Transects

	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	100	0	100
14. Channel width (ft)	20	20	20
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB<50m, RB>50m	

Center Transect - T2 Latitude 310115 Longitude 930312 ± 34ft

Distances from left bank edge	LB	5.0'	15.0'	15.0'	RB
17. Depth (feet)	0	1.5	2.2	2.2	0
18. Velocity (ft/s)	0	1.349	1.512	1.008	0
19. Bed substrate	SA/GR	GR/SA	GR	GR/SA	SA/GR
20. Embeddedness	1 (90%)	3 (45%)	4 (10%)	3 (45%)	1 (90%)

Transects

	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	40		35		15	
22. Aspect (azimuth - 360 degrees)	110		110		205	
23. Habitat features	WD/OV/MS		WD/OV/MS		WD/OV/MS	
24. Bar/shelf/island	none		RB-point bar		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	135	145	135	125	125	110
26. Bank height (ft)	9.0	9.0	6.5	8.5	11.0	9.5
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	CV	CV	CV	CC	LN	LN
29. Bank erosion	SCB	MCB	MCB	SCB	SCB	MCB
30. Bank substrate	SA/SI	SA	SA	SA	SA/SI	SI/SA
31. Woody vegetation	sh	p/hd/sh	p/sh	p/hd/sh	p	p/hd

32. Photodocumentation (center transect)	upstream/left bank/downstream/right bank (clockwise)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	bamboo on left bank of upstream transect; secchi disk (light penetration) = 1.8 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix B by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 20. Stream characterization form for site 9 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 9. Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.

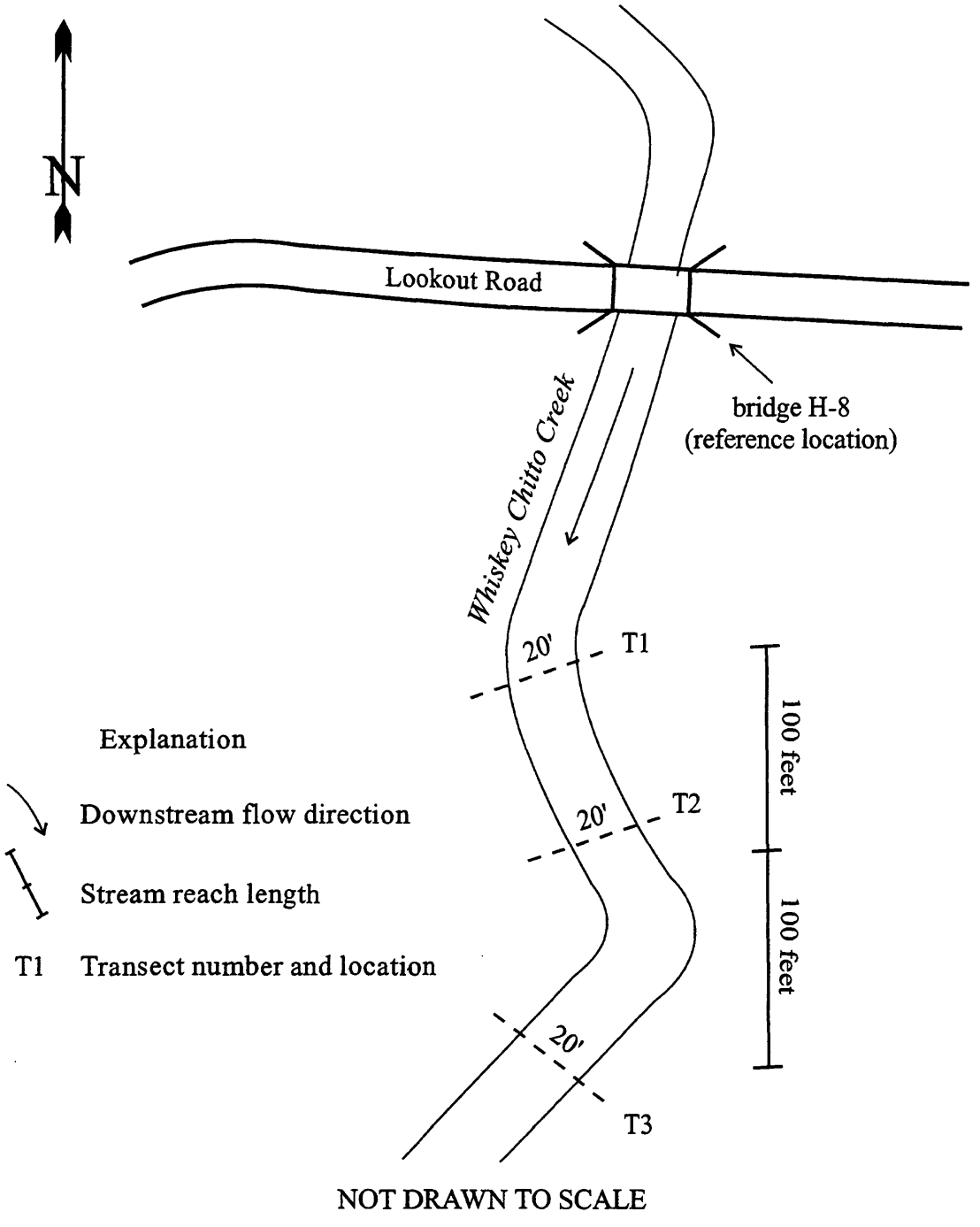


Figure 20. Stream characterization form for site 9 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Little Sixmile Creek near the end of Gravel Pit Cutoff Road.
4. Station identification	Downstream order number: none **Site 10**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (G.P. Cutoff)	Latitude: 305935 Longitude: 930155
7. Drainage area for Little Sixmile Creek north of site 10 (map scale 1:50000)	13.5 sq km 5.2 sq mi 3324 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape	2.3 11. Stream length 6.0 km
12. Basin relief above site 10 (north)	100m - 60m = 40m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	Little Sixmile Creek near the end of Gravel Pit Cutoff Road.
4. Station identification	Downstream order number: none **Site 10**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (G.P. Cutoff)	Latitude: 305935 Longitude: 930155
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 6 W
11. Section	SW 1/4, NW1/4, section 7
12. Quadrangle	SUGRUE QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 10 is 6.0 km.
15. Elevation of reference location	195 ft or 59 m (land surface elevation of land near site 10)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0066
18. Channel sinuosity (1:50000)	2.0
19. Stream order	1 20. Downstream link 2
21. Water management feature	None

Figure 21. Stream characterization form for site 10 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Wed, March 5, 1997			
3. Station name	Little Sixmile Creek near the end of Gravel Pit Cutoff Road.					
4. Station identification	Downstream order number:	none	**Site 10**			
5. Investigators	Rob Fendick/Roland W. Tollett					
6. Reference location	Latitude:	305935	Longitude:	930155 ± 30		
	Weather Conditions:	Partly sunny	Time:	1300		
	Stage:	1/2 bank full/falling				
7. Reference location description	intersection of Gravel Pit Cutoff Road and a pipeline					
8. Upstream reach boundary (T1) nearest to reference location	about 300ft east of the reference location					
9. Channel width at reach boundary	10ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none	11. Reach length:	100ft			
12. Stream type	meandering/actively cutting banks					

Transects

	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	50	0	50
14. Channel width (ft)	11	10	12
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB < 50m, RB ~50m	

Center Transect - T2 — Latitude 305933 Longitude 930149 ± 34ft

Distances from left bank edge.	LB	2.5'	5.0'	7.5'	RB
17. Depth (feet)	0	1.0	0.9	0.8	0
18. Velocity (ft/s)	0	1.118	1.280	0.885	0
19. Bed substrate	SA/GR	GR/SA	GR	GR/SA	SA/GR
20. Embeddedness	1 (90%)	2 (75%)	3 (45%)	2 (75%)	1 (90%)

Transects

	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	20		0		0	
22. Aspect (azimuth - 360 degrees)	180		165		190	
23. Habitat features	WD/OV/UB		OV/UB/MS		OV/UB/MS	
24. Bar/shelf/island	gravel bar - RB		none		gravel deposits	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	145	155	135	150	125	135
26. Bank height (ft)	3.0	2.5	3.0	2.5	3.0	2.5
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	LN	LN	CC	LN	CC	CC
29. Bank erosion	SCB	none	MCB	none	MCB	none
30. Bank substrate	SA/SI	SA/GR	SA	SA	GR/SA	SA
31. Woody vegetation	hd/sh	p/hd/sh	p/hd/sh	hd/sh	hd/p/sh	hd/p

32. Photodocumentation (center transect)	upstream/left bank (clockwise) - end of roll
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = to depth

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix C by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 21. Stream characterization form for site 10 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

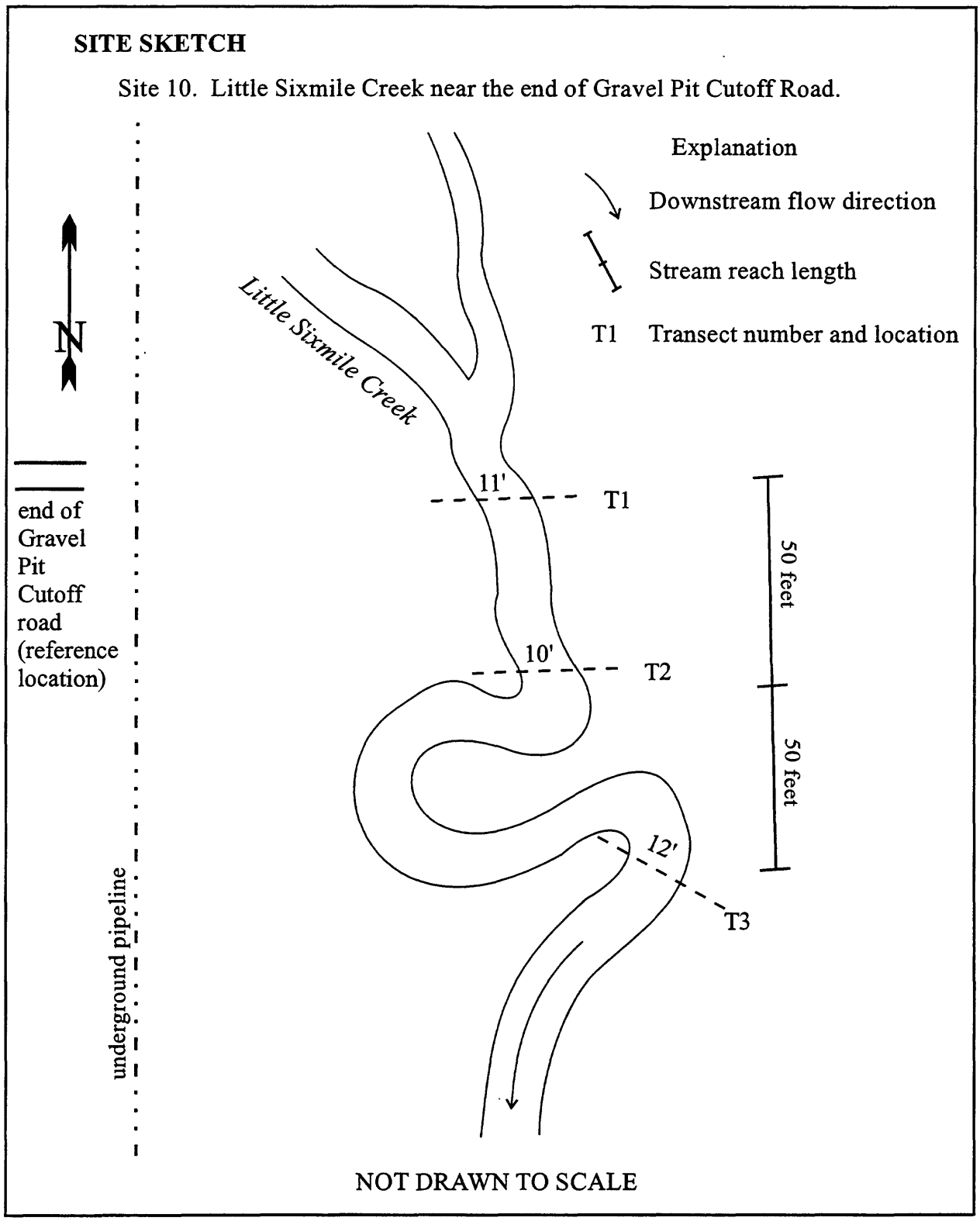


Figure 21. Stream characterization form for site 10 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road.
4. Station identification	Downstream order number: 08013850 **Site 11**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge H-9)	Latitude: 310220 Longitude: 930015 ± 32ft
7. Drainage area for West Fork Creek north of the bridge on Lookout road (map scale 1:50000)	48.8 sq km 18.8 sq mi 12053 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape	3.6 11. Stream length 15.1 km
12. Basin relief above site 11 (north)	115m - 60m = 55m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road.
4. Station identification	Downstream order number: 08013850 **Site 11**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (bridge H-9)	Latitude: 310220 Longitude: 930015 ± 32ft
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 N 10. Range R. 6 W
11. Section	SE 1/4, NE1/4, section 29
12. Quadrangle	BIRDS CREEK QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 11 is 15.1 km.
15. Elevation of reference location	200 ft or 60 m (land surface elevation at bridge H-9)
16. Sideslope gradient	Not determined
17. Segment gradient	0.0036
18. Channel sinuosity (1:50000)	1.5
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 22. Stream characterization form for site 11 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD	2. Date:	Tues, March 4, 1997			
3. Station name	West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road.					
4. Station identification	Downstream order number:	08013850	**Site 11**			
5. Investigators	Rob Fendick/Roland W. Tollett					
6. Reference location (bridge H-9)	Latitude:	310220	Longitude:	930015 ± 32ft		
	Weather Conditions:	Partly cloudy	Time:	1400		
	Stage:	2/3 bank full, falling				
7. Reference location description	concrete bridge on Lookout Road					
8. Upstream reach boundary (T1) nearest to reference location	~300ft downstream of the reference location					
9. Channel width at reach boundary	15ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none	11. Reach length:	150ft			
12. Stream type	meandering/slightly cutting banks					

Transects

	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	75	0	75
14. Channel width (ft)	15	15	15
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 — Latitude 310218 Longitude 930014 ± 30ft

Distances from left bank edge.	LB	3.75'	7.5'	11.25'	RB
17. Depth (feet)	0	2.4	2.8	2.9	0
18. Velocity (ft/s)	0	1.201	1.501	1.480	0
19. Bed substrate	SI/SA	SI/SA	SI/SA	SI/SA	SI/SA
20. Embeddedness	none	none	none	none	none

Transects

	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	10		0		10	
22. Aspect (azimuth - 360 degrees)	30		180		110	
23. Habitat features	WD/OV/UB/MS		WD/OV/UB/MS		WD/OV/UB/MS	
24. Bar/shelf/island	none		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	150	120	145	135	125	135
26. Bank height (ft)	5.5	4.5	5.5	7.0	5.0	6.0
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	CC	LN	CV	CV	CV	CV
29. Bank erosion	SCB	SCB	SCB	SCB	SCB	SCB
30. Bank substrate	SI/SA	SI/SA	SA	SA	SA/SI	SA/SI
31. Woody vegetation	hd/sh	hd/sh	hd/sh	hd/sh	hd/sh	hd/sh

32. Photodocumentation (center transect)	upstream/left bank/downstream/right bank (clockwise)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = 1.8 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix C by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 22. Stream characterization form for site 11 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

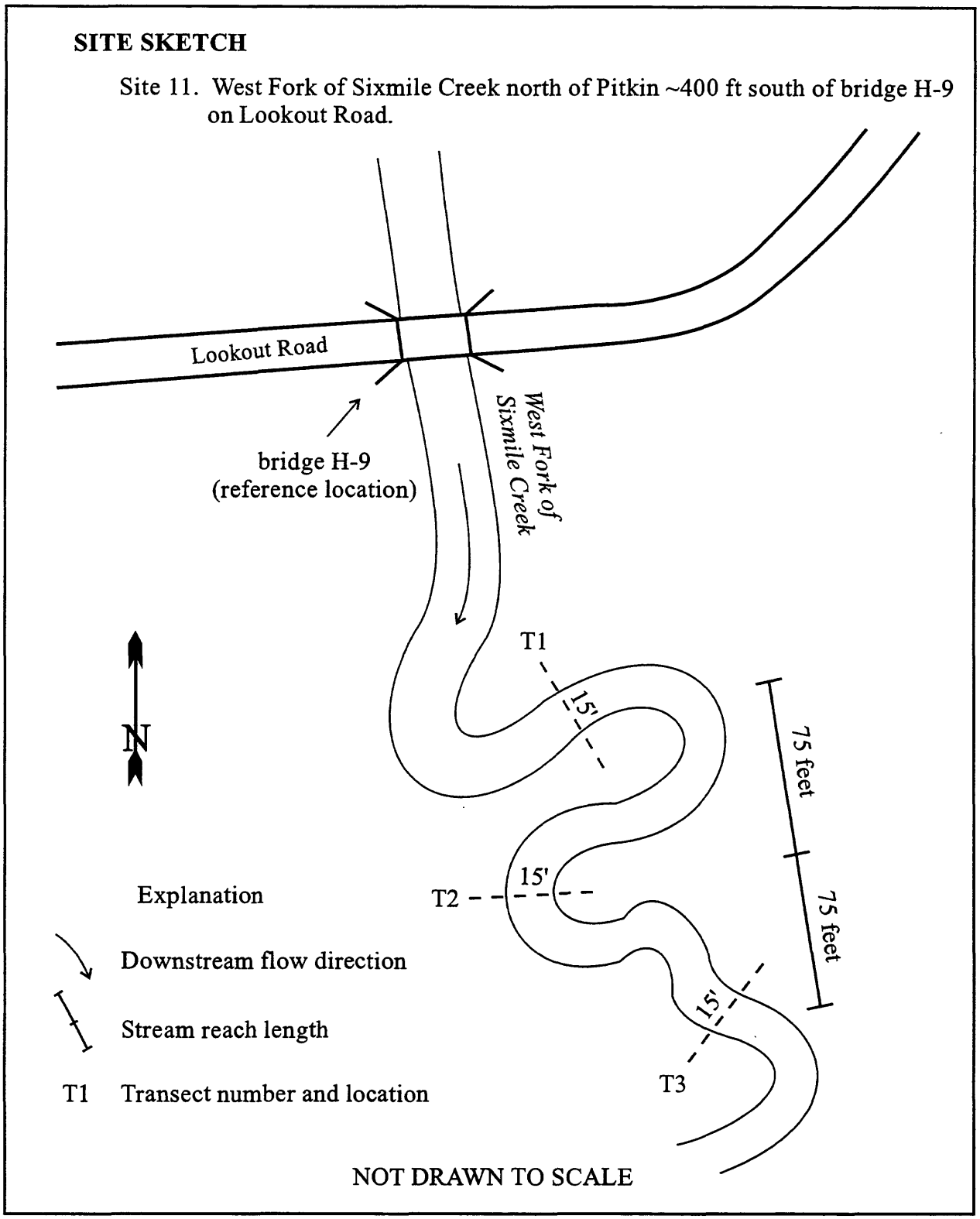


Figure 22. Stream characterization form for site 11 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	West Fork of Sixmile Creek ~750 ft west of Fullerton Lake.
4. Station identification	Downstream order number: none **Site 12**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (Fullerton Lake)	Latitude: 310100 Longitude: 925900
7. Drainage area for West Fork Creek north of site 12 (map scale 1:50000)	62.8 sq km 24.2 sq mi 15512 acres
8. Drainage density	Not determined 9. Drainage Texture Not determined
10. Drainage Shape	4.7 11. Stream length 19.9 km
12. Basin relief above site 10 (north)	115m - 55m = 60m 13. Storage Not determined
14. Ecoregion (1:2,500,000)	South Central Plains
15. Physiographic province	West Gulf Coastal Plain
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.
18. Soil type	moist ultisols (udults)
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.

SEGMENT CHARACTERIZATION

1. Study unit	ACAD 2. Date: November 1996 - February 1997
3. Station name	West Fork of Sixmile Creek ~750 ft west of Fullerton Lake.
4. Station identification	Downstream order number: none **Site 12**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett
6. Reference location (Fullerton Lake)	Latitude: 310100 Longitude: 925900
7. State	Louisiana 8. Parish Vernon
9. Township	T. 1 S 10. Range R. 6 W
11. Section	SE 1/4, NW1/4, section 4
12. Quadrangle	FULLERTON LAKE QUADRANGLE - 7.5 Minute Series (Topographic)
13. Segment code	Not determined
14. Segment length (1:50000)	Stream length above site 12 is 19.9 km.
15. Elevation of site 12	181 ft or 55 m (elevation of land near site 12)
16. Sideslope gradient	Not determined
17. Segment gradient	0.003
18. Channel sinuosity (1:50000)	1.4
19. Stream order	2 20. Downstream link 3
21. Water management feature	None

Figure 23. Stream characterization form for site 12 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD		2. Date:	Wed, March 5, 1997		
3. Station name	West Fork of Sixmile Creek ~750ft west of Fullerton Lake.					
4. Station identification	Downstream order number:		none		**Site 12**	
5. Investigators	Rob Fendick/Roland W. Tollett					
6. Reference location	Latitude:	310100	Longitude:	925900		
	Weather Conditions:	Partly cloudy	Time:	1000		
	Stage:	2/3 bank full/falling				
7. Reference location description	N-S trending levee on the west bank of Fullerton Lake					
8. Upstream reach boundary (T1) nearest to reference location	about 750ft west of the reference location					
9. Channel width at reach boundary	20ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none		11. Reach length:	200ft		
12. Stream type	meandering/slightly cutting banks					

	Transects		
	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	100	0	100
14. Channel width (ft)	17	19	15
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 Latitude 310030 Longitude 925919 ± 24ft

Distances from left bank edge.	LB	5.0'	10.0'	15.0'	RB
17. Depth (feet)	0	1.8	4.0	4.5	0
18. Velocity (ft/s)	0	0.769	1.170	0.941	0
19. Bed substrate	SA/SI	SA	SA	SA	SA/SI
20. Embeddedness	none	none	none	none	none

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	30		0		0	
22. Aspect (azimuth - 360 degrees)	25		70		70	
23. Habitat features	WD/OV/UB/MS		WD/OV/UB/MS		WD/OV/UB/MS	
24. Bar/shelf/island	none		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	150	120	140	155	150	135
26. Bank height (ft)	5.0	5.5	6.0	5.5	5.5	6.0
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	LN	LN	CV	CV	CV	CV
29. Bank erosion	none	MCB	SCB	SCB	SCB	SCB
30. Bank substrate	SA/SI	SI/SA	SI/SA	SI/SA	SI/SA	SI/SA
31. Woody vegetation	hd/sh	hd/sh	hd/sh	p/hd	hd/sh	hd/sh

32. Photodocumentation (center transect)	none at this site
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = 2.6 ft

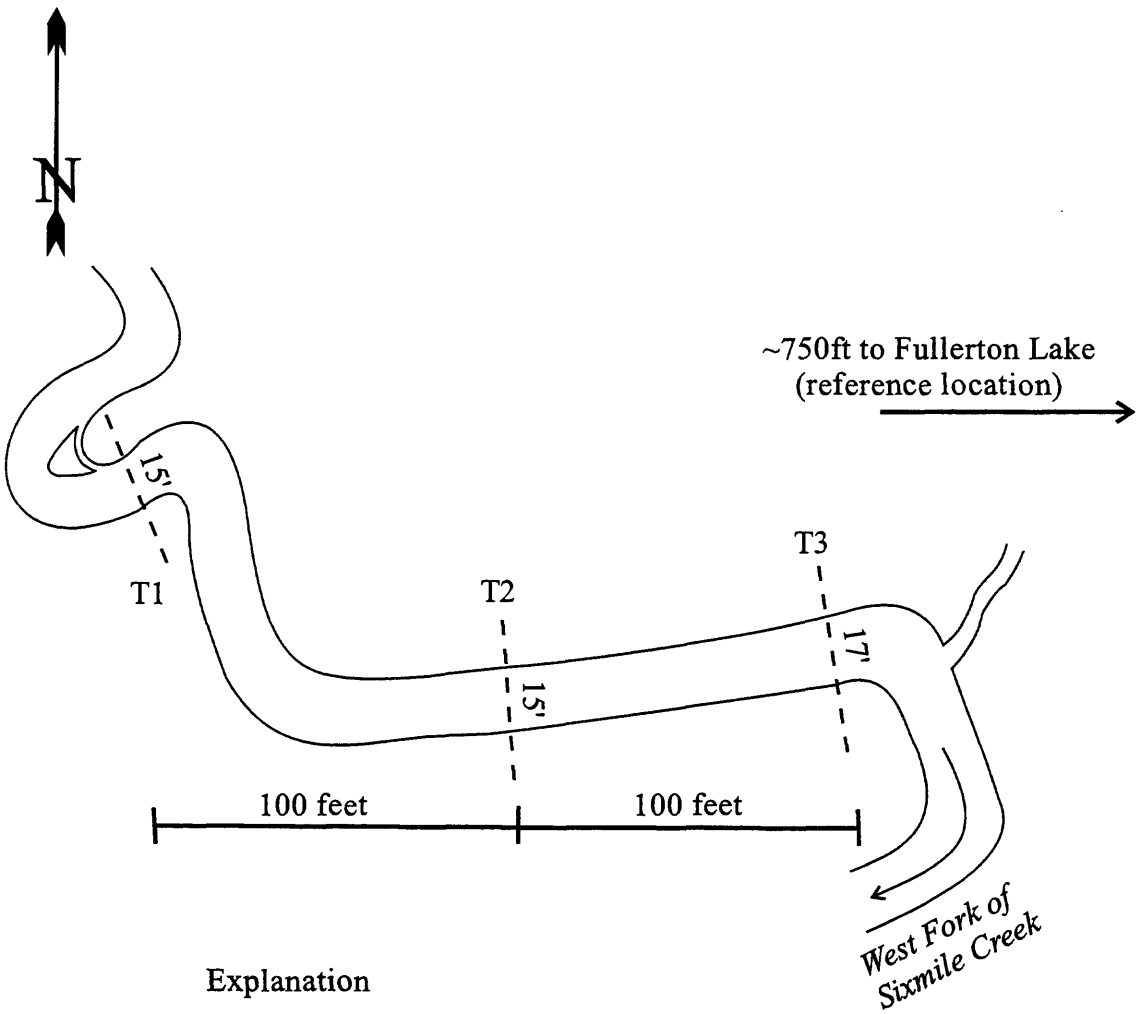
SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix C by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 23. Stream characterization form for site 12 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 12. West Fork of Sixmile Creek ~750 ft west of Fullerton Lake.



Explanation

Downstream flow direction

Stream reach length

T1 Transect number and location

NOT DRAWN TO SCALE

Figure 23. Stream characterization form for site 12 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD	2. Date:	November 1996 - February 1997
3. Station name	East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.		
4. Station identification	Downstream order number: 08013880		**Site 13**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett		
6. Reference location (bridge)	Latitude: 310204	Longitude:	925801 ± 33ft
7. Drainage area for East Fork Creek north of bridge on Lookout road (map scale 1:50000)	51.4 sq km 19.8 sq mi 12700 acres		
8. Drainage density	Not determined	9. Drainage Texture	Not determined
10. Drainage Shape	3.1	11. Stream length	14.7 km
12. Basin relief above site 10 (north)	115m - 60m = 55m	13. Storage	Not determined
14. Ecoregion (1:2,500,000)	South Central Plains		
15. Physiographic province	West Gulf Coastal Plain		
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)		
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.		
18. Soil type	moist ultisols (udults)		
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture		
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.		
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.		

SEGMENT CHARACTERIZATION

1. Study unit	ACAD	2. Date:	November 1996 - February 1997
3. Station name	East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.		
4. Station identification	Downstream order number: 08013880		**Site 13**
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett		
6. Reference location (bridge)	Latitude: 310204	Longitude:	925801 ± 33ft
7. State	Louisiana	8. Parish	Vernon
9. Township	T. 1 N	10. Range	R. 6 W
11. Section	NE 1/4, SE1/4, section 27		
12. Quadrangle	FULLERTON LAKE QUADRANGLE - 7.5 Minute Series (Topographic)		
13. Segment code	Not determined		
14. Segment length (1:50000)	Stream length above site 13 is 14.7 km.		
15. Elevation of reference location	195 ft or 59 m (land surface elevation at bridge)		
16. Sideslope gradient	Not determined		
17. Segment gradient	0.0044		
18. Channel sinuosity (1:50000)	1.3		
19. Stream order	2	20. Downstream link	3
21. Water management feature	None		

Figure 24. Stream characterization form for site 13 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD		2. Date:	Mon, March 3, 1997		
3. Station name	East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.					
4. Station identification	Downstream order number:		08013880	**Site 13**		
5. Investigators	Rob Fendick/Roland W. Tollett					
6. Reference location	Latitude:	310204	Longitude:	925801 ± 33ft		
	Weather Conditions:	Sunny	Time:	1600		
	Stage:	1/2 bank full/falling				
7. Reference location description	concrete bridge on Lookout Road					
8. Upstream reach boundary (T1) nearest to reference location	~50ft south of the reference location					
9. Channel width at reach boundary	20ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none		11. Reach length:	100ft		
12. Stream type	meandering/slightly cutting banks					

Transects

	Upstream - T1	Center - T2	Downstream - T3
13. Distance from center of reach (ft)	100	0	100
14. Channel width (ft)	20	20	20
15. Bank width (ft)	no data	no data	no data
16. Flood-plain width		LB > 50m, RB > 50m	

Center Transect - T2 — Latitude 310032 Longitude 930449 ± 45ft

Distances from left bank edge.	LB	5.0'	10.0'	15'	RB
17. Depth (feet)	0	2.9	2.8	3.7	0
18. Velocity (ft/s)	0	1.342	1.573	1.099	0
19. Bed substrate	SA/GR	GR/SA	GR	GR/SA	SA/GR
20. Embeddedness	2 (66%)	3 (45%)	4 (90%)	3 (45%)	2 (66%)

Transects

	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	60		40		15	
22. Aspect (azimuth - 360 degrees)	210		210		200	
23. Habitat features	WD/OV/UB		OV/UB/MS		OV/UB/MS	
24. Bar/shelf/island	none		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	115	125	120	95	150	100
26. Bank height (ft)	10.5	10.5	10.0	10.0	12.0	12.0
27. Bank vegetation stability	2	2	2	2	2	2
28. Bank shape	CV	CV	CV	CV	CC	CC
29. Bank erosion	none	none	none	none	MCB	MCB
30. Bank substrate	SA	SA	SA	SA	SA	SA
31. Woody vegetation	p/hd/sh	p/hd/sh	hd/sh	hd/sh	p/hd/sh	p/hd/sh

32. Photodocumentation (center transect)	upstream/left bank/downstream/right bank (clockwise)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = 2.0 ft

SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix C by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 24. Stream characterization form for site 13 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 13. East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.

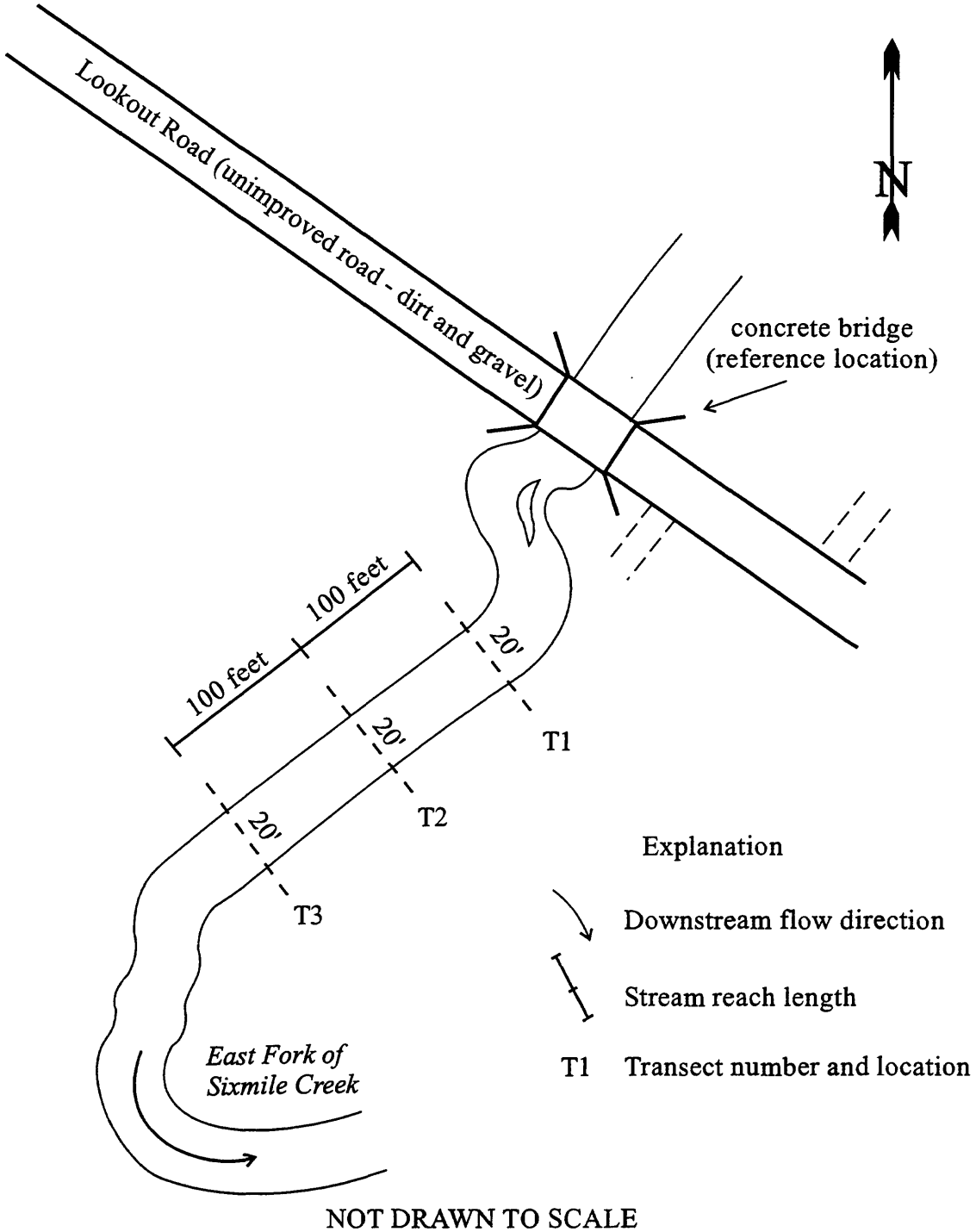


Figure 24. Stream characterization form for site 13 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

STREAM CHARACTERIZATION FORM

BASIN CHARACTERIZATION

1. Study unit	ACAD	2. Date: November 1996 - February 1997	
3. Station name	East Fork of Sixmile Creek ~200 ft north of bridge on Fullerton Blacktop Road (F.S. Road 412).		
4. Station identification	Downstream order number: none	**Site 14**	
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett		
6. Reference location (bridge)	Latitude: 310008	Longitude: 925757 ± 22ft	
7. Drainage area for East Fork Creek north of bridge on Fullerton Blacktop road (map scale 1:50000)	59.2 sq km	22.9 sq mi	14628 acres
8. Drainage density	Not determined	9. Drainage Texture	Not determined
10. Drainage Shape	4.2	11. Stream length	18.8 km
12. Basin relief above site 10 (north)	115m - 55m = 60m	13. Storage	Not determined
14. Ecoregion (1:2,500,000)	South Central Plains		
15. Physiographic province	West Gulf Coastal Plain		
16. Land use	FO - Deciduous forest land (De) and Evergreens (Ev)		
17. Geologic type (map scale 1:500,000)	Qth-High terraces The Pleistocene terrace deposits unconformably overlay the Pliocene-Pleistocene deposits of the the Blounts Creek Member of the Fleming Formation. High terrace deposits are defined as tan to orange clay, silt, and sand with large amounts of basal gravel. Mfb-Blounts Creek Member The Blounts Creek Member of the Fleming Formation overlies the Castor Creek Member. Blounts Creek Member is described as a gray to green silty clays, siltstones, and silts with abundant sand beds wih some lignite and lenses of black chert gravel.		
18. Soil type	moist ultisols (udults)		
19. Potential natural vegetation	oak/hickory/pine - woodland and forest w/some cropland and pasture		
20. Wetlands (bogs)	Refer to figure 2 for bog locations, and Appendix C for descriptions.		
21. Mean annual precipitation	Over the past 5 years, mean annual precipitation was 58.3 in/yr.		

SEGMENT CHARACTERIZATION

1. Study unit	ACAD	2. Date: November 1996 - February 1997	
3. Station name	East Fork of Sixmile Creek ~200 ft north of bridge on Fullerton Blacktop Road (F.S. Road 412).		
4. Station identification	Downstream order number: none	**Site 14**	
5. Investigators	C. R. Demas, R. B. Fendick, R. W. Tollett		
6. Reference location (bridge)	Latitude: 310008	Longitude: 925757 ± 22ft	
7. State	Louisiana	8. Parish Vernon	
9. Township	T. 1 S	10. Range R. 6 W	
11. Section	NE 1/4, SE1/4, section 3		
12. Quadrangle	FULLERTON LAKE QUADRANGLE - 7.5 Minute Series (Topographic)		
13. Segment code	Not determined		
14. Segment length (1:50000)	Stream length above site 14 is 18.8 km.		
15. Elevation of reference location	195 ft or 59 m (land surface elevation at bridge)		
16. Sideslope gradient	Not determined		
17. Segment gradient	0.0038		
18. Channel sinuosity (1:50000)	1.3		
19. Stream order	2	20. Downstream link	3
21. Water management feature	None		

Figure 25. Stream characterization form for site 14 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana.

FIRST-LEVEL REACH CHARACTERIZATION

1. Study unit	ACAD		2. Date:	Mon, March 3, 1997		
3. Station name	East Fork of Sixmile Creek ~200 ft north of bridge on Fullerton Blacktop Road (F.S. Road 412).					
4. Station identification	Downstream order number:		none		**Site 14**	
5. Investigators	Rob Fendick/Roland W. Tollett					
6. Reference location	Latitude:	310008	Longitude:	925757 ± 22ft		
	Weather Conditions:	Sunny	Time:	1300		
	Stage:	1/2 bank full/falling				
7. Reference location description	concrete bridge on unimproved road					
8. Downstream reach boundary (T3) nearest to reference location	about 200ft east of the reference location					
9. Channel width at reach boundary	10ft x 10 (20 recommended) = reach length					
10. Geomorphic channel units	none		11. Reach length:	200ft		
12. Stream type	meandering/slightly cutting banks					

	Transects				
	Upstream - T1	Center - T2		Downstream - T3	
13. Distance from center of reach (ft)	100	0		100	
14. Channel width (ft)	20	20		25	
15. Bank width (ft)	no data	no data		no data	
16. Flood-plain width		LB > 50m, RB > 50m			
	Center Transect - T2	Latitude 310010 Longitude 925753 ± 30ft			
Distances from left bank edge.	LB	5.0'	10.0'	15.0'	RB
17. Depth (feet)	0	4.5	4.0	3.5	0
18. Velocity (ft/s)	0	1.047	1.729	1.050	0
19. Bed substrate	SA	SA	SA/GR	SA	SA
20. Embeddedness	none	none	1 (90%)	none	none

	Transects					
	Upstream - T1		Center - T2		Downstream - T3	
21. Canopy angle (degrees)	25		0		50	
22. Aspect (azimuth - 360 degrees)	215		235		240	
23. Habitat features	WD/OV/UB/MS		WD/OV/UB/MS		WD/OV/UB/MS	
24. Bar/shelf/island	gravel bar - LB		none		none	
LB-left bank/RB-right bank	LB	RB	LB	RB	LB	RB
25. Bank angle (degrees)	130	110	110	130	150	135
26. Bank height (ft)	7.0	7.5	7.5	7.0	7.0	7.0
27. Bank vegetation stability	3	3	3	3	3	3
28. Bank shape	CC	CV	CC	CV	CV	CV
29. Bank erosion	MCB	SCB	MCB	SCB	SCB	SCB
30. Bank substrate	SA	SA	SA	SA	SA/GR	SA/GR
31. Woody vegetation	p/hd/sh	p/hd/sh	p/hd/sh	p/hd/sh	p/hd/sh	p/hd/sh

32. Photodocumentation (center transect)	upstream/upstream/downstream at downstream transect (T3)
33. Diagrammatic map	refer to following page
34. Aquatic and riparian vegetation species - Refer to Appendicies B and C.	
35. Comments	secchi disk (light penetration) = to depth (2.3 ft)

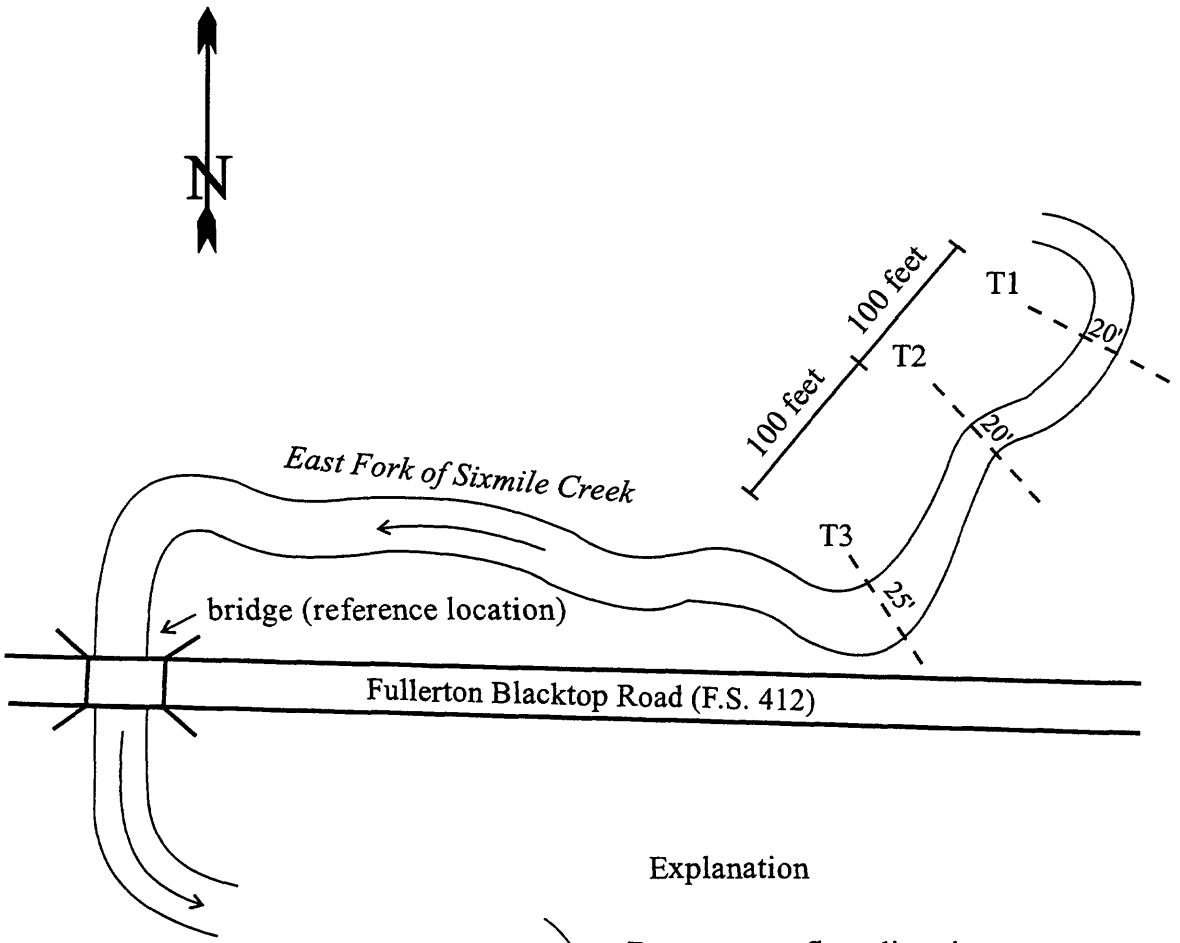
SECOND-LEVEL REACH CHARACTERIZATION

Microhabitat characterization	
Benthic invertabrate communities	Refer to work in Appendix C by Dr. Vidrine.
Fish communities	Refer to previous work.

Figure 25. Stream characterization form for site 14 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

SITE SKETCH

Site 14. East Fork of Sixmile Creek ~300 ft northeast of bridge on Fullerton Blacktop Road east of Leesville.



NOT DRAWN TO SCALE

Figure 25. Stream characterization form for site 14 in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued.

- PAGE 65 FOLLOWS -

TABLES 2-19

Table 2. Basin areas, lengths, elevations, and gradients for Bundick Creek, Drakes Creek, Whiskey Chitto Creek, Birds Creek, Little Sixmile Creek, and West and East Fork of Sixmile Creek in the Vernon Ranger District, Kisatchie National Forest, Louisiana

[sq km, square kilometers; sq mi, square miles; km, kilometers; mi, miles; LUA, Limited Use Area; EOD, explosive ordinance disposal range]

Basin	Area			Basin length along creek	Elevation difference	Basin gradient
	sq km	sq mi	acres	(km)	(mi)	
Bundick Creek						
Southern LUA boundary:	77.3	29.8	19094	20.1	50	0.0025
North of outlet at site 1:	46.4	17.9	11464	12.2	40	0.0033
North of outlet at site 2:	77.3	29.8	19094	20.1	50	0.0025
North of Lookout road:	44.3	17.1	10945			
Limited Use Area:	31.4	12.1	7748			
Privately owned land within Limited Use Area:	5.7	2.2	1406			
Net Limited Use Area:	25.7	9.9	6342			
Drakes Creek						
North of southern LUA boundary:	127.9	49.4	31606	24.9	60	0.0024
North of outlet at site 3:	37.9	14.6	9365	11.0	45	0.0041
North of outlet at site 4:	55.5	21.4	13707	16.0	50	0.0031
North of outlet at site 5:	84.7	32.7	20935	19.7	55	0.0028
North of Lookout road:	39.0	15.0	9629			
Limited Use Area:	89.0	34.3	21980			
Privately owned land within Limited Use Area:	15.5	6.0	3827			
Net Limited Use Area:	73.5	28.4	18153			
Whiskey Chitto Creek						
North of southern LUA boundary:	157.7	60.9	38963	28.4	65	0.0023
North of outlet at site 6:	74.2	28.7	18341	20.6	56	0.0027
North of outlet at site 7:	145.3	56.1	35901	25.6	59	0.0023
North of outlet at site 8:	150.8	58.2	37253	26.3	62	0.0024
North of Lookout road:	73.6	28.4	18177			
EOD Range:	0.8	0.3	188			
Limited Use Area:	21.8	8.4	5378			
Privately owned land within Limited Use Area:	8.3	3.2	2050			
Net Limited Use Area:	13.5	5.2	3327			
Birds Creek						
North of southern LUA boundary:	61.5	23.7	15195	20.0	80	0.0040
North of outlet at site 9:	56.5	21.8	13955	18.4	77	0.0042
North of Lookout road:	56.5	21.8	13961			
Limited Use Area:	5.6	2.2	1391			
Privately owned land within Limited Use Area:	0.9	0.3	212			
Net Limited Use Area:	4.8	1.8	1180			
Little Sixmile Creek						
North of southern LUA boundary:	20.7	8.0	5109	7.1	42	0.0059
North of outlet at site 10:	13.5	5.2	3324	6.0	40	0.0066
Limited Use Area:	20.7	8.0	5115			
Privately owned land within Limited Use Area:	1.2	0.5	297			
Net Limited Use Area:	19.5	7.5	4818			

Table 2. Basin areas, lengths, elevations, and gradients for Bundick Creek, Drakes Creek, Whiskey Chitto Creek, Birds Creek, Little Sixmile Creek, and West and East Fork of Sixmile Creek in the Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Basin	Area			Basin length along creek	Elevation difference	Basin gradient
	sq km	sq mi	acres	(km)	(mi)	
Sixmile Creek (including Little Sixmile Creek)						
Total area from southern LUA boundary:	152.8	59.0	37750			
West Fork of Sixmile Creek						
North of southern LUA boundary:	68.4	26.4	16909	23.5	63	0.0027
North of outlet at site 11:	48.8	18.8	12053	15.1	55	0.0036
North of outlet at site 12:	62.8	24.2	15512	19.9	60	0.0030
North of Lookout road:	47.9	18.5	11834			
Limited Use Area:	22.0	8.5	5439			
Privately owned land within Limited Use Area:	4.7	1.8	1157			
Net Limited Use Area:	17.3	6.7	4281			
East Fork of Sixmile Creek						
North of southern LUA boundary:	60.3	23.3	14903	16.9	63	0.0037
North of outlet at site 13:	51.4	19.8	12700	12.6	55	0.0044
North of outlet at site 14:	59.2	22.9	14628	15.8	60	0.0038
Area north of Lookout road:	51.3	19.8	12677			
Limited Use Area:	8.7	3.4	2146			
Privately owned land within Limited Use Area:	1.4	0.5	346			
Net Limited Use Area:	7.3	2.8	1800			
Southeast corner of the Limited Use Area not covered by sampling grid						
Limited Use Area:	22.5	8.7	5553			
Privately owned land within Limited Use Area:	2.3	0.9	562			
Net Limited Use Area:	19.1	7.4	4732			
Southwest corner of the Limited Use Area not covered by sampling grid						
Limited Use Area:	6.5	2.5	1602			
Privately owned land within Limited Use Area:	3.3	1.3	821			
Net Limited Use Area:	3.2	1.2	781			

Summary:

Total area represented by the sampling grid in the Environmental Assessment sampling: 133575 acres

Total Area represented by the sampling grid above Lookout Road (Fort Polk Military Reservation): 77224 acres

Total area represented by sampling grid within the Limited Use Area: 56351 acres

Privately owned land within Limited Use Area: 10679 acres

Net Limited Use Area available to Fort Polk: 45414 acres

Table 3. Map symbol, name, and description of soils within the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Map symbol	Soil name and description
BaB	Beauregard fine sandy loam, 1 to 3 percent slopes This moderately well drained, very gently sloping soil is on broad areas on uplands. It is loamy throughout. Runoff is slow, and water and air move slowly through the subsoil. The soil is wet for long periods because of slow runoff and a seasonal high water table.
BaC	Beauregard fine sandy loam, 3 to 5 percent slopes This moderately well drained, very gently sloping to gently sloping soil is on uplands. It is loamy throughout and has plinthite in the lower part of the subsoil. Natural fertility is low. Runoff is medium, and water and air move moderately slowly through the soil.
BEE	Betis loamy fine sand, 5 to 12 percent slopes This somewhat excessively drained, strongly sloping to steep, sandy soil is on uplands. It has a very low available water capacity and very low natural fertility. Runoff is slow. Water moves rapidly through the soil.
BeC	Betis loamy fine sand, 1 to 5 percent slopes This somewhat excessively drained, very gently sloping or gently sloping, sandy soil is on uplands. It has a very low available water capacity and very low natural fertility. Runoff is slow. Water moves rapidly through the soil.
BoB	Boykin loamy fine sand, 1 to 3 percent slopes This well drained, gently sloping soil is on uplands. It has thick sandy surface and subsurface layers and a loamy subsoil. Natural fertility is low. Runoff is slow. Water and air move rapidly through the sandy surface and subsurface layers, and they move at a moderate rate through the loamy subsoil. The available water capacity is low.
BoD	Boykin loamy fine sand, 3 to 8 percent slopes This is a well drained, strongly sloping to moderately steep soil on uplands. It has thick sandy surface and subsurface layers and a loamy subsoil. The soil has low fertility and a low or moderate available water capacity. Permeability is rapid in the upper part of the soil and moderate in the lower part. Surface runoff is medium.
BRE	Briley loamy fine sand, 5 to 12 percent slopes This is a well drained, strongly sloping to moderately steep soil on uplands. It has thick sandy surface and subsurface layers and a loamy subsoil. The soil has low fertility and a low or moderate available water capacity. Permeability is rapid in the upper part of the soil and moderate in the lower part. Surface runoff is medium.

Table 3. Map symbol, name, and description of soils within the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Map symbol	Soil name and description
BrC	Briley loamy fine sand, 1 to 5 percent slopes This well drained, gently sloping soil is on uplands. It has thick sandy surface and subsurface layers and a loamy subsoil. Natural fertility is low. Runoff is slow. Water and air move rapidly through the sandy surface and subsurface layers, and they move at a moderate rate throughout the loamy subsoil. The available water capacity is low.
CaA	Caddo silt loam, 0 to 1 percent slopes This poorly drained, level soil is on low, broad flats on uplands. Runoff is slow, and water and air move slowly through the soil. The soil is wet for long periods. A seasonal high water table is near the surface in winter and spring. The soil is loamy throughout. It is acid throughout and has low fertility.
ChB	Cahaba fine sandy loam, 1 to 3 percent slopes This well drained, very gently sloping or gently sloping soil is on low stream terraces. It is loamy throughout, or it has a sandy surface layer and a loamy subsoil. Runoff is medium. Water and air move at a moderate rate through the subsoil. The soil dries quickly after rains. Plants are damaged by a lack of moisture during dry periods in summer and fall.
EAE	Eastwood silt loam, 5 to 12 percent slopes This moderately well drained, moderately sloping to strongly sloping soil is on side slopes on uplands. It has a loamy surface layer and a clayey subsoil. Runoff is rapid. Water and air move slowly or very slowly through the subsoil. The soil is acid throughout and has low fertility. The subsoil has a high shrink-swell potential. In places, the soil is moderately eroded.
EaC	Eastwood silt loam, 1 to 5 percent slopes This moderately well drained, gently sloping soil is on ridgetops on uplands. It has a loamy surface layer and a clayey subsoil. Runoff is medium. Water and air move slowly or very slowly through the subsoil. The soil is acid throughout and has low fertility. The soil has a high shrink-swell potential. In places, the soil is moderately eroded.
GOE	Gore very fine sandy loam, 5 to 12 percent slopes This moderately well drained, moderately sloping to strongly sloping soil is on side slopes on uplands. It has a loamy surface layer and a clayey subsoil. The soil is acid throughout and has low fertility. Runoff is rapid, and water moves very slowly through the subsoil. The subsoil has a very high shrink-swell potential. In places, the soil is moderately eroded.

Table 3. Map symbol, name, and description of soils within the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Map symbol	Soil name and description
GoC	Gore very fine sandy loam, 1 to 5 percent slopes This moderately well drained, very gently sloping to gently sloping soil is on uplands. It has a loamy surface layer and a clayey subsoil. The soil is acid throughout and has low fertility. Runoff is medium, and water moves very slowly through the subsoil. The shrink-swell potential is high or very high in the subsoil. In places, the soil is moderately eroded.
GuA	Guyton silt loam, occasionally flooded This level, poorly drained soil is in depressional areas. It is occasionally flooded, ponded, or otherwise saturated for long periods in winter and spring. The soil is acid and loamy throughout. Natural fertility is low. Permeability is slow or very slow. Runoff is very slow to ponded. The shrink-swell potential is low.
GYA	Guyton - Iuka complex, frequently flooded These level soils are on narrow flood plains. They are subject to frequent flooding. The poorly drained Guyton soil is in low areas. The moderately well drained Iuka soil is on ridges and natural levees. The Guyton soil is loamy throughout. It has low permeability. The Iuda soil has a loamy surface layer and a sandy and loamy underlying material. Both soils have a seasonal high water table in winter and spring. Natural fertility is low.
HoC	Hornbeck clay, 1 to 5 percent slopes This gently sloping, moderately well drained soil is on uplands. It has a black, loamy surface layer and a clayey underlying material. The underlying material is alkaline and contains accumulations of lime. Natural fertility is high. Surface runoff is medium. Permeability is very slow. The shrink-swell potential is high.
HoD	Hornbeck clay, 5 to 8 percent slopes This moderately sloping, moderately well drained soil is on side slopes on uplands. The soil is clayey throughout. It has an alkaline subsoil that contains accumulations of lime. Natural fertility is high. Water and air move through the soil at a very slow rate. Surface runoff is medium. The shrink-swell potential in the subsoil is high.
KcB	Kirbyville - Niwana complex This complex consists of areas of very gently sloping Kirbyville and Niwana soils on uplands. The Kirbyville soil is on ridgetops and side slopes. It is somewhat poorly drained. The Niwana soil is on circular mounds. It is moderately well drained. Both soils are loamy throughout. Natural fertility is low. Permeability is moderate. The soils have a seasonal high water table in winter and spring.
MaB	Malbis fine sandy loam, 1 to 3 percent slopes This moderately well drained, very gently sloping to gently sloping soil is on uplands. It is loamy throughout and has plinthite in the lower part of the subsoil. Natural fertility is low. Runoff is medium, and water and air move moderately slowly through the soil.

Table 3. Map symbol, name, and description of soils within the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Map symbol	Soil name and description
MaC	Malbis fine sandy loam, 3 to 5 percent slopes This moderately well drained, very gently sloping to gently sloping soil is on uplands. It is loamy throughout and has plinthite in the lower part of the subsoil. Natural fertility is low. Runoff is medium, and water and air move moderately slowly through the soil.
OsB	Osier loamy fine sand, 0 to 2 percent slopes These poorly drained, nearly level to moderately sloping soils are on footslopes adjacent to drainageways on uplands. They have a thick, sandy surface layer and a loamy subsoil, or they are sandy throughout. The soils are acid throughout and have low fertility. Runoff is medium. Water seeps to the surface most of the year.
Pg	Pits This map unit consists of open excavations from which sand and gravel have been removed. The areas range from gently sloping to steeply sloping. They generally are barren of vegetation.
RuB	Ruston fine sandy loam, 1 to 3 percent slopes This well drained, very gently sloping to gently sloping soil is on uplands. It is loamy and acid throughout. Natural fertility is low. Runoff is medium. Water and air move through the soil at a moderate rate. Plant roots penetrate this soil easily. The soil dries quickly after rains. In places, the soil is moderately eroded.
RuD	Ruston fine sandy loam, 3 to 8 percent slopes This well drained, gently sloping to moderately sloping soil is on uplands. It is loamy and acid throughout. Natural fertility is low. Runoff is rapid. Movement of air and water through the soil is moderate. Plant roots penetrate this soil easily. In places, the soil is moderately eroded.
SeC	Sawyer very fine sandy loam, 1 to 5 percent slopes This moderately well drained, very gently sloping or gently sloping soil is on terraces. It is loamy in the upper part of the subsoil and clayey in the lower part. Natural fertility is low or moderately low. Runoff is slow to medium. Water and air move slowly or very slowly through the clayey part of the subsoil. A seasonal high water table is perched on the clayey subsoil for long periods in winter and spring. In places, the soil is moderately eroded.
VaC	Vaiden loam, 1 to 5 percent slopes This nearly level, somewhat poorly drained soil is on broad ridgetops on uplands. It has a loamy or clayey surface layer and a clayey subsoil. The soil has low natural fertility. Permeability is very slow. The soil has a seasonal high water table. Surface runoff is slow. The shrink-swell potential is very high in the subsoil.

Table 4. Soil types within watersheds of streams north of the southern boundary of the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana (see table 3 for soil names and descriptions)

STREAM	SOIL SURVEY OF VERNON PARISH SHEET NO.	UPLANDS AND STRONGLY TO MODERATELY SLOPING SOILS	FLOOD PLAINS, FOOTSLOPE, AND TERRACE SOILS
East Fork of Sixmile Creek	32	RuD, BRE, RuB, BrC, BEE, BeC	GYA
	38	BeC, BRE, BrC, RuD, RuB, BEE	GYA, OsB
	39	BRE, BeC, EAE, BEE, RuD, RuB, MaC	GYA, OsB, ChB
	45	RuD, RuB, BRE, BrC, BEE, EAE, MaC,MaB	GYA, ChB, OsB, SeC
	51	RuB, RuD, MaB, BaB, BEE, BRE, MaC, Pg	GYA, ChB, OsB
West Fork of Sixmile Creek	32	RuD, RuB, EAE, BrC, EaC, MaC	-----
	38	BrC, BeC, BEE, RuB, RuD, BRE	GYA, OsB, ChB
	44	BrC, BRE, BeC, BEE, MaB, EAE, RuB, RuD, EaC, BeC, MaC	GYA, OsB, ChB, SeC
	50	MaB, RuD, RuB, BrC, BEE, MaC	GYA, OsB, SeC
	51	RuD, RuB, MaC, MaB, BoD, BEE, BeC	GYA, OsB, ChB
Sixmile Creek	58	MaB, MaC, RuD, RuB, GoC, GOE, KcB	GYA, ChB
Little Sixmile Creek	50	MaB, RuD, MaC, BRE, BEE, BrC, RuB, Pg	GYA, ChB, OsB
	57	MaC, MaB, BoD, RuD, RuB, CaA, BaB	GYA
Birds Creek	31	EAE, EaC, RuB	GYA
	32	EAE, EaC, BrC, BeC, BRE, RuD, RuB, HoC	GYA
	38	BrC, EAE, BRE, BEE, EaC, RuB, RuD	GYA
	44	EaC, BRE, BrC, EAE, RuD, RuB, MaB, BEE, MaC	GYA, ChB, OsB, SeC
	50	MaB, BRE, BrC, RuD, RuB, EAE, MaC, Pg	GYA, ChB, OsB
	57	MaC, MaB, BoD, RuD, RuB	GYA
Whiskey Chitto Creek	31	EAE, EaC, RuB, HoC, RuD, BrC, MaC	GYA, ChB
	37	EAE, EaC, BrC, BRE, HoC, HoD, VaC, RuB, RuD	GYA, ChB, SeC
	38	EAE, BrC, BRE, RuB, EaC	GYA
	43	BrC, BRE, RuB, RuD, EAE, BeC, EaC, MaB, MaC	GYA, ChB, SeC
	44	BRE, BrC, EAE, RuD, RuB, EaC, MaB	GYA, ChB, SeC
	50	BRE, BoD, MaB, BEE, BrC, EAE, RuB, RuD, BeC, MaC, BoB	GYA, ChB, OsB, SeC
	57	MaB, MaC, RuD, RuD, BoD, BoB, BEE, BeC	GYA, OsB, ChB
	63	KcB, MaC, MaB, RuB, GOE, GoC	GYA, ChB
Drakes Creek	37	EAE, EaC, RuB, RuD, VaC, HoC	GYA, SeC
	43	BrC, RuD, RuB, BRE, BEE, EAE, EaC, MaC, MaB, BeC, HoC	GYA, SeC
	49	MaB, MaC, BoB, BrC, BRE, BoD, EAE, RuB, RuD, BaB	GYA, ChB, OsB, SeC
	56	KcB, MaB, BoB, BEE, BoD, MaC, RuD, CaA, BRE, BeC, BEE, RuB	GYA, OsB
	57	MaC, MaB, RuD, RuD, BoD, BoB, BEE, BeC, BaB	GYA, OsB, ChB
	62	KcB, MaB, MaC, RuD, GOE, GoC, CaA, GuA	GYA
	63	MaC, MaB, KcB, GOE,GoC, RuD, RuB, BaC,, BoB	GYA, ChB
Bundick Creek	43	RuB, EAE, RuD, BrC, BRE, MaC, EaC, MaB	GYA
	49	BrC, BRE, RuD, RuB, EAE, EaC, MaB, MaC, BEE, BeC, BoD, BoB, Pg	GYA, ChB, OsB
	56	MaB, MaC, BEE, BoD, RuD, RuB, BeC, BaB, KcB	GYA, ChB, OsB
	62	KcB, MaB, MaC, BEE, GOE, GoC, RuD, BaC, CaA	GYA, OsB

Table 5A. Whiskey Chitto Creek (site 6) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily specific conductance data, November 1996 to February 1997

[Min, minimum; Max, maximum; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Day	Specific conductance, µS/cm											
	November			December			January			February		
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
1	-----	-----	-----	-----	-----	-----	55	73	57	72	77	73
2	-----	-----	-----	-----	-----	-----	54	55	55	71	72	71
3	-----	-----	-----	-----	-----	-----	55	61	60	68	74	73
4	-----	-----	-----	-----	-----	-----	61	65	62	-----	-----	-----
5	102	105	104	87	90	88	63	66	64	-----	-----	-----
6	100	103	102	78	87	82	65	66	66	-----	-----	-----
7	57	108	68	73	78	76	-----	-----	-----	-----	-----	-----
8	61	84	76	72	74	73	-----	-----	-----	-----	-----	-----
9	59	82	74	72	73	72	-----	-----	-----	-----	-----	-----
10	58	72	68	71	73	73	-----	-----	-----	-----	-----	-----
11	73	79	76	71	74	72	-----	-----	-----	-----	-----	-----
12	74	81	78	69	72	70	-----	-----	-----	-----	-----	-----
13	71	78	72	69	72	70	-----	-----	-----	-----	-----	-----
14	69	71	70	65	72	71	-----	-----	-----	-----	-----	-----
15	70	72	71	49	71	70	-----	-----	-----	-----	-----	-----
16	70	72	71	45	126	54	71	88	76	-----	-----	-----
17	64	72	71	62	76	65	68	72	70	-----	-----	-----
18	64	471	226	62	64	62	70	72	71	-----	-----	-----
19	123	222	146	61	63	62	70	72	71	-----	-----	-----
20	109	153	128	60	62	61	72	74	72	-----	-----	-----
21	97	108	104	61	68	65	73	75	74	-----	-----	-----
22	93	112	109	56	61	60	72	75	74	-----	-----	-----
23	96	107	100	57	63	61	75	84	80	-----	-----	-----
24	104	107	106	57	63	60	84	101	97	-----	-----	-----
25	-----	-----	-----	53	56	54	92	99	96	-----	-----	-----
26	-----	-----	-----	54	55	55	82	90	84	-----	-----	-----
27	-----	-----	-----	54	56	55	80	89	88	-----	-----	-----
28	-----	-----	-----	54	56	55	39	228	63	-----	-----	-----
29	-----	-----	-----	45	56	49	62	82	66			
30	-----	-----	-----	48	130	80	66	69	68			
31				64	72	66	69	73	72			

Table 5B. Whiskey Chitto Creek (site 6) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily pH data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	pH values											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	6.41	6.67	6.65	6.41	6.45	6.42
2	-----	-----	-----	-----	-----	-----	6.64	6.70	6.67	6.40	6.52	6.42
3	-----	-----	-----	-----	-----	-----	6.67	6.73	6.69	6.50	6.63	6.53
4	-----	-----	-----	-----	-----	-----	6.67	6.72	6.69	5.73	6.48	5.81
5	7.10	7.15	7.12	7.00	7.06	7.02	6.65	6.73	6.69	5.93	6.56	6.32
6	7.08	7.13	7.10	7.01	7.08	7.03	6.70	6.75	6.72	6.57	6.75	6.70
7	6.56	7.09	6.73	6.98	7.05	7.02	-----	-----	-----	6.64	6.75	6.73
8	6.70	7.03	6.92	7.01	7.09	7.06	-----	-----	-----	6.50	6.63	6.55
9	7.01	7.08	7.04	7.05	7.12	7.08	-----	-----	-----	6.51	6.59	6.57
10	7.01	7.14	7.10	7.05	7.11	7.07	-----	-----	-----	6.40	6.51	6.46
11	7.13	7.21	7.17	7.00	7.07	7.04	-----	-----	-----	6.32	6.40	6.36
12	7.11	7.17	7.16	6.95	7.02	6.98	-----	-----	-----	5.99	6.32	6.25
13	7.07	7.13	7.11	6.92	7.02	6.96	-----	-----	-----	5.86	5.98	5.88
14	7.08	7.14	7.12	6.88	7.06	6.95	-----	-----	-----	5.89	6.31	6.07
15	7.11	7.21	7.16	6.54	6.98	6.93	-----	-----	-----	5.63	5.91	5.73
16	7.13	7.17	7.15	6.22	6.77	6.47	6.73	6.82	6.76	5.48	5.63	5.54
17	6.98	7.13	7.06	5.96	6.19	6.08	6.73	6.79	6.76	5.38	5.48	5.43
18	6.98	7.34	7.03	6.09	6.40	6.28	6.77	6.86	6.83	5.33	5.37	5.35
19	6.95	7.05	6.98	6.40	6.50	6.45	6.85	6.92	6.87	-----	-----	-----
20	6.91	6.96	6.92	6.40	6.52	6.44	6.86	6.92	6.89	-----	-----	-----
21	6.89	6.96	6.92	6.42	6.51	6.47	6.86	6.89	6.88	-----	-----	-----
22	6.92	7.02	6.98	6.48	6.56	6.53	6.87	6.92	6.91	-----	-----	-----
23	7.01	7.07	7.05	6.55	6.67	6.62	6.91	6.96	6.92	-----	-----	-----
24	7.01	7.06	7.02	6.65	6.76	6.73	6.95	7.03	6.98	-----	-----	-----
25	-----	-----	-----	6.76	6.84	6.82	6.92	6.98	6.96	-----	-----	-----
26	-----	-----	-----	6.79	6.82	6.82	6.87	6.92	6.90	-----	-----	-----
27	-----	-----	-----	6.73	6.80	6.77	6.87	6.95	6.89	-----	-----	-----
28	-----	-----	-----	6.73	6.82	6.77	6.15	6.71	6.36	-----	-----	-----
29	-----	-----	-----	6.56	6.82	6.66	6.20	6.26	6.24			
30	-----	-----	-----	6.62	6.98	6.78	6.21	6.31	6.23			
31				6.63	6.73	6.67	6.32	6.42	6.34			

Table 5C. Whiskey Chitto Creek (site 6) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily water temperature data, November 1996 to February 1997

[Min, minimum; Max, maximum]
Water temperature, degrees Celsius

Day	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	16.11	16.99	16.40	10.16	13.26	11.30
2	-----	-----	-----	-----	-----	-----	16.87	17.84	17.20	13.34	15.94	14.37
3	-----	-----	-----	-----	-----	-----	17.76	18.77	18.03	15.84	17.03	16.16
4	-----	-----	-----	-----	-----	-----	18.58	19.42	18.80	16.69	17.03	16.89
5	15.81	15.94	15.93	12.60	13.05	12.90	17.10	19.27	18.10	14.56	16.69	15.09
6	15.74	17.29	16.20	12.29	14.69	13.14	14.97	16.91	15.85	12.97	14.46	13.41
7	17.36	18.45	17.94	14.57	15.57	15.04	-----	-----	-----	11.84	12.92	12.54
8	14.41	17.20	15.24	12.03	14.35	12.60	-----	-----	-----	10.91	11.76	11.04
9	12.37	14.22	12.91	10.31	11.87	11.29	-----	-----	-----	10.89	11.13	10.99
10	11.74	13.01	12.42	11.13	13.71	12.00	-----	-----	-----	10.86	11.11	11.02
11	11.84	13.34	12.65	13.78	16.70	15.33	-----	-----	-----	10.67	11.40	11.01
12	12.79	14.15	13.31	16.74	18.18	17.50	-----	-----	-----	9.80	11.45	11.17
13	13.21	14.39	13.96	16.37	17.66	16.99	-----	-----	-----	9.64	10.42	9.86
14	13.03	14.26	13.90	16.05	17.18	16.59	-----	-----	-----	10.46	11.96	10.98
15	13.30	14.90	14.01	15.82	16.82	16.51	-----	-----	-----	12.04	13.33	12.81
16	14.93	15.91	15.35	11.24	15.64	13.46	6.18	6.33	6.29	13.37	13.93	13.70
17	15.93	17.05	16.51	10.22	11.18	10.43	5.04	6.11	5.49	13.95	14.20	14.04
18	16.87	18.28	17.46	8.16	10.37	9.27	4.21	5.40	5.02	14.21	14.24	14.22
19	17.80	18.12	17.96	6.00	8.01	6.62	4.48	6.72	5.15	-----	-----	-----
20	17.72	18.62	17.89	4.61	5.86	5.38	6.39	8.29	6.88	-----	-----	-----
21	18.59	19.44	18.84	5.58	8.33	6.25	8.37	10.54	9.11	-----	-----	-----
22	16.64	19.19	17.55	8.47	11.47	9.95	10.65	13.72	12.28	-----	-----	-----
23	15.28	16.58	16.02	11.56	14.10	12.61	13.49	14.77	13.94	-----	-----	-----
24	16.62	17.55	16.87	11.69	14.32	13.30	14.82	16.49	15.61	-----	-----	-----
25	-----	-----	-----	9.39	11.42	9.73	13.25	15.72	14.33	-----	-----	-----
26	-----	-----	-----	9.39	10.57	9.62	11.21	13.09	12.40	-----	-----	-----
27	-----	-----	-----	10.65	12.99	11.67	13.15	15.51	14.20	-----	-----	-----
28	-----	-----	-----	13.03	15.15	13.88	11.58	15.34	13.01	-----	-----	-----
29	-----	-----	-----	15.21	16.40	15.71	9.43	11.39	9.75			
30	-----	-----	-----	16.30	16.72	16.50	8.76	9.86	9.32			
31				15.62	16.52	16.22	8.06	10.13	9.11			

Table 6A. Birds Creek (site 9) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily specific conductance data, November 1996 to February 1997

[Min, minimum; Max, maximum; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Day	Specific conductance, µS/cm											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	29	30	30	37	39	38
2	-----	-----	-----	-----	-----	-----	30	30	30	38	39	38
3	-----	-----	-----	-----	-----	-----	29	30	30	38	40	39
4	-----	-----	-----	-----	-----	-----	29	30	30	26	37	28
5	32	33	33	24	26	25	28	30	29	31	34	32
6	32	33	32	24	26	25	28	30	29	33	36	34
7	22	33	27	25	26	26	-----	-----	-----	32	36	36
8	27	29	28	25	26	26	-----	-----	-----	30	34	33
9	28	30	29	24	26	25	-----	-----	-----	34	35	34
10	29	30	29	24	25	24	-----	-----	-----	35	37	35
11	29	30	29	24	25	25	-----	-----	-----	35	37	36
12	29	30	29	24	25	24	-----	-----	-----	21	36	35
13	29	30	30	24	25	24	-----	-----	-----	18	22	20
14	29	30	30	24	25	25	-----	-----	-----	22	28	27
15	29	30	30	21	25	24	-----	-----	-----	28	31	29
16	29	30	30	22	26	24	34	37	35	30	31	31
17	30	31	31	24	27	26	33	35	35	31	32	32
18	29	32	30	27	28	27	34	36	35	31	32	31
19	32	32	32	27	28	28	35	36	36	-----	-----	-----
20	32	33	33	27	28	28	35	36	35	-----	-----	-----
21	31	33	31	27	28	28	35	36	36	-----	-----	-----
22	31	32	31	27	28	27	35	36	35	-----	-----	-----
23	32	33	33	27	28	27	35	36	36	-----	-----	-----
24	29	34	33	27	28	27	35	36	36	-----	-----	-----
25	-----	-----	-----	26	27	27	36	37	37	-----	-----	-----
26	-----	-----	-----	26	28	27	37	38	37	-----	-----	-----
27	-----	-----	-----	26	28	27	36	38	38	-----	-----	-----
28	-----	-----	-----	26	28	27	32	37	35	-----	-----	-----
29	-----	-----	-----	26	28	27	36	38	37			
30	-----	-----	-----	27	31	29	36	39	37			
31				28	30	29	37	38	37			

Table 6B. Birds Creek (site 9) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily pH data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	pH values											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	6.40	6.46	6.42	6.33	6.37	6.35
2	-----	-----	-----	-----	-----	-----	6.37	6.41	6.39	6.35	6.38	6.37
3	-----	-----	-----	-----	-----	-----	6.39	6.41	6.40	6.37	6.42	6.38
4	-----	-----	-----	-----	-----	-----	6.38	6.42	6.40	5.51	6.27	5.61
5	6.76	6.80	6.79	6.70	6.72	6.70	6.38	6.42	6.41	5.63	6.00	5.88
6	6.76	6.79	6.79	6.67	6.71	6.70	6.37	6.41	6.38	6.00	6.16	6.09
7	5.88	6.77	6.28	6.67	6.70	6.67	-----	-----	-----	5.86	6.19	6.16
8	6.29	6.48	6.40	6.70	6.72	6.71	-----	-----	-----	5.85	6.17	6.07
9	6.48	6.61	6.57	6.69	6.72	6.71	-----	-----	-----	6.07	6.17	6.12
10	6.61	6.66	6.64	6.66	6.69	6.67	-----	-----	-----	6.18	6.25	6.22
11	6.66	6.67	6.67	6.61	6.66	6.64	-----	-----	-----	6.25	6.29	6.27
12	6.66	6.67	6.67	6.59	6.62	6.61	-----	-----	-----	5.31	6.30	6.06
13	6.65	6.66	6.66	6.59	6.62	6.60	-----	-----	-----	5.31	5.70	5.58
14	6.61	6.66	6.65	6.61	6.64	6.63	-----	-----	-----	5.70	5.97	5.86
15	6.59	6.62	6.61	6.25	6.63	6.62	-----	-----	-----	5.98	6.11	6.06
16	6.54	6.63	6.58	5.86	6.30	5.93	6.40	6.62	6.46	6.11	6.16	6.14
17	6.59	6.66	6.64	5.76	5.92	5.81	6.38	6.44	6.39	6.17	6.22	6.20
18	6.56	6.60	6.58	5.95	6.15	6.07	6.41	6.48	6.45	6.22	6.27	6.25
19	6.55	6.59	6.56	6.17	6.28	6.24	6.48	6.51	6.50	-----	-----	-----
20	6.50	6.56	6.54	6.29	6.36	6.33	6.51	6.60	6.59	-----	-----	-----
21	6.55	6.63	6.60	6.35	6.38	6.37	6.57	6.59	6.57	-----	-----	-----
22	6.60	6.65	6.64	6.35	6.39	6.37	6.54	6.58	6.57	-----	-----	-----
23	6.64	6.70	6.68	6.36	6.38	6.37	6.51	6.56	6.54	-----	-----	-----
24	6.35	6.69	6.67	6.35	6.40	6.37	6.52	6.56	6.54	-----	-----	-----
25	-----	-----	-----	6.36	6.44	6.41	6.54	6.60	6.58	-----	-----	-----
26	-----	-----	-----	6.42	6.46	6.44	6.60	6.61	6.60	-----	-----	-----
27	-----	-----	-----	6.38	6.42	6.41	6.57	6.61	6.60	-----	-----	-----
28	-----	-----	-----	6.38	6.45	6.42	5.75	6.54	5.91	-----	-----	-----
29	-----	-----	-----	6.09	6.42	6.27	5.90	6.12	6.02			
30	-----	-----	-----	6.20	6.33	6.28	6.13	6.26	6.20			
31				6.34	6.42	6.39	6.26	6.33	6.30			

Table 6C. Birds Creek (site 9) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily water temperature data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Water temperature, degrees Celsius

Day	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	15.85	16.82	16.21	9.87	13.22	11.12
2	-----	-----	-----	-----	-----	-----	16.70	17.75	17.06	13.29	15.99	14.34
3	-----	-----	-----	-----	-----	-----	17.62	18.72	17.99	15.81	17.12	16.22
4	-----	-----	-----	-----	-----	-----	18.52	19.41	18.83	16.61	17.50	16.92
5	15.75	15.92	15.85	12.43	13.14	12.91	17.00	19.24	18.08	13.47	16.50	14.33
6	15.74	17.33	16.58	12.24	14.56	12.99	14.93	16.85	15.77	11.55	13.30	12.12
7	17.41	18.54	18.21	14.24	15.54	14.93	-----	-----	-----	10.17	11.47	11.07
8	14.53	17.39	15.53	11.80	14.07	12.65	-----	-----	-----	9.45	10.08	9.65
9	12.29	14.31	12.87	10.35	11.68	11.26	-----	-----	-----	8.93	9.47	9.29
10	11.73	12.93	12.47	11.07	13.60	12.16	-----	-----	-----	8.84	9.37	9.18
11	11.85	13.22	12.64	13.67	16.41	15.35	-----	-----	-----	8.64	10.14	9.19
12	13.04	14.10	13.41	16.45	18.09	17.38	-----	-----	-----	8.82	10.02	9.56
13	13.42	14.43	13.84	16.32	17.36	16.91	-----	-----	-----	8.66	9.68	8.94
14	13.12	14.30	13.78	16.14	17.37	16.59	-----	-----	-----	9.30	9.63	9.52
15	13.54	14.90	14.06	15.75	16.97	16.49	-----	-----	-----	8.22	9.89	9.06
16	14.79	15.94	15.59	11.11	15.72	13.33	5.99	6.12	6.10	8.59	10.45	9.49
17	15.96	17.10	16.71	9.93	10.91	10.35	4.88	5.92	5.37	9.43	11.37	10.26
18	16.82	17.58	17.12	7.83	10.33	9.12	3.86	5.20	4.79	10.18	11.01	10.52
19	17.41	17.94	17.61	5.62	7.64	6.35	4.25	6.67	4.92	-----	-----	-----
20	17.67	18.62	17.89	4.16	5.46	5.07	6.18	8.27	6.76	-----	-----	-----
21	18.53	19.39	18.85	5.27	8.47	6.07	8.32	10.39	8.93	-----	-----	-----
22	16.22	18.95	17.31	8.59	11.52	9.94	10.52	13.41	12.02	-----	-----	-----
23	15.42	16.61	16.00	11.61	14.13	12.64	13.32	14.67	13.73	-----	-----	-----
24	16.66	18.42	17.67	11.66	14.32	13.27	14.69	16.26	15.26	-----	-----	-----
25	-----	-----	-----	9.16	11.41	9.62	13.09	15.59	14.21	-----	-----	-----
26	-----	-----	-----	9.22	10.47	9.50	11.08	12.90	12.37	-----	-----	-----
27	-----	-----	-----	10.56	12.83	11.63	12.99	15.24	13.98	-----	-----	-----
28	-----	-----	-----	12.88	15.00	13.74	10.86	15.19	12.63	-----	-----	-----
29	-----	-----	-----	15.06	16.29	15.62	9.00	10.72	9.27			
30	-----	-----	-----	16.19	16.55	16.34	8.39	9.68	8.94			
31				15.33	16.28	16.02	7.81	9.96	8.93			

Table 7A. Whiskey Chitto Creek (site 7) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily specific conductance data, November 1996 to February 1997

[Min, minimum; Max, maximum; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Day	Specific conductance, µS/cm											
	November			December			January			February		
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
1	-----	-----	-----	-----	-----	-----	63	70	67	57	59	58
2	-----	-----	-----	-----	-----	-----	65	67	66	58	65	60
3	-----	-----	-----	-----	-----	-----	62	67	64	65	75	70
4	-----	-----	-----	-----	-----	-----	65	103	87	76	86	80
5	-----	-----	-----	-----	-----	-----	97	112	105	80	98	92
6	43	57	49	57	66	60	85	97	90	93	95	94
7	20	42	37	52	57	54	-----	-----	-----	94	102	95
8	20	24	21	49	52	50	-----	-----	-----	102	116	113
9	25	28	27	47	49	49	-----	-----	-----	102	119	116
10	27	30	29	44	47	46	-----	-----	-----	93	101	96
11	27	32	30	43	45	44	-----	-----	-----	85	93	88
12	32	35	33	44	46	45	-----	-----	-----	83	99	85
13	33	36	34	43	46	44	-----	-----	-----	74	99	88
14	32	35	33	44	47	45	-----	-----	-----	73	82	78
15	31	32	32	45	47	46	-----	-----	-----	83	89	87
16	32	34	34	31	142	42	45	78	55	81	84	81
17	33	36	35	51	95	60	30	41	32	79	80	79
18	35	69	38	51	57	55	30	39	36	78	79	78
19	81	110	104	55	58	56	37	43	43	-----	-----	-----
20	82	96	87	55	58	57	43	44	43	-----	-----	-----
21	62	87	70	54	57	56	39	43	41	-----	-----	-----
22	56	62	58	55	60	59	38	40	39	-----	-----	-----
23	54	57	55	57	58	57	39	41	40	-----	-----	-----
24	44	54	52	58	60	59	34	40	36	-----	-----	-----
25	28	44	31	57	60	59	36	39	37	-----	-----	-----
26	30	54	37	59	61	59	35	39	37	-----	-----	-----
27	45	97	68	56	59	58	35	42	37	-----	-----	-----
28	37	44	39	56	58	57	26	49	32	-----	-----	-----
29	36	38	37	48	57	56	41	49	44			
30	30	36	34	46	102	58	49	53	51			
31				68	106	75	53	57	55			

Table 7B. Whiskey Chitto Creek (site 7) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily pH data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	pH values											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	6.06	6.27	6.19	6.56	6.92	6.77
2	-----	-----	-----	-----	-----	-----	6.03	6.53	6.32	6.66	7.12	6.85
3	-----	-----	-----	-----	-----	-----	6.46	6.70	6.63	6.75	7.22	7.05
4	-----	-----	-----	-----	-----	-----	6.32	6.51	6.42	6.86	7.12	6.99
5	-----	-----	-----	-----	-----	-----	5.82	6.44	6.04	6.90	7.20	7.02
6	7.03	7.09	7.05	6.82	6.86	6.85	5.90	6.29	6.19	6.91	7.30	7.05
7	6.71	7.11	7.06	6.82	6.87	6.84	-----	-----	-----	6.90	7.19	7.03
8	6.57	7.00	6.81	6.84	6.91	6.88	-----	-----	-----	6.85	7.44	7.04
9	7.01	7.19	7.15	6.88	6.92	6.90	-----	-----	-----	6.76	7.09	6.90
10	7.17	7.22	7.21	6.87	6.92	6.89	-----	-----	-----	6.94	7.19	7.10
11	7.02	7.27	7.25	6.87	6.94	6.89	-----	-----	-----	6.90	7.32	7.12
12	6.98	7.32	7.29	6.84	6.92	6.87	-----	-----	-----	6.94	7.31	7.14
13	6.78	7.17	6.85	6.67	6.90	6.83	-----	-----	-----	6.94	7.30	7.07
14	6.84	7.15	7.09	6.46	6.76	6.54	-----	-----	-----	6.83	7.28	7.06
15	7.13	7.17	7.16	6.51	6.64	6.55	-----	-----	-----	6.92	7.44	7.12
16	7.06	7.13	7.10	6.17	6.58	6.37	6.30	6.98	6.63	6.84	7.37	7.11
17	6.84	7.13	7.02	5.67	6.28	5.92	6.14	6.69	6.40	6.97	7.31	7.16
18	6.77	6.92	6.85	5.70	6.10	5.96	6.18	6.51	6.35	6.98	7.44	7.14
19	6.89	7.21	7.12	6.12	6.32	6.25	6.23	6.56	6.43	-----	-----	-----
20	6.85	7.19	7.04	6.32	6.39	6.36	6.32	6.83	6.44	-----	-----	-----
21	6.46	7.07	7.03	6.38	6.41	6.40	6.36	6.66	6.45	-----	-----	-----
22	7.04	7.12	7.08	6.40	6.46	6.42	6.55	7.02	6.77	-----	-----	-----
23	7.12	7.17	7.14	6.45	6.50	6.48	6.73	7.17	6.90	-----	-----	-----
24	6.95	7.17	7.14	6.45	6.56	6.53	6.70	7.23	6.89	-----	-----	-----
25	6.66	7.03	6.73	6.54	6.59	6.58	6.56	6.97	6.73	-----	-----	-----
26	6.84	7.50	7.21	6.57	6.62	6.61	6.46	6.91	6.65	-----	-----	-----
27	7.22	7.51	7.35	6.53	6.58	6.56	6.56	6.97	6.80	-----	-----	-----
28	7.08	7.22	7.11	6.54	6.60	6.58	6.73	7.05	6.89	-----	-----	-----
29	6.89	7.07	7.02	6.40	6.59	6.52	6.77	7.08	6.93			
30	6.71	6.98	6.85	6.22	6.54	6.41	6.76	7.13	6.96			
31				6.16	6.28	6.25	6.63	7.10	6.84			

Table 7C. Whiskey Chitto Creek (site 7) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily water temperature data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Water temperature, degrees Celsius

Day	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	15.97	16.92	16.21	11.03	12.61	11.48
2	-----	-----	-----	-----	-----	-----	16.72	17.79	16.95	12.66	14.32	13.29
3	-----	-----	-----	-----	-----	-----	17.55	18.72	17.88	14.37	15.53	14.80
4	-----	-----	-----	-----	-----	-----	18.42	19.33	18.69	15.58	16.52	16.30
5	-----	-----	-----	-----	-----	-----	17.30	19.09	18.22	15.40	16.49	15.84
6	16.16	17.15	17.04	13.01	14.30	14.17	15.50	17.16	16.20	14.26	15.35	14.67
7	17.20	17.97	17.67	13.91	15.33	14.35	-----	-----	-----	13.19	14.22	13.81
8	14.70	17.53	15.98	11.91	13.69	12.68	-----	-----	-----	11.75	13.10	12.07
9	12.69	14.50	13.30	10.16	11.90	11.25	-----	-----	-----	11.74	11.88	11.76
10	11.61	13.14	12.48	10.89	13.56	11.89	-----	-----	-----	11.83	11.90	11.88
11	11.57	13.51	12.35	13.59	16.11	14.84	-----	-----	-----	11.86	12.02	11.91
12	12.58	14.34	13.11	16.12	17.91	16.90	-----	-----	-----	10.97	12.03	11.93
13	12.97	14.52	13.69	15.90	17.12	16.65	-----	-----	-----	10.53	10.92	10.57
14	12.95	14.47	13.69	15.97	17.20	16.38	-----	-----	-----	10.31	10.51	10.38
15	13.35	14.85	13.96	15.92	16.76	16.40	-----	-----	-----	10.47	10.98	10.55
16	14.75	15.60	15.17	12.20	15.75	14.03	5.87	6.12	6.05	11.00	11.42	11.05
17	15.64	16.59	16.16	10.20	11.98	10.44	4.98	5.79	5.46	11.42	11.92	11.48
18	16.52	17.54	16.69	8.40	10.21	9.55	4.10	5.26	4.83	11.88	11.98	11.96
19	17.59	18.00	17.69	6.14	8.22	6.95	4.15	6.20	4.80	-----	-----	-----
20	17.64	18.55	17.87	4.73	5.99	5.56	5.87	7.72	6.45	-----	-----	-----
21	18.29	19.57	18.82	5.37	8.02	6.06	7.73	9.88	8.47	-----	-----	-----
22	16.35	18.80	17.50	8.15	10.84	9.37	9.97	12.95	11.50	-----	-----	-----
23	15.40	16.82	16.10	10.92	13.57	12.10	12.79	14.32	13.46	-----	-----	-----
24	16.79	18.26	17.43	11.74	13.74	13.10	14.35	15.97	15.01	-----	-----	-----
25	13.58	17.05	15.50	9.46	11.51	9.96	13.60	15.28	14.39	-----	-----	-----
26	11.30	13.41	12.14	9.42	10.43	9.65	11.65	13.41	12.73	-----	-----	-----
27	9.93	11.14	10.43	10.51	12.41	11.33	13.00	14.97	13.60	-----	-----	-----
28	9.87	10.68	10.17	12.46	14.69	13.43	12.34	14.96	13.17	-----	-----	-----
29	10.51	12.58	11.13	14.76	16.05	15.31	10.88	12.19	11.12			
30	12.71	15.00	14.01	16.07	16.61	16.40	10.49	10.99	10.77			
31				15.60	16.37	16.14	10.22	11.01	10.64			

Table 8A. West Fork of Sixmile Creek (site 11) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily specific conductance data, November 1996 to February 1997

[Min, minimum; Max, maximum; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Day	Specific conductance, µS/cm											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	20	20	20	23	24	23
2	-----	-----	-----	-----	-----	-----	19	20	20	22	23	23
3	-----	-----	-----	-----	-----	-----	19	19	19	22	23	23
4	-----	-----	-----	-----	-----	-----	19	19	19	22	28	27
5	15	17	17	18	19	18	18	19	18	25	26	25
6	16	17	17	17	18	18	18	19	18	24	26	25
7	17	23	17	17	18	17	-----	-----	-----	24	26	24
8	19	23	20	16	18	17	-----	-----	-----	25	26	25
9	19	20	19	17	17	17	-----	-----	-----	25	26	25
10	18	19	18	16	17	17	-----	-----	-----	24	26	24
11	17	18	18	16	17	16	-----	-----	-----	23	24	24
12	17	18	17	16	17	17	-----	-----	-----	20	24	24
13	17	17	17	17	17	17	-----	-----	-----	18	20	19
14	16	17	17	16	17	17	-----	-----	-----	20	21	20
15	16	16	16	16	19	17	-----	-----	-----	21	22	22
16	15	17	16	19	25	24	24	25	25	21	23	22
17	16	17	16	24	26	25	23	25	24	21	22	22
18	17	19	18	22	25	24	24	25	24	22	22	22
19	18	18	18	20	23	22	22	24	23	-----	-----	-----
20	18	19	18	19	21	21	22	23	23	-----	-----	-----
21	19	19	19	18	20	19	21	22	22	-----	-----	-----
22	18	19	18	18	19	19	21	22	21	-----	-----	-----
23	17	18	18	17	19	18	21	21	21	-----	-----	-----
24	17	18	17	17	19	18	21	22	21	-----	-----	-----
25	-----	-----	-----	17	19	18	21	22	21	-----	-----	-----
26	-----	-----	-----	18	18	18	20	22	21	-----	-----	-----
27	-----	-----	-----	17	19	18	20	21	20	-----	-----	-----
28	-----	-----	-----	17	19	18	22	28	27	-----	-----	-----
29	-----	-----	-----	18	21	19	25	27	27			
30	-----	-----	-----	20	21	21	25	26	26			
31				20	20	20	24	26	24			

Table 8B. West Fork of Sixmile Creek (site 11) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily pH data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	pH values											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	5.72	5.81	5.76	5.66	5.72	5.70
2	-----	-----	-----	-----	-----	-----	5.69	5.84	5.79	5.70	5.78	5.74
3	-----	-----	-----	-----	-----	-----	5.78	5.87	5.83	5.73	5.80	5.77
4	-----	-----	-----	-----	-----	-----	5.83	5.90	5.87	4.85	5.74	5.00
5	6.27	6.31	6.29	6.08	6.10	6.09	5.82	5.97	5.94	4.81	5.13	4.95
6	6.25	6.29	6.28	6.07	6.11	6.10	5.96	5.99	5.97	5.17	5.37	5.29
7	5.33	6.28	6.20	6.08	6.14	6.10	-----	-----	-----	5.13	5.43	5.39
8	5.36	5.71	5.58	6.13	6.17	6.15	-----	-----	-----	5.11	5.25	5.17
9	5.72	5.92	5.82	6.17	6.19	6.18	-----	-----	-----	5.25	5.38	5.32
10	5.92	6.05	5.98	6.13	6.19	6.17	-----	-----	-----	5.37	5.46	5.42
11	6.05	6.11	6.08	6.12	6.17	6.14	-----	-----	-----	5.43	5.54	5.50
12	6.11	6.15	6.13	6.10	6.15	6.13	-----	-----	-----	4.94	5.55	5.42
13	6.15	6.18	6.17	6.09	6.14	6.13	-----	-----	-----	4.73	4.86	4.79
14	6.16	6.20	6.18	6.11	6.16	6.15	-----	-----	-----	4.86	5.16	5.02
15	6.17	6.34	6.21	5.78	6.18	6.16	-----	-----	-----	5.18	5.33	5.28
16	6.30	6.34	6.32	5.14	5.79	5.31	5.71	5.76	5.74	5.33	5.43	5.39
17	6.21	6.31	6.28	5.14	5.18	5.16	5.75	5.86	5.81	5.42	5.50	5.47
18	6.03	6.22	6.07	5.14	5.36	5.24	5.83	5.92	5.89	5.50	5.55	5.53
19	6.07	6.10	6.09	5.35	5.52	5.46	5.92	5.96	5.94	-----	-----	-----
20	6.08	6.11	6.10	5.53	5.65	5.60	5.96	6.00	5.98	-----	-----	-----
21	6.08	6.12	6.09	5.64	5.73	5.69	5.97	6.00	5.99	-----	-----	-----
22	6.08	6.28	6.12	5.70	5.76	5.72	5.96	6.01	5.98	-----	-----	-----
23	6.30	6.31	6.31	5.74	5.79	5.76	5.93	5.99	5.97	-----	-----	-----
24	6.29	6.31	6.30	5.75	5.83	5.80	5.92	5.98	5.96	-----	-----	-----
25	-----	-----	-----	5.84	5.90	5.87	5.96	6.04	6.00	-----	-----	-----
26	-----	-----	-----	5.84	5.92	5.89	6.00	6.07	6.04	-----	-----	-----
27	-----	-----	-----	5.79	5.88	5.83	5.93	6.05	6.02	-----	-----	-----
28	-----	-----	-----	5.80	5.87	5.83	5.11	5.93	5.21	-----	-----	-----
29	-----	-----	-----	5.54	5.87	5.77	5.25	5.40	5.30			
30	-----	-----	-----	5.52	5.64	5.59	5.40	5.55	5.49			
31				5.63	5.74	5.70	5.55	5.67	5.62			

Table 8C. West Fork of Sixmile Creek (site 11) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily temperature data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Water temperature, degrees Celsius

Day	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	15.82	16.68	16.04	9.26	12.58	10.80
2	-----	-----	-----	-----	-----	-----	16.45	17.51	16.73	12.69	15.62	14.06
3	-----	-----	-----	-----	-----	-----	17.32	18.45	17.69	15.51	16.83	15.91
4	-----	-----	-----	-----	-----	-----	18.28	19.22	18.57	16.15	17.20	16.56
5	15.46	15.75	15.68	12.68	13.09	13.00	17.26	19.05	18.10	13.40	15.92	13.95
6	15.75	17.32	16.16	12.37	14.56	13.10	15.02	17.07	15.97	11.39	13.28	11.99
7	17.40	18.53	18.13	14.60	15.56	14.97	-----	-----	-----	9.97	11.32	10.86
8	14.74	17.69	15.68	12.65	14.60	13.21	-----	-----	-----	9.08	9.93	9.47
9	12.87	14.58	13.31	10.82	12.44	11.72	-----	-----	-----	8.64	9.11	8.93
10	12.20	13.08	12.69	11.39	13.72	11.82	-----	-----	-----	8.50	8.95	8.79
11	12.11	13.55	12.69	13.75	16.29	14.70	-----	-----	-----	8.39	9.72	8.91
12	13.25	14.40	13.52	16.36	17.86	16.99	-----	-----	-----	8.87	9.68	9.37
13	13.80	14.71	14.26	16.72	17.64	17.24	-----	-----	-----	8.80	9.58	9.08
14	13.60	14.59	14.22	16.20	17.26	16.77	-----	-----	-----	8.67	9.25	8.93
15	13.79	15.06	14.29	15.87	16.92	16.55	-----	-----	-----	7.90	9.38	8.74
16	15.08	15.99	15.56	10.98	15.72	13.12	5.98	6.18	6.11	8.20	9.86	9.07
17	16.03	17.16	16.63	9.55	10.82	9.68	4.86	5.91	5.31	9.09	10.81	9.71
18	17.16	17.49	17.27	7.63	9.59	8.67	4.01	5.05	4.73	9.87	10.58	10.07
19	17.49	17.95	17.65	5.37	7.48	6.11	4.32	6.28	4.86	-----	-----	-----
20	17.68	18.59	17.91	4.09	5.27	4.91	6.22	8.08	6.69	-----	-----	-----
21	18.53	19.37	18.83	4.95	7.73	5.60	8.15	10.42	9.06	-----	-----	-----
22	17.51	19.08	18.00	7.84	11.22	9.57	10.51	13.47	12.28	-----	-----	-----
23	15.59	16.47	16.24	11.33	14.00	12.53	13.35	14.58	13.78	-----	-----	-----
24	16.67	17.86	17.02	12.17	14.27	13.53	14.60	16.24	15.48	-----	-----	-----
25	-----	-----	-----	9.47	11.91	9.98	13.29	15.54	14.49	-----	-----	-----
26	-----	-----	-----	9.27	10.30	9.42	11.51	13.07	12.43	-----	-----	-----
27	-----	-----	-----	10.37	12.75	11.39	12.82	15.21	13.82	-----	-----	-----
28	-----	-----	-----	12.79	15.02	13.76	10.43	15.12	11.93	-----	-----	-----
29	-----	-----	-----	15.08	16.29	15.66	8.67	10.31	8.81			
30	-----	-----	-----	16.22	16.49	16.31	8.13	9.32	8.63			
31				15.53	16.35	15.98	7.77	9.17	8.70			

Table 9A. East Fork of Sixmile Creek (site 13) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily specific conductance data, November 1996 to February 1997

[Min, minimum; Max, maximum; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Day	Specific conductance, µS/cm											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	20	21	21	9	11	10
2	-----	-----	-----	-----	-----	-----	19	20	20	10	16	11
3	-----	-----	-----	-----	-----	-----	19	20	19	10	11	10
4	-----	-----	-----	-----	-----	-----	19	20	20	9	16	10
5	-----	-----	-----	18	18	18	19	20	19	9	12	11
6	19	20	20	17	19	18	19	20	19	10	11	10
7	17	23	19	18	20	18	-----	-----	-----	10	11	10
8	19	22	20	17	19	19	-----	-----	-----	9	11	10
9	18	20	19	18	20	19	-----	-----	-----	11	11	11
10	17	19	18	18	19	19	-----	-----	-----	11	11	11
11	17	18	18	18	20	19	-----	-----	-----	10	11	11
12	17	18	17	17	18	17	-----	-----	-----	8	11	10
13	16	17	17	17	21	20	-----	-----	-----	5	8	7
14	16	17	17	17	18	18	-----	-----	-----	7	9	8
15	16	18	17	17	20	17	-----	-----	-----	9	10	10
16	18	19	19	18	22	21	20	20	20	9	10	10
17	19	23	20	13	22	14	18	20	19	9	11	10
18	19	24	20	20	21	20	17	19	17	9	11	11
19	23	24	23	18	21	20	17	18	17	-----	-----	-----
20	22	23	23	19	19	19	16	17	16	-----	-----	-----
21	22	22	22	17	19	18	15	17	16	-----	-----	-----
22	21	22	21	17	19	18	16	17	16	-----	-----	-----
23	20	21	20	18	19	19	16	16	16	-----	-----	-----
24	19	23	21	18	19	19	16	17	17	-----	-----	-----
25	22	23	22	18	19	19	16	17	17	-----	-----	-----
26	21	23	22	18	19	19	16	17	17	-----	-----	-----
27	21	22	22	18	19	19	16	17	16	-----	-----	-----
28	20	22	20	18	20	19	10	18	14	-----	-----	-----
29	20	22	21	19	21	20	10	12	11			
30	22	25	23	20	22	21	9	10	10			
31				21	22	21	9	10	10			

Table 9B. East Fork of Sixmile Creek (site 13) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily pH data, November 1996 to February 1997

[Min, minimum; Max, maximum]

pH values

Day	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	5.94	5.99	5.97	5.83	5.89	5.86
2	-----	-----	-----	-----	-----	-----	5.97	6.02	6.00	5.88	5.92	5.90
3	-----	-----	-----	-----	-----	-----	6.00	6.10	6.08	5.89	5.93	5.91
4	-----	-----	-----	-----	-----	-----	6.10	6.15	6.14	4.94	5.80	5.21
5	-----	-----	-----	6.30	6.31	6.30	6.12	6.22	6.19	5.00	5.40	5.19
6	6.44	6.47	6.45	6.31	6.32	6.31	6.20	6.25	6.25	5.41	5.54	5.49
7	5.45	6.46	5.78	6.31	6.34	6.32	-----	-----	-----	5.40	5.59	5.57
8	5.52	5.69	5.61	6.35	6.38	6.37	-----	-----	-----	5.35	5.43	5.40
9	5.71	6.07	5.93	6.37	6.39	6.38	-----	-----	-----	5.41	5.59	5.52
10	6.07	6.20	6.16	6.36	6.39	6.38	-----	-----	-----	5.59	5.67	5.63
11	6.21	6.28	6.26	6.35	6.37	6.36	-----	-----	-----	5.67	5.72	5.70
12	6.29	6.33	6.31	6.34	6.36	6.35	-----	-----	-----	4.78	5.72	5.50
13	6.33	6.38	6.36	6.33	6.35	6.34	-----	-----	-----	4.82	5.20	5.09
14	6.37	6.39	6.38	6.35	6.37	6.36	-----	-----	-----	5.05	5.33	5.24
15	6.32	6.41	6.39	5.82	6.39	6.39	-----	-----	-----	5.33	5.54	5.50
16	6.32	6.35	6.33	5.39	5.76	5.55	5.18	5.74	5.66	5.52	5.59	5.54
17	6.29	6.37	6.35	5.29	5.80	5.68	5.76	5.90	5.86	5.51	5.62	5.58
18	6.19	6.31	6.29	5.41	5.70	5.57	5.89	5.97	5.93	5.61	5.70	5.67
19	6.20	6.24	6.21	5.71	5.86	5.80	5.96	6.00	5.99	-----	-----	-----
20	6.18	6.21	6.20	5.86	5.94	5.90	6.00	6.02	6.01	-----	-----	-----
21	6.22	6.32	6.28	5.94	5.99	5.96	6.01	6.06	6.03	-----	-----	-----
22	6.30	6.37	6.34	6.05	6.07	6.06	6.03	6.08	6.05	-----	-----	-----
23	6.35	6.37	6.36	6.06	6.08	6.07	6.04	6.07	6.05	-----	-----	-----
24	5.60	6.37	6.36	6.07	6.13	6.08	6.03	6.08	6.05	-----	-----	-----
25	5.53	5.81	5.67	6.13	6.16	6.15	6.07	6.13	6.10	-----	-----	-----
26	5.58	5.69	5.61	6.12	6.17	6.16	6.13	6.16	6.14	-----	-----	-----
27	5.63	5.77	5.74	6.07	6.13	6.11	5.85	6.17	6.15	-----	-----	-----
28	5.76	5.80	5.78	6.06	6.11	6.09	5.31	5.74	5.41	-----	-----	-----
29	5.70	5.78	5.73	5.74	6.13	5.83	5.21	5.56	5.37			
30	5.72	5.91	5.81	5.85	5.91	5.89	5.58	5.76	5.69			
31				5.89	5.95	5.92	5.77	5.85	5.83			

Table 9C. East Fork of Sixmile Creek (site 13) in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily water temperature data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	Water temperature, degrees Celsius											
	November			December			January			February		
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
1	-----	-----	-----	-----	-----	-----	15.78	16.52	16.05	9.60	12.33	10.68
2	-----	-----	-----	-----	-----	-----	16.30	17.25	16.70	12.41	15.06	13.71
3	-----	-----	-----	-----	-----	-----	17.16	18.18	17.62	15.09	16.45	15.65
4	-----	-----	-----	-----	-----	-----	18.08	18.99	18.49	16.20	16.94	16.47
5	-----	-----	-----	12.44	13.06	12.89	16.97	18.89	17.96	13.71	16.18	14.71
6	15.80	17.18	16.80	12.16	14.42	13.08	15.10	16.83	15.78	11.63	13.55	12.14
7	17.26	18.35	18.00	14.31	15.29	14.64	-----	-----	-----	10.22	11.55	10.95
8	15.13	17.80	16.19	12.39	14.12	13.12	-----	-----	-----	9.16	10.15	9.42
9	13.26	14.96	13.69	10.85	12.25	11.82	-----	-----	-----	8.81	9.27	9.09
10	12.39	13.45	13.04	11.62	13.71	12.36	-----	-----	-----	8.58	9.11	8.97
11	12.18	13.64	12.94	13.80	16.10	15.06	-----	-----	-----	8.45	9.72	9.00
12	13.18	14.50	13.83	16.15	17.52	16.93	-----	-----	-----	8.93	9.63	9.24
13	13.55	14.72	14.24	16.29	17.22	16.86	-----	-----	-----	8.61	9.47	8.91
14	13.44	14.71	14.23	16.22	17.19	16.66	-----	-----	-----	9.14	9.35	9.23
15	13.78	15.16	14.41	15.78	16.78	16.52	-----	-----	-----	8.17	9.68	8.94
16	15.21	15.96	15.56	11.39	15.55	13.48	6.18	6.37	6.31	8.14	10.15	9.15
17	16.00	16.99	16.63	9.68	11.31	10.20	4.94	6.10	5.48	8.87	10.94	9.84
18	16.95	17.66	17.16	7.81	9.64	8.83	4.26	5.24	4.93	9.68	10.58	10.08
19	17.51	17.89	17.65	5.77	7.66	6.43	4.41	6.26	4.98	-----	-----	-----
20	17.69	18.45	18.00	4.51	5.64	5.27	6.13	7.83	6.66	-----	-----	-----
21	18.37	19.20	18.77	5.32	7.98	6.10	7.87	10.08	8.85	-----	-----	-----
22	16.55	18.72	17.48	8.09	10.88	9.44	10.20	13.10	11.86	-----	-----	-----
23	15.62	16.76	16.27	10.96	13.68	12.19	12.94	14.31	13.51	-----	-----	-----
24	16.82	18.34	17.56	11.73	13.88	13.17	14.38	16.07	15.28	-----	-----	-----
25	13.67	17.72	16.02	9.79	11.54	10.19	13.18	15.32	14.38	-----	-----	-----
26	11.62	13.56	12.31	9.60	10.57	9.89	11.65	13.14	12.75	-----	-----	-----
27	10.42	11.52	10.61	10.64	12.47	11.48	13.18	15.10	13.95	-----	-----	-----
28	10.20	10.70	10.40	12.52	14.72	13.51	10.60	15.10	12.55	-----	-----	-----
29	10.71	12.61	11.24	14.81	16.15	15.54	8.98	10.43	9.21			
30	12.74	15.16	14.11	16.10	16.49	16.28	8.31	9.45	8.93			
31				15.39	16.24	15.90	7.83	9.57	8.79			

Table 10A. Sixmile Creek (site 15) south of the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily specific conductance data, November 1996 to February 1997

[Min, minimum; Max, maximum; µS/cm, microsiemens per centimeter at 25 degrees Celsius]

Day	Specific conductance, µS/cm											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	23	25	24	-----	-----	-----
2	-----	-----	-----	-----	-----	-----	24	25	24	-----	-----	-----
3	-----	-----	-----	-----	-----	-----	24	25	24	-----	-----	-----
4	-----	-----	-----	-----	-----	-----	23	24	24	-----	-----	-----
5	-----	-----	-----	-----	-----	-----	23	24	24	-----	-----	-----
6	26	27	27	22	23	22	23	24	23	-----	-----	-----
7	25	38	27	22	22	22	-----	-----	-----	-----	-----	-----
8	23	31	24	21	22	21	-----	-----	-----	-----	-----	-----
9	24	26	26	21	22	22	-----	-----	-----	-----	-----	-----
10	25	26	26	21	22	21	-----	-----	-----	-----	-----	-----
11	25	27	26	21	22	21	-----	-----	-----	-----	-----	-----
12	25	26	26	21	22	21	-----	-----	-----	-----	-----	-----
13	-----	-----	-----	21	22	21	-----	-----	-----	-----	-----	-----
14	-----	-----	-----	21	22	22	-----	-----	-----	-----	-----	-----
15	-----	-----	-----	21	31	22	-----	-----	-----	-----	-----	-----
16	-----	-----	-----	25	32	27	-----	-----	-----	-----	-----	-----
17	-----	-----	-----	24	26	24	-----	-----	-----	-----	-----	-----
18	-----	-----	-----	22	24	23	-----	-----	-----	-----	-----	-----
19	-----	-----	-----	22	24	23	-----	-----	-----	-----	-----	-----
20	-----	-----	-----	22	23	23	-----	-----	-----	-----	-----	-----
21	-----	-----	-----	22	23	23	-----	-----	-----	-----	-----	-----
22	-----	-----	-----	21	22	22	-----	-----	-----	-----	-----	-----
23	-----	-----	-----	20	22	21	-----	-----	-----	-----	-----	-----
24	-----	-----	-----	20	22	22	-----	-----	-----	-----	-----	-----
25	-----	-----	-----	21	22	21	-----	-----	-----	-----	-----	-----
26	-----	-----	-----	21	22	22	-----	-----	-----	-----	-----	-----
27	-----	-----	-----	21	21	21	-----	-----	-----	-----	-----	-----
28	-----	-----	-----	20	21	21	-----	-----	-----	-----	-----	-----
29	-----	-----	-----	21	26	21	-----	-----	-----			
30	-----	-----	-----	22	26	22	-----	-----	-----			
31				22	24	24	-----	-----	-----			

Table 10B. Sixmile Creek (site 15) south of the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily pH data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	pH values											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	5.66	5.72	5.70	-----	-----	-----
2	-----	-----	-----	-----	-----	-----	5.71	5.78	5.73	-----	-----	-----
3	-----	-----	-----	-----	-----	-----	5.79	5.83	5.82	-----	-----	-----
4	-----	-----	-----	-----	-----	-----	5.82	5.85	5.84	-----	-----	-----
5	-----	-----	-----	-----	-----	-----	5.84	5.90	5.87	-----	-----	-----
6	6.07	6.08	6.07	6.05	6.91	6.06	5.90	5.93	5.92	-----	-----	-----
7	5.75	6.12	6.07	6.06	6.11	6.08	-----	-----	-----	-----	-----	-----
8	5.52	5.77	5.55	6.08	6.12	6.12	-----	-----	-----	-----	-----	-----
9	5.52	5.67	5.58	6.11	6.13	6.12	-----	-----	-----	-----	-----	-----
10	5.67	5.84	5.78	6.10	6.15	6.12	-----	-----	-----	-----	-----	-----
11	5.84	5.90	5.87	6.10	6.11	6.11	-----	-----	-----	-----	-----	-----
12	5.91	5.93	5.91	6.09	6.11	6.10	-----	-----	-----	-----	-----	-----
13	-----	-----	-----	6.09	6.12	6.10	-----	-----	-----	-----	-----	-----
14	-----	-----	-----	6.10	6.14	6.12	-----	-----	-----	-----	-----	-----
15	-----	-----	-----	6.06	6.19	6.15	-----	-----	-----	-----	-----	-----
16	-----	-----	-----	5.47	6.12	5.75	-----	-----	-----	-----	-----	-----
17	-----	-----	-----	5.21	5.46	5.27	-----	-----	-----	-----	-----	-----
18	-----	-----	-----	5.22	5.32	5.25	-----	-----	-----	-----	-----	-----
19	-----	-----	-----	5.33	5.59	5.48	-----	-----	-----	-----	-----	-----
20	-----	-----	-----	5.60	5.73	5.68	-----	-----	-----	-----	-----	-----
21	-----	-----	-----	5.73	5.79	5.77	-----	-----	-----	-----	-----	-----
22	-----	-----	-----	5.77	5.83	5.81	-----	-----	-----	-----	-----	-----
23	-----	-----	-----	5.81	5.85	5.83	-----	-----	-----	-----	-----	-----
24	-----	-----	-----	5.83	5.88	5.85	-----	-----	-----	-----	-----	-----
25	-----	-----	-----	5.86	5.91	5.89	-----	-----	-----	-----	-----	-----
26	-----	-----	-----	5.84	5.91	5.89	-----	-----	-----	-----	-----	-----
27	-----	-----	-----	5.86	5.90	5.88	-----	-----	-----	-----	-----	-----
28	-----	-----	-----	5.86	5.89	5.88	-----	-----	-----	-----	-----	-----
29	-----	-----	-----	5.81	5.90	5.87	-----	-----	-----			
30	-----	-----	-----	5.61	5.82	5.71	-----	-----	-----			
31				5.62	5.67	5.65	-----	-----	-----			

Table 10C. Sixmile Creek (site 15) south of the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana, daily water temperature data, November 1996 to February 1997

[Min, minimum; Max, maximum]

Day	Water temperature, degrees Celsius											
	Min	Max	Median	Min	Max	Median	Min	Max	Median	Min	Max	Median
	November			December			January			February		
1	-----	-----	-----	-----	-----	-----	16.04	16.62	16.22	-----	-----	-----
2	-----	-----	-----	-----	-----	-----	16.55	17.32	16.85	-----	-----	-----
3	-----	-----	-----	-----	-----	-----	17.29	18.18	17.70	-----	-----	-----
4	-----	-----	-----	-----	-----	-----	18.07	18.94	18.51	-----	-----	-----
5	-----	-----	-----	-----	-----	-----	17.72	18.90	18.40	-----	-----	-----
6	16.25	17.09	16.84	13.60	20.02	14.03	16.37	17.61	16.87	-----	-----	-----
7	17.12	17.84	17.60	14.13	15.10	14.46	-----	-----	-----	-----	-----	-----
8	15.91	17.53	16.54	13.03	14.29	13.54	-----	-----	-----	-----	-----	-----
9	14.09	15.85	14.70	11.78	12.92	12.38	-----	-----	-----	-----	-----	-----
10	13.25	14.00	13.66	11.99	13.65	12.54	-----	-----	-----	-----	-----	-----
11	12.94	13.82	13.47	13.68	15.74	14.70	-----	-----	-----	-----	-----	-----
12	13.60	13.80	13.70	15.77	17.19	16.46	-----	-----	-----	-----	-----	-----
13	-----	-----	-----	16.33	17.16	16.79	-----	-----	-----	-----	-----	-----
14	-----	-----	-----	16.29	17.19	16.67	-----	-----	-----	-----	-----	-----
15	-----	-----	-----	16.36	16.85	16.66	-----	-----	-----	-----	-----	-----
16	-----	-----	-----	11.98	16.20	14.06	-----	-----	-----	-----	-----	-----
17	-----	-----	-----	10.40	11.86	10.74	-----	-----	-----	-----	-----	-----
18	-----	-----	-----	8.46	10.42	9.19	-----	-----	-----	-----	-----	-----
19	-----	-----	-----	6.97	8.39	7.62	-----	-----	-----	-----	-----	-----
20	-----	-----	-----	6.05	6.88	6.42	-----	-----	-----	-----	-----	-----
21	-----	-----	-----	6.23	7.95	6.66	-----	-----	-----	-----	-----	-----
22	-----	-----	-----	8.02	10.45	9.22	-----	-----	-----	-----	-----	-----
23	-----	-----	-----	10.52	12.79	11.58	-----	-----	-----	-----	-----	-----
24	-----	-----	-----	12.33	13.08	12.89	-----	-----	-----	-----	-----	-----
25	-----	-----	-----	10.61	12.19	11.00	-----	-----	-----	-----	-----	-----
26	-----	-----	-----	10.30	11.01	10.53	-----	-----	-----	-----	-----	-----
27	-----	-----	-----	11.07	12.44	11.74	-----	-----	-----	-----	-----	-----
28	-----	-----	-----	12.46	14.16	13.21	-----	-----	-----	-----	-----	-----
29	-----	-----	-----	14.20	15.60	14.80	-----	-----	-----			
30	-----	-----	-----	15.65	16.24	16.02	-----	-----	-----			
31				15.84	16.19	16.12	-----	-----	-----			

Table 11. Calcium concentrations, in milligrams per liter (mg/L), for daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Date Collected	Whiskey Chitto, Site 7	Birds Creek, Site 9	Whiskey Chitto, Site 8	West Fork Creek, Site 11	East Fork Creek, Site 13	Sixmile Creek, Site 15	Rainfall, inches
10/21/96	NA	NA	NA	NA	NA	NA	0.00
10/22/96	8.7	2.4	6.8	0.8	1.0	1.0	0.87
10/23/96	10.6	2.1	6.1	0.8	1.0	1.0	0.00
10/24/96	15.2	2.2	7.1	0.8	0.8	1.0	1.69
10/25/96	NA	1.8	8.1	0.9	0.9	1.0	1.03
10/26/96	NA	NA	NA	NA	NA	NA	0.21
10/27/96	NA	NA	NA	NA	NA	NA	0.01
10/28/96	10.4	2.7	6.6	1.2	1.4	1.3	0.00
10/29/96	11.9	3.0	7.2	1.1	1.2	1.4	0.00
10/30/96	13.2	3.2	NA	1.1	1.2	1.3	0.21
10/31/96	12.8	3.1	8.2	1.1	1.2	1.3	0.00
11/01/96	12.0	3.3	8.0	1.0	1.2	1.2	0.00
11/02/96	NA	NA	NA	NA	NA	NA	0.00
11/03/96	NA	NA	NA	NA	NA	NA	0.00
11/04/96	12.8	3.2	8.9	0.9	1.1	1.3	0.00
11/05/96	12.3	3.2	8.6	0.9	1.1	1.2	0.00
11/06/96	12.3	3.0	7.8	0.9	1.1	1.3	0.01
11/07/96	10.8	2.6	7.2	0.9	0.9	1.2	0.30
11/08/96	6.8	2.1	3.6	1.2	1.3	1.4	0.00
11/09/96	NA	NA	NA	NA	NA	NA	0.00
11/10/96	NA	NA	NA	NA	NA	NA	0.00
11/11/96	10.3	2.4	5.4	0.9	1.1	1.4	0.00
11/12/96	11.9	2.5	6.3	0.8	1.1	1.2	0.00
11/13/96	11.5	2.4	6.9	0.8	1.0	1.3	0.00
11/14/96	10.5	2.4	0.8	7.2	1.0	1.2	0.00
11/15/96	9.8	2.4	6.5	0.8	1.0	1.1	0.00
11/16/96	NA	NA	NA	NA	NA	NA	0.06
11/17/96	NA	NA	NA	NA	NA	NA	0.25
11/18/96	NA	2.3	7.8	0.9	1.0	0.9	T
11/19/96	20.2	2.5	23.4	0.9	1.7	1.1	T
11/20/96	17.3	2.5	10.3	1.0	1.3	1.2	0
11/21/96	13.5	2.5	10.8	1.0	1.3	1.3	T
11/22/96	12.7	2.5	8.4	1.0	1.2	1.2	0
11/23/96	NA	NA	NA	NA	NA	NA	0
11/24/96	NA	NA	NA	NA	NA	NA	0.47
11/25/96	7.2	2.4	4.5	1.3	1.3	1.5	0.03

NA - not available

T - trace amounts of rainfall

Table 12. Magnesium concentrations, in milligrams per liter (mg/L), for daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Date Collected	Whiskey Chitto, Site 7	Birds Creek, Site 9	Whiskey Chitto, Site 8	West Fork Creek, Site 11	East Fork Creek, Site 13	Sixmile Creek, Site 15	Rainfall, inches
10/21/96	NA	NA	NA	NA	NA	NA	NA
10/22/96	0.9	0.7	0.9	0.5	0.5	0.5	0.87
10/23/96	1.1	0.7	0.9	0.5	0.5	0.5	0.00
10/24/96	1.3	0.7	1.0	0.5	0.4	0.6	1.69
10/25/96	NA	0.5	0.9	0.5	0.5	0.5	1.03
10/26/96	NA	NA	NA	NA	NA	NA	0.21
10/27/96	NA	NA	NA	NA	NA	NA	0.01
10/28/96	1.0	0.7	0.8	0.6	0.6	0.7	0.00
10/29/96	1.2	0.8	1.0	0.6	0.6	0.7	0.00
10/30/96	1.2	0.9	NA	0.6	0.6	0.7	0.21
10/31/96	1.2	1.0	1.1	0.7	0.6	0.7	0.00
11/01/96	1.2	1.0	1.1	0.6	0.6	0.7	0.00
11/02/96	NA	NA	NA	NA	NA	NA	0.00
11/03/96	NA	NA	NA	NA	NA	NA	0.00
11/04/96	1.3	1.0	1.2	0.6	0.6	0.7	0.00
11/05/96	1.3	0.9	1.1	0.5	0.5	0.7	0.00
11/06/96	1.2	0.9	1.1	0.5	0.5	0.7	0.01
11/07/96	1.1	0.8	1.1	0.5	0.5	0.6	0.30
11/08/96	0.9	0.7	0.9	0.7	0.7	0.7	0.00
11/09/96	NA	NA	NA	NA	NA	NA	0.00
11/10/96	NA	NA	NA	NA	NA	NA	0.00
11/11/96	1.2	0.8	1.0	0.5	0.6	0.7	0.00
11/12/96	1.25	0.8	1.0	0.6	0.6	0.7	0.00
11/13/96	1.14	0.7	1.1	0.5	0.6	0.6	0.00
11/14/96	1.07	0.8	1.1	0.5	0.6	1.1	0.00
11/15/96	1.0	0.8	1.0	0.5	0.5	0.6	0.00
11/16/96	NA	NA	NA	NA	NA	NA	0.06
11/17/96	NA	NA	NA	NA	NA	NA	0.25
11/18/96	NA	0.8	1.1	0.6	0.6	0.5	T
11/19/96	1.2	0.8	1.4	0.5	0.7	0.6	T
11/20/96	1.4	0.8	1.0	0.5	0.6	0.6	0
11/21/96	1.2	0.8	1.1	0.5	0.6	0.7	T
11/22/96	1.2	0.9	1.0	0.5	0.6	0.6	0
11/23/96	NA	NA	NA	NA	NA	NA	0
11/24/96	NA	NA	NA	NA	NA	NA	0.47
11/25/96	1.0	0.9	0.9	0.7	0.6	0.8	0.03

NA - not available

T - trace amounts of rainfall

Table 13. Major inorganic ion data for daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

[mg/L, milligrams per liter; meq/L, milliequivalents per liter]

Site Location: Whiskey Chitto Creek - site 6 | Date: October 22, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	10.0	0.435	43.53	Chloride	Cl	8.9	0.251	26.25
Potassium	K	2.2	0.056	5.63	Fluoride	F	0.1	0.005	0.55
Magnesium	Mg	0.9	0.074	7.41	Sulfate	SO_4	5.8	0.121	12.62
Calcium	Ca	8.7	0.434	43.44	*Bicarbonate	HCO_3	35.4	0.579	60.58
		Totals:	0.999		Carbonate	CO_3	0.0	0.000	0.00
							Totals:	0.956	
					Lab Alkalinity		29.0		

* Bicarbonate computed from alkalinity

Site Location: Birds Creek - site 9 | Date: October 22, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	2.5	0.109	34.33	Chloride	Cl	3.7	0.104	32.57
Potassium	K	1.2	0.031	9.69	Fluoride	F	0.1	0.005	1.64
Magnesium	Mg	0.7	0.058	18.18	Sulfate	SO_4	0.8	0.017	5.33
Calcium	Ca	2.4	0.120	37.81	*Bicarbonate	HCO_3	11.8	0.194	60.47
		Totals:	0.317		Carbonate	CO_3	0.0	0.000	0.00
							Totals:	0.321	
					Lab Alkalinity		9.7		

* Bicarbonate computed from alkalinity

Site Location: Whiskey Chitto Creek - site 7 | Date: October 22, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	8.6	0.374	44.88	Chloride	Cl	7.5	0.212	26.50
Potassium	K	1.8	0.046	5.52	Fluoride	F	0.1	0.005	0.66
Magnesium	Mg	0.9	0.074	8.88	Sulfate	SO_4	4.9	0.102	12.78
Calcium	Ca	6.8	0.339	40.71	*Bicarbonate	HCO_3	29.3	0.480	60.06
		Totals:	0.833		Carbonate	CO_3	0.0	0.000	0.00
							Totals:	0.798	
					Lab Alkalinity		24.0		

* Bicarbonate computed from alkalinity

Site Location: West Fork of Sixmile Creek - site 11 | Date: October 22, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	2.2	0.096	47.30	Chloride	Cl	3.0	0.085	40.76
Potassium	K	1.0	0.026	12.64	Fluoride	F	0.1	0.005	2.54
Magnesium	Mg	0.5	0.041	20.33	Sulfate	SO_4	0.3	0.006	2.81
Calcium	Ca	0.8	0.040	19.73	*Bicarbonate	HCO_3	6.8	0.112	53.89
		Totals:	0.202		Carbonate	CO_3	0.0	0.000	0.00
							Totals:	0.208	
					Lab Alkalinity		5.6		

* Bicarbonate computed from alkalinity

Table 13. Major inorganic ion data for daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Site Location: East Fork of Sixmile Creek - site 13 Date: October 22, 1996 Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	1.6	0.070	37.38	Chloride	Cl	3.0	0.085	40.06
Potassium	K	1.0	0.026	13.73	Fluoride	F	0.1	0.005	2.49
Magnesium	Mg	0.5	0.041	22.09	Sulfate	SO4	0.4	0.007	3.55
Calcium	Ca	1.0	0.050	26.80	*Bicarbonate	HCO3	6.9	0.114	3.90
	Totals:		0.186		Carbonate	CO3	0.0	0.000	0.00
						Totals:		0.211	
					Lab Alkalinity		5.7		

* Bicarbonate computed from alkalinity

Site Location: Sixmile Creek - site 15 Date: October 22, 1996 Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	2.6	0.113	49.24	Chloride	Cl	3.3	0.093	38.45
Potassium	K	1.0	0.026	11.13	Fluoride	F	0.1	0.005	2.17
Magnesium	Mg	0.5	0.041	17.91	Sulfate	SO_4	0.4	0.008	3.27
Calcium	Ca	1.0	0.050	21.72	*Bicarbonate	HCO_3	8.3	0.136	56.11
	Totals:		0.230		Carbonate	CO_3	0.0	0.000	0.00
						Totals:		0.242	
					Lab Alkalinity		6.8		

* Bicarbonate computed from alkalinity

Site Location: Whiskey Chitto Creek - site 6 Date: November 5, 1996 Time: 0835

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	7.3	0.318	29.40	Chloride	Cl	7.5	0.212	22.79
Potassium	K	1.8	0.047	4.33	Fluoride	F	0.1	0.005	0.57
Magnesium	Mg	1.3	0.103	9.52	Sulfate	SO_4	7.5	0.156	16.82
Calcium	Ca	12.3	0.613	56.74	*Bicarbonate	HCO_3	33.9	0.555	59.83
	Totals:		1.080		Carbonate	CO_3	0.0	0.000	0.00
						Totals:		0.928	
					Lab Alkalinity		27.8		

* Bicarbonate computed from alkalinity

Site Location: Birds Creek - site 9 Date: November 5, 1996 Time: 0840

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	2.6	0.113	29.28	Chloride	Cl	4.4	0.124	30.07
Potassium	K	1.4	0.036	9.40	Fluoride	F	0.1	0.005	1.28
Magnesium	Mg	0.9	0.076	19.59	Sulfate	SO_4	4.4	0.092	22.19
Calcium	Ca	3.2	0.161	41.73	*Bicarbonate	HCO_3	11.7	0.192	46.46
	Totals:		0.386		Carbonate	CO_3	0.0	0.000	0.00
						Totals:		0.413	
					Lab Alkalinity		9.6		

* Bicarbonate computed from alkalinity

Table 13. Major inorganic ion data for daily sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Site Location: Whiskey Chitto Creek - site 7 | Date: November 5, 1996 | Time: 0850

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	5.0	0.218	28.01	Chloride	Cl	5.6	0.158	23.61
Potassium	K	1.4	0.035	4.51	Fluoride	F	0.1	0.005	0.79
Magnesium	Mg	1.1	0.093	11.97	Sulfate	SO_4	5.6	0.117	17.43
Calcium	Ca	8.6	0.431	55.51	*Bicarbonate	HCO_3	23.7	0.389	58.17
	Totals:		0.777		Carbonate	CO_3	0.0	0.000	0.00
						Totals:		0.669	
					Lab Alkalinity		19.5		

* Bicarbonate computed from alkalinity

Site Location: West Fork of Sixmile Creek - site 11 | Date: November 5, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	1.9	0.083	43.86	Chloride	Cl	3.1	0.087	33.21
Potassium	K	0.8	0.021	11.34	Fluoride	F	0.1	0.005	2.00
Magnesium	Mg	0.5	0.042	22.15	Sulfate	SO_4	3.3	0.069	26.09
Calcium	Ca	0.9	0.043	22.65	*Bicarbonate	HCO_3	6.2	0.102	38.70
	Totals:		0.189		Carbonate	CO_3	0.0	0.000	0.00
						Totals:		0.263	
					Lab Alkalinity		5.1		

* Bicarbonate computed from alkalinity

Site Location: East Fork of Sixmile Creek - site 13 | Date: November 5, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	2.0	0.087	42.23	Chloride	Cl	3.3	0.093	33.61
Potassium	K	0.9	0.023	11.17	Fluoride	F	0.1	0.005	1.90
Magnesium	Mg	0.5	0.041	19.96	Sulfate	SO_4	3.3	0.069	24.81
Calcium	Ca	1.1	0.055	26.64	*Bicarbonate	HCO_3	6.7	0.110	39.68
	Totals:		0.206		Carbonate	CO_3	0.0	0.000	0.00
						Totals:		0.277	
					Lab Alkalinity		5.5		

* Bicarbonate computed from alkalinity

Site Location: Sixmile Creek - site 15 | Date: November 5, 1996 | Time: 0900

Cations		mg/L	meq/L	percent	Anions		mg/L	meq/L	percent
Sodium	Na	2.6	0.113	44.16	Chloride	Cl	3.9	0.110	33.90
Potassium	K	1.0	0.026	9.98	Fluoride	F	0.1	0.005	1.62
Magnesium	Mg	0.7	0.058	22.48	Sulfate	SO4	3.9	0.081	25.02
Calcium	Ca	1.2	0.060	23.38	*Bicarbonate	HCO3	7.8	0.128	39.46
	Totals:		0.256		Carbonate	CO3	0.0	0.000	0.00
						Totals:		0.325	
					Lab Alkalinity		6.4		

* Bicarbonate computed from alkalinity

Table 14. Percent silt, sand, and gravel of sediments collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Site number	Station Identification	Location
1	3059300931307	Bundick Creek ~400 ft south of bridge on Forest Service Road 422.
	silt 2.2 %	sand 97.8 % gravel --
2	3056310931205	Bundick Creek ~200 ft north of bridge on Forest Service Road 410.
	silt 0.4 %	sand 99.6 % gravel --
3	3100130930901	Drakes Creek ~200 ft north of bridge on Forest Service Road 421.
	silt 1.6 %	sand 98.4 % gravel --
4	3057520930817	Drakes Creek ~300 ft north of bridge on Louisiana Highway 10.
	silt 0.6 %	sand 99.4 % gravel --
5	3056430930641	Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.
	silt 0.4 %	sand 55.8 % gravel 43.8 %
6	3100320930449	Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road.
	silt 0.7 %	sand 38.3 % gravel 61 %
7	3058470930323	Whiskey Chitto Creek ~200 ft northwest of bridge on Ray Gill Road east of Leesville.
	silt --	sand 100 % gravel --
8	3057260930324	Whiskey Chitto Creek ~200 ft north of old Athison Topeka and Santa Fe railroad bridge.
	silt 1.9 %	sand 98.1 % gravel --
9	3101150930312	Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.
	silt 0.9 %	sand 39.1 % gravel 60.0 %
10	3059330930149	Little Sixmile Creek near the end of Gravel Pit Cutoff Road.
	silt 0.2 %	sand 37.3 % gravel 62.5 %
11	3102180930014	West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road.
	silt N/A	sand N/A gravel N/A
12	3100300925919	West Fork of Sixmile Creek ~750 ft west of Fullerton Lake.
	silt 0.6 %	sand 99.4 % gravel --
13	3102030925802	East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.
	silt 0.6 %	sand 72.1 % gravel 27.3 %
14	3100100925753	East Fork of Sixmile Creek ~200 ft northeast of bridge on Fullerton Blacktop Road (FS 412).
	silt 0.2 %	sand 72.5 % gravel 27.3 %

Table 15. Concentrations of trace metals and major cations in bottom material from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

[µg/g, micrograms per gram]

Station Identification			Trace Metal and Major Cation Data in Bottom Material							
Creek and Site Name	Date	Time	Calcium (percent, as Ca)	Magnesium (percent, as Mg)	Sodium (percent, as Na)	Potassium (percent, as K)	Phosphorus (percent, as P)	Aluminum (percent, as Al)	Antimony total (µg/g as Sb)	Arsenic total (µg/g as As)
Bundick (Site 1)	961206	0945	0.020	0.010	0.010	0.09	< 0.005	0.35	0.3	0.2
Bundick (Site 2)	961211	0830	0.008	0.006	< 0.005	0.06	< 0.005	0.17	< 0.1	< 0.1
Drakes (Site 3)	961205	1500	0.006	0.007	0.006	0.06	< 0.005	0.17	< 0.1	< 0.1
Drakes (Site 4)	961211	1230	0.008	0.006	0.006	0.06	< 0.005	0.16	0.1	< 0.1
Drakes (Site 5)	961211	1045	0.010	0.010	0.006	0.06	< 0.005	0.27	0.1	0.3
Whiskey Chitto (Site 6)	961205	1550	0.030	0.020	0.007	0.07	0.005	0.37	< 0.1	0.3
Whiskey Chitto (Site 7)	961206	1115	0.010	0.008	0.006	0.10	< 0.005	0.22	0.1	< 0.1
Whiskey Chitto (Site 8)	961211	0945	0.020	0.020	0.020	0.26	< 0.005	0.49	0.2	< 0.1
Birds (Site 9)	961205	0945	0.010	0.020	0.010	0.12	< 0.005	0.44	0.1	0.7
Little Sixmile (Site 10)	961210	1530	0.006	0.006	< 0.005	0.02	< 0.005	0.14	0.1	< 0.1
West Fork of Sixmile (Site 11)	961205	1300	0.008	0.008	0.007	0.07	< 0.005	0.22	< 0.1	< 0.1
West Fork of Sixmile (Site 12)	961210	1410	0.007	0.006	0.008	0.10	< 0.005	0.20	< 0.1	< 0.1
East Fork of Sixmile (Site 13)	961205	1015	0.007	0.007	0.006	0.07	< 0.005	0.24	< 0.1	0.6
East Fork of Sixmile (Site 14)	961210	1315	0.120	0.030	0.020	0.05	0.007	0.32	0.1	0.6

Table 15. Concentrations of trace metals and major cations in bottom material from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Station Identification			Trace Metal and Major Cation Data in Bottom Material						
Creek and Site Name	Date	Time	Barium total (µg/g as Ba)	Beryllium total (µg/g as Be)	Bismuth total (µg/g as Bi)	Cadmium total (µg/g as Cd)	Cerium total (µg/g as Ce)	Chromium total (µg/g as Cr)	Cobalt total (µg/g as Co)
Bundick (Site 1)	961206	0945	120	< 1	< 0.1	< 0.1	10	4	1
Bundick (Site 2)	961211	0830	97	< 1	< 0.1	< 0.1	9	2	< 1
Drakes (Site 3)	961205	1500	69	< 1	< 0.1	< 0.1	6	2	< 1
Drakes (Site 4)	961211	1230	89	< 1	< 0.1	< 0.1	6	2	< 1
Drakes (Site 5)	961211	1045	90	< 1	< 0.1	< 0.1	8	4	2
Whiskey Chitto (Site 6)	961205	1550	75	< 1	< 0.1	< 0.1	10	4	3
Whiskey Chitto (Site 7)	961206	1115	100	< 1	< 0.1	< 0.1	7	2	< 1
Whiskey Chitto (Site 8)	961211	0945	170	< 1	< 0.1	< 0.1	12	4	1
Birds (Site 9)	961205	0945	96	< 1	< 0.1	< 0.1	9	6	2
Little Sixmile (Site 10)	961210	1530	63	< 1	< 0.1	< 0.1	4	4	< 1
West Fork of Sixmile (Site 11)	961205	1300	84	< 1	< 0.1	< 0.1	11	2	< 1
West Fork of Sixmile (Site 12)	961210	1410	90	< 1	< 0.1	< 0.1	7	2	< 1
East Fork of Sixmile (Site 13)	961205	1015	67	< 1	< 0.1	< 0.1	9	4	< 1
East Fork of Sixmile (Site 14)	961210	1315	97	< 1	< 0.1	< 0.1	12	6	1

Table 15. Concentrations of trace metals and major cations in bottom material from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Station Identification			Trace Metal and Major Cation Data in Bottom Material						
Creek and Site Name	Date	Time	Copper total (µg/g as Cu)	Europium total (µg/g as Eu)	Gallium total (µg/g as Ga)	Gold total (µg/g as Au)	Holmium total (µg/g as Ho)	Iron (percent as Fe)	Lanthanum total (µg/g as La)
Bundick (Site 1)	961206	0945	1	< 2	< 4	< 8	< 4	0.16	5
Bundick (Site 2)	961211	0830	< 1	< 2	< 4	< 8	< 4	0.06	5
Drakes (Site 3)	961205	1500	4	< 2	< 4	< 8	< 4	0.07	4
Drakes (Site 4)	961211	1230	< 1	< 2	< 4	< 8	< 4	0.06	4
Drakes (Site 5)	961211	1045	< 1	< 2	< 4	< 8	< 4	0.23	5
Whiskey Chitto (Site 6)	961205	1550	2	< 2	< 4	< 8	< 4	0.24	6
Whiskey Chitto (Site 7)	961206	1115	2	< 2	< 4	< 8	< 4	0.07	4
Whiskey Chitto (Site 8)	961211	0945	3	< 2	< 4	< 8	< 4	0.13	7
Birds (Site 9)	961205	0945	1	< 2	< 4	< 8	< 4	0.39	5
Little Sixmile (Site 10)	961210	1530	< 1	< 2	< 4	< 8	< 4	0.16	3
West Fork of Sixmile (Site 11)	961205	1300	< 1	< 2	< 4	< 8	< 4	0.09	8
West Fork of Sixmile (Site 12)	961210	1410	< 1	< 2	< 4	< 8	< 4	0.06	4
East Fork of Sixmile (Site 13)	961205	1015	< 1	< 2	< 4	< 8	< 4	0.18	6
East Fork of Sixmile (Site 14)	961210	1315	2	< 2	< 4	< 8	< 4	0.32	7

Table 15. Concentrations of trace metals and major cations in bottom material from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Station Identification			Trace Metal and Major Cation Data in Bottom Material						
Creek and Site Name	Date	Time	Lead total (µg/g as Pb)	Lithium total (µg/g as Li)	Manganese total (µg/g as Mn)	Mercury total (µg/g as Hg)	Molybdenum total (µg/g as Mo)	Neodymium total (µg/g as Nd)	Nickel total (µg/g as Ni)
Bundick (Site 1)	961206	0945	5.9	5	48	< 0.02	0.1	4	< 2
Bundick (Site 2)	961211	0830	3.2	4	19	< 0.02	< 0.1	< 4	< 2
Drakes (Site 3)	961205	1500	2.7	3	17	< 0.02	< 0.1	< 4	< 2
Drakes (Site 4)	961211	1230	2.8	3	20	< 0.02	< 0.1	4	< 2
Drakes (Site 5)	961211	1045	4.4	4	41	< 0.02	< 0.1	< 4	< 2
Whiskey Chitto (Site 6)	961205	1550	3.5	4	87	< 0.02	0.1	4	< 2
Whiskey Chitto (Site 7)	961206	1115	3.4	3	55	< 0.02	< 0.1	< 4	< 2
Whiskey Chitto (Site 8)	961211	0945	5.4	5	30	< 0.02	0.1	5	< 2
Birds (Site 9)	961205	0945	3.8	4	56	< 0.02	0.2	< 4	< 2
Little Sixmile (Site 10)	961210	1530	3.1	3	21	< 0.02	0.1	< 4	< 2
West Fork of Sixmile (Site 11)	961205	1300	4.5	4	19	< 0.02	< 0.1	5	< 2
West Fork of Sixmile (Site 12)	961210	1410	2.7	3	13	< 0.02	< 0.1	< 4	< 2
East Fork of Sixmile (Site 13)	961205	1015	2.6	3	15	< 0.02	< 0.1	5	< 2
East Fork of Sixmile (Site 14)	961210	1315	3.7	4	47	< 0.02	0.2	7	3

Table 15. Concentrations of trace metals and major cations in bottom material from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Station Identification			Trace Metal and Major Cation Data in Bottom Material						
Creek and Site Name	Date	Time	Niobium total (µg/g as Nb)	Scandium total (µg/g as Sc)	Selenium total (µg/g as Se)	Silver total (µg/g as Ag)	Strontium total (µg/g as Sr)	Tantalum total (µg/g as Ta)	Thallium total (µg/g as Tl)
Bundick (Site 1)	961206	0945	< 4	< 2	< 0.5	< 0.1	9	< 40	0.2
Bundick (Site 2)	961211	0830	< 4	< 2	< 0.5	< 0.1	7	< 40	< 0.1
Drakes (Site 3)	961205	1500	< 4	< 2	< 0.5	< 0.1	6	< 40	< 0.1
Drakes (Site 4)	961211	1230	< 4	< 2	< 0.5	< 0.1	6	< 40	< 0.1
Drakes (Site 5)	961211	1045	< 4	< 2	< 0.5	< 0.1	8	< 40	< 0.1
Whiskey Chitto (Site 6)	961205	1550	< 4	< 2	< 0.5	< 0.1	7	< 40	< 0.1
Whiskey Chitto (Site 7)	961206	1115	< 4	< 2	< 0.5	< 0.1	8	< 40	< 0.1
Whiskey Chitto (Site 8)	961211	0945	< 4	< 2	< 0.5	< 0.1	14	< 40	< 0.1
Birds (Site 9)	961205	0945	< 4	< 2	< 0.5	< 0.1	8	< 40	< 0.1
Little Sixmile (Site 10)	961210	1530	< 4	< 2	< 0.5	< 0.1	5	< 40	< 0.1
West Fork of Sixmile (Site 11)	961205	1300	< 4	< 2	< 0.5	< 0.1	9	< 40	< 0.1
West Fork of Sixmile (Site 12)	961210	1410	< 4	< 2	< 0.5	< 0.1	7	< 40	< 0.1
East Fork of Sixmile (Site 13)	961205	1015	< 4	< 2	< 0.5	< 0.1	6	< 40	< 0.1
East Fork of Sixmile (Site 14)	961210	1315	< 4	< 2	< 0.5	< 0.1	28	< 40	< 0.1

Table 15. Concentrations of trace metals and major cations in bottom material from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Station Identification			Trace Metal and Major Cation Data in Bottom Material							
Creek and Site Name	Date	Time	Thorium total (µg/g as Th)	Tin total (µg/g as Sn)	Titanium (percent as Ti)	Vanadium total (µg/g as V)	Ytterbium total (µg/g as Yb)	Yttrium total (µg/g as Y)	Zinc total (µg/g as Zn)	Uranium total (µg/g as U)
Bundick (Site 1)	961206	0945	1.3	< 5	0.06	5	< 1	3	7	0.4
Bundick (Site 2)	961211	0830	1.3	< 5	0.05	3	< 1	2	2	0.3
Drakes (Site 3)	961205	1500	1.0	< 5	0.04	2	< 1	< 2	< 2	0.4
Drakes (Site 4)	961211	1230	0.9	< 5	0.03	2	< 1	< 2	< 2	0.4
Drakes (Site 5)	961211	1045	1.2	< 5	0.05	7	< 1	3	2	0.4
Whiskey Chitto (Site 6)	961205	1550	1.5	< 5	0.04	7	< 1	3	5	0.5
Whiskey Chitto (Site 7)	961206	1115	0.8	< 5	0.04	3	< 1	2	2	0.3
Whiskey Chitto (Site 8)	961211	0945	1.7	< 5	0.07	6	< 1	3	4	0.5
Birds (Site 9)	961205	0945	1.4	< 5	0.05	9	< 1	3	4	0.4
Little Sixmile (Site 10)	961210	1530	0.8	< 5	0.07	6	< 1	< 2	< 2	0.3
West Fork of Sixmile (Site 11)	961205	1300	1.2	< 5	0.04	3	< 1	2	2	0.4
West Fork of Sixmile (Site 12)	961210	1410	0.7	< 5	0.03	2	< 1	2	< 2	0.3
East Fork of Sixmile (Site 13)	961205	1015	1.5	< 5	0.05	5	< 1	2	2	0.4
East Fork of Sixmile (Site 14)	961210	1315	1.7	< 5	0.05	7	< 1	3	5	0.5

Table 16. Analyses of explosive compounds in bed materials collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

[All units are in micrograms per gram (µg/g); reporting limits are 0.25, except Tetryl, which is 0.50; ND = Not detected.]

Creek and Site Name	Date	Time	HMX	RDX	1,3,5-Trinitro-benzene	1,3-Dinitro-benzene	Tetryl	Nitro benzene	2,4,6-Trinitro-toluene
Bundick (site 1)	12/06/96	0945	ND	ND	ND	ND	ND	ND	ND
Bundick (site 2)	12/11/96	0830	ND	ND	ND	ND	ND	ND	ND
Drakes (site 3)	12/05/96	1500	ND	ND	ND	ND	ND	ND	ND
Drakes (site 4)	12/11/96	1230	ND	ND	ND	ND	ND	ND	ND
Drakes (site 5)	12/11/96	1045	ND	ND	ND	ND	ND	ND	ND
Whiskey Chitto (site 6)	12/05/96	1550	ND	ND	ND	ND	ND	ND	ND
Whiskey Chitto (site 7)	12/06/96	1115	ND	ND	ND	ND	ND	ND	ND
Whiskey Chitto (site 8)	12/11/96	0945	ND	ND	ND	ND	ND	ND	ND
Birds (site 9)	12/05/96	1425	ND	ND	ND	ND	ND	ND	ND
Little Sixmile (site 10)	12/10/96	1530	ND	ND	ND	ND	ND	ND	ND
West Fork of Sixmile (site 11)	12/05/96	1300	ND	ND	ND	ND	ND	ND	ND
West Fork of Sixmile (site 12)	12/10/96	1410	ND	ND	ND	ND	ND	ND	ND
East Fork of Sixmile (site 13)	12/05/96	1015	ND	ND	ND	ND	ND	ND	ND
East Fork of Sixmile (site 14)	12/10/96	1315	ND	ND	ND	ND	ND	ND	ND

Table 16. Analyses of explosive compounds in bed materials collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Creek and Site Name	4-Amino-2, 6-di-nitrotoluene	2-Amino-4, 6-di-nitrotoluene	2,6-Dinitro-toluene	2,4-Dinitro-toluene	2-Nitro-toluene	4-Nitro-toluene	3-Nitro-toluene
Bundick (site 1)	ND	ND	ND	ND	ND	ND	ND
Bundick (site 2)	ND	ND	ND	ND	ND	ND	ND
Drakes (site 3)	ND	ND	ND	ND	ND	ND	ND
Drakes (site 4)	ND	ND	ND	ND	ND	ND	ND
Drakes (site 5)	ND	ND	ND	ND	ND	ND	ND
Whiskey Chitto (site 6)	ND	ND	ND	ND	ND	ND	ND
Whiskey Chitto (site 7)	ND	ND	ND	ND	ND	ND	ND
Whiskey Chitto (site 8)	ND	ND	ND	ND	ND	ND	ND
Birds (site 9)	ND	ND	ND	ND	ND	ND	ND
Little Sixmile (site 10)	ND	ND	ND	ND	ND	ND	ND
West Fork of Sixmile (site 11)	ND	ND	ND	ND	ND	ND	ND
West Fork of Sixmile (site 12)	ND	ND	ND	ND	ND	ND	ND
East Fork of Sixmile (site 13)	ND	ND	ND	ND	ND	ND	ND
East Fork of Sixmile (site 14)	ND	ND	ND	ND	ND	ND	ND

Table 17. Major ion and nutrient data for surface-water samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; Cel, Celsius; NTU, nephelometric turbidity units; mg/L, milligrams per liter; mg/L, micrograms per liter; FET, fixed end-point titration; NA, not available]

Creek and Site Name	Date	Time	Specific Conductance (µS/cm)	pH, water whole field (standard units)	Temperature, water (degrees Cel)	Turbidity (NTU)	Oxygen, dissovled (mg/L)	Hardness, total (mg/L as $CaCO_3$)	Calcium, dissolved (mg/L as Ca)
Bundick (site 1)	Dec 1996 06...	0945	85	7.1	13.0	4.9	8.3	23	7.1
Bundick (site 2)	Dec 1996 11...	0830	64	6.5	14.5	2.5	8.6	16	4.8
Drakes (site 3)	Dec 1996 05...	1500	141	7.4	12.5	3.5	9.0	25	7.9
Drakes (site 4)	Dec 1996 11...	1230	98	7.2	15.0	2.5	8.6	16	4.7
Drakes (site 5)	Dec 1996 11...	1045	68	6.9	14.5	3.2	8.7	13	3.6
Whiskey Chitto (site 6)	Dec 1996 05...	1550	105	7.0	13.0	5.0	10.0	35	12.0
Whiskey Chitto (site 7)	Dec 1996 06...	1115	75	6.9	13.0	3.7	9.9	23	7.6
Whiskey Chitto (site 8)	Dec 1996 11...	0945	68	6.9	14.5	5.0	9.0	20	6.3
Birds (site 9)	Dec 1996 05...	1425	27	6.8	13.0	5.2	9.8	10	2.6
Little Sixmile (site 10)	Dec 1996 10...	1530	24	5.7	13.5	2.7	8.5	4	0.6
West Fork of Sixmile (site 11)	Dec 1996 05...	1300	21	6.3	12.5	2.1	9.7	4	0.9
West Fork of Sixmile (site 12)	Dec 1996 10...	1410	22	6.3	13.0	2.2	10.1	4	0.8
East Fork of Sixmile (site 13)	Dec 1996 05...	1015	22	6.5	12.5	4.4	10.1	5	1.0
East Fork of Sixmile (site 14)	Dec 1996 10...	1315	23	6.4	13.0	3.2	10.1	4	0.9

Table 17. Major ion and nutrient data for surface-water samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

[µS/cm, microsiemens per centimeter at 25 degrees Celsius; Cel, Celsius; NTU, nephelometric turbidity units; mg/L, milligrams per liter; mg/L, micrograms per liter; FET, fixed end-point titration; NA, not available]

Creek and Site Name	Date	Time	Specific Conductance (µS/cm)	pH, water whole field (standard units)	Temperature, water (degrees Cel)	Turbidity (NTU)	Oxygen, dissovled (mg/L)	Hardness, total (mg/L as $CaCO_3$)	Calcium, dissolved (mg/L as Ca)
Bundick (site 1)	Dec 1996 06...	0945	85	7.1	13.0	4.9	8.3	23	7.1
Bundick (site 2)	Dec 1996 11...	0830	64	6.5	14.5	2.5	8.6	16	4.8
Drakes (site 3)	Dec 1996 05...	1500	141	7.4	12.5	3.5	9.0	25	7.9
Drakes (site 4)	Dec 1996 11...	1230	98	7.2	15.0	2.5	8.6	16	4.7
Drakes (site 5)	Dec 1996 11...	1045	68	6.9	14.5	3.2	8.7	13	3.6
Whiskey Chitto (site 6)	Dec 1996 05...	1550	105	7.0	13.0	5.0	10.0	35	12.0
Whiskey Chitto (site 7)	Dec 1996 06...	1115	75	6.9	13.0	3.7	9.9	23	7.6
Whiskey Chitto (site 8)	Dec 1996 11...	0945	68	6.9	14.5	5.0	9.0	20	6.3
Birds (site 9)	Dec 1996 05...	1425	27	6.8	13.0	5.2	9.8	10	2.6
Little Sixmile (site 10)	Dec 1996 10...	1530	24	5.7	13.5	2.7	8.5	4	0.6
West Fork of Sixmile (site 11)	Dec 1996 05...	1300	21	6.3	12.5	2.1	9.7	4	0.9
West Fork of Sixmile (site 12)	Dec 1996 10...	1410	22	6.3	13.0	2.2	10.1	4	0.8
East Fork of Sixmile (site 13)	Dec 1996 05...	1015	22	6.5	12.5	4.4	10.1	5	1.0
East Fork of Sixmile (site 14)	Dec 1996 10...	1315	23	6.4	13.0	3.2	10.1	4	0.9

Table 17. Major ion and nutrient data for surface-water samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Creek and Site Name	Dissolved solids, residue at 180 deg C dissolved (mg/L)	Dissolved solids, calculated, sum of constituents, (mg/L)	Nitrite, dissolved (mg/L as N)	Nitrite (NO_2) + nitrate (NO_3) dissolved (mg/L as N)	Nitrogen, ammonia, dissolved (mg/L as N)	Nitrogen, ammonia + organic total (mg/L as N)
Bundick (site 1)	62	56	<0.01	0.06	<0.01	0.2
Bundick (site 2)	53	45	0.01	<0.05	0.02	0.4
Drakes (site 3)	107	103	<0.01	0.62	0.03	0.3
Drakes (site 4)	NA	63	0.01	<0.05	0.03	0.2
Drakes (site 5)	54	47	<0.01	<0.05	0.02	<0.2
Whiskey Chitto (site 6)	76	68	0.01	0.20	<0.01	<0.2
Whiskey Chitto (site 7)	60	52	<0.01	0.07	0.02	<0.2
Whiskey Chitto (site 8)	54	47	0.01	0.06	0.02	<0.2
Birds (site 9)	38	30	<0.01	0.07	0.03	<0.2
Little Sixmile (site 10)	33	25	0.01	<0.05	0.02	0.2
West Fork of Sixmile (site 11)	33	24	<0.01	<0.05	<0.01	<0.2
West Fork of Sixmile (site 12)	31	24	0.01	<0.05	0.03	<0.2
East Fork of Sixmile (site 13)	34	26	<0.01	<0.05	<0.01	<0.2
East Fork of Sixmile (site 14)	33	24	<0.01	<0.05	0.02	0.3

Table 17. Major ion and nutrient data for surface-water samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Creek and Site Name	Nitrogen, ammonia + organic dissolved (mg/L as N)	Phosphorus, total (mg/L as P)	Phosphorus, dissolved (mg/L as P)	Phosphorus, dissolved orthophosphate, (mg/L asP)	Carbon, organic, total (mg/L as C)	Chlor-A, phytoplankton chromofluorom (µg/L)	Chlor-B, phytoplankton chromofluorom (µg/L)
Bundick (site 1)	<0.2	0.01	<0.01	<0.001	5.9	<0.1	<0.1
Bundick (site 2)	0.2	0.04	<0.01	0.003	7.2	0.1	<0.1
Drakes (site 3)	0.3	0.41	0.39	0.230	6.1	<0.1	<0.1
Drakes (site 4)	0.2	0.18	0.15	0.150	8.4	0.1	<0.1
Drakes (site 5)	<0.2	0.11	0.08	0.087	5.1	<0.1	<0.1
Whiskey Chitto (site 6)	<0.2	0.08	0.02	0.022	3.9	<0.1	<0.1
Whiskey Chitto (site 7)	0.2	0.04	0.02	0.001	4.8	<0.1	<0.1
Whiskey Chitto (site 8)	<0.2	0.04	<0.01	0.002	4.7	<0.1	<0.1
Birds (site 9)	<0.2	<0.01	<0.01	<0.001	4.5	0.1	<0.1
Little Sixmile (site 10)	<0.2	<0.01	<0.01	<0.001	9.1	<0.1	<0.1
West Fork of Sixmile (site 11)	<0.2	<0.01	<0.01	<0.001	5.3	<0.1	<0.1
West Fork of Sixmile (site 12)	<0.2	<0.01	<0.01	<0.001	4.3	<0.1	<0.1
East Fork of Sixmile (site 13)	<0.2	<0.01	<0.01	<0.001	5.0	<0.1	<0.1
East Fork of Sixmile (site 14)	<0.2	<0.01	<0.01	<0.001	3.9	<0.1	<0.1

Table 18. Percent difference of cation/anion balance values for water samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Site no.	Station ID.	Location
1	3059300931307	Bundick Creek ~400 ft south of bridge on Forest Service Road 422.
	cations 0.793[1]	anions 0.776 [1] percent difference [2] 1.11
2	3056310931205	Bundick Creek ~200 ft north of bridge on Forest Service Road 410.
	cations 0.604	anions 0.575 percent difference 2.49
3	3100130930901	Drakes Creek ~200 ft north of bridge on Forest Service Road 421.
	cations 1.522	anions 1.452 percent difference 2.37
4	3057520930817	Drakes Creek ~300 ft north of bridge on LA 10.
	cations 0.932	anions 0.889 percent difference 2.39
5	3056430930641	Drakes Creek ~200 ft southeast of bridge on Forest Service Road 402.
	cations 0.624	anions 0.607 percent difference 1.38
6	3100320930449	Whiskey Chitto Creek near Leesville ~400 ft south of bridge H-7 on Lookout Road.
	cations 0.956	anions 0.909 percent difference 2.53
7	3058470930323	Whiskey Chitto Creek ~200 ft northwest of bridge on Ray Gill Road east of Leesville.
	cations 0.674	anions 0.679 percent difference -0.39
8	3057260930324	Whiskey Chitto Creek ~200 ft north of old Athison Topeka and Santa Fe railroad bridge.
	cations 0.613	anions 0.611 percent difference 0.17
9	3101150930312	Birds Creek near Cravens ~200 ft south of bridge H-8 on Lookout Road.
	cations 0.341	anions 0.340 percent difference 0.12
10	3059330930149	Little Sixmile Creek near the end of Gravel Pit Cutoff Road.
	cations 0.182	anions 0.199 percent difference -4.51
11	3102180930014	West Fork of Sixmile Creek north of Pitkin ~400 ft south of bridge H-9 on Lookout Road.
	cations 0.202	anions 0.197 percent difference 1.42
12	3100300925919	West Fork of Sixmile Creek ~750 ft west of Fullerton Lake.
	cations 0.186	anions 0.191 percent difference -1.28
13	3102030925802	East Fork of Sixmile Creek north of Pitkin ~250 ft south of bridge on Lookout Road.
	cations 0.209	anions 0.210 percent difference -0.02
14	3100100925753	East Fork of Sixmile Creek ~200 ft northeast of bridge on Fullerton Blacktop Road (FS 412).
	cations 0.197	anions 0.211 percent difference -3.51

[1]cations and anions are reported in meq/L (milliequivalents per liter)

[2]percent differences above 5% are considered unacceptable

Table 19. Analyses of bacteria in surface-water samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Creek and Site Name	Fecal Coliform (collonies per 100 milliliters)	Fecal Streptococcus (collonies per 100 milliliters)
Bundick (site 1)	100	96
Bundick (site 2)	200	880
Drakes (site 3)	66	106
Drakes (site 4)	330	112
Drakes (site 5)	110	310
Whiskey Chitto (site 6)	216	118
Whiskey Chitto (site 7)	122	380
Whiskey Chitto (site 8)	110	350
Birds (site 9)	230	570
Little Sixmile (site 10)	90	76
West Fork of Sixmile (site 11)	250	92
West Fork of Sixmile (site 12)	600	370
East Fork of Sixmile (site 13)	500	150
East Fork of Sixmile (site 14)	160	840

APPENDIX A:

PERIPHYTON ANALYSES FOR SAMPLES COLLECTED FROM SITES IN THE LIMITED USE AREA, VERNON RANGER DISTRICT, KISATCHIE NATIONAL FOREST, LOUISIANA

CONTENTS

PREPARED BY FRED BRYAN
U.S. GEOLOGICAL SURVEY

FEBRUARY-MARCH 1997

SUMMARY

Diatoms were usually the most speciose group of periphyton in the samples collected from the sampling sites in the Limited Use Area (LUA), Vernon Ranger District, Kisatchie National Forest, Louisiana. However, when the scrapings were predominantly filamentous, a few taxa, representing blue-green algae, green algae, or red algae, were the most abundant in terms of biomass. Some algae (i.e. *Tuomeya* sp.) were not quantifiable, using the utermohl procedure for enumerating plankton. In general, periphyton algal communities in stream sites near Fort Polk are representative of communities found in mineral-poor waters, low in alkaline earths and in buffering capacity, as described in other localities in the United States. Periphyton counts for samples collected from the sampling sites in the LUA are listed in table A1. Periphyton counts for replicate samples collected from the sampling sites in the LUA are listed in table A2. Replicate sample counts do not match original counts; however, replicate sample counts provide a good measure to confirm major taxa in biological communities.

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Table A1. Periphyton counts for samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

GROUP	TAXA	1	2	3 *	4	5 *	6	7	8	9	10	11	12	13	14
CHLOROPHYTA	Bulbochaete sp									47	20				
CHLOROPHYTA	Chaetophoraceae spp								28				29		
CHLOROPHYTA	Chlamydomonas spp				1			2							6
CHLOROPHYTA	Chlorella spp	1						1				2			
CHLOROPHYTA	Chlorococcum spp								1					1	
CHLOROPHYTA	Chlorogonium spp	1													
CHLOROPHYTA	Chlorophyta				3	1	3			18	10				
CHLOROPHYTA	Eudorina spp				30										
CHLOROPHYTA	Green Coccoid Form	1	1		1	7	13	3	8	1		2	1		6
CHLOROPHYTA	Oedogonium sp												13		
CHLOROPHYTA	Spirogyra sp													58	
CHLOROPHYTA	Stigeoclonium sp							21							
CHLOROPHYTA	Ulotrichales spp												50		
CHLOROPHYTA	Volvocales spp											2	1		
CHLOROPHYTA	Chlorococcum spp							7					47		
CHRYSOPHYTA	Achnanthes exigua	3													
CHRYSOPHYTA	Achnanthes lanceolata						1								
CHRYSOPHYTA	Achnanthes mutissima	2					4	6	5		5				
CHRYSOPHYTA	Achnanthes spp						4								
CHRYSOPHYTA	Bacillaria paradoxa	13	3		15	1									
CHRYSOPHYTA	Chrysophyta					1						1	2		
CHRYSOPHYTA	Bacillariophyceae		1		5					2					
CHRYSOPHYTA	Cocconeis fluviatilis	1													
CHRYSOPHYTA	Cocconeis scutellum					1									
CHRYSOPHYTA	Cyclotella atomus				1										
CHRYSOPHYTA	Cymbella minuta											1			
CHRYSOPHYTA	Cymbella sp							1							
CHRYSOPHYTA	Cymbella ventricosa							1							1
CHRYSOPHYTA	Diatoma hiemale	2													
CHRYSOPHYTA	Diatoma interrupta	1													
CHRYSOPHYTA	Eunotia bilunaris														15
CHRYSOPHYTA	Eunotia diodon										1				
CHRYSOPHYTA	Eunotia exigua										12				
CHRYSOPHYTA	Eunotia incisa										2		1		
CHRYSOPHYTA	Eunotia maior									3					
CHRYSOPHYTA	Eunotia pectinalis										14	1	1		
CHRYSOPHYTA	Eunotia pectinalis var. minor					1					30	2	1	9	8
CHRYSOPHYTA	Eunotia serra var. diadema									4					

Table A1. Periphyton counts for samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

GROUP	TAXA	1	2	3 *	4	5 *	6	7	8	9	10	11	12	13	14
CHRYSOPHYTA	Eunotia spp														3
CHRYSOPHYTA	Fragilaria brevistriata													1	
CHRYSOPHYTA	Fragilaria intermedia					2	2	2	10						
CHRYSOPHYTA	Fragilaria brevistriata							3	2						
CHRYSOPHYTA	Fragilaria spp	1					3	2	4						
CHRYSOPHYTA	Fragilaria ulna		1	1		1	3	1							
CHRYSOPHYTA	Fragilaria vulgaris						5								
CHRYSOPHYTA	Frustulia rhomboides										1				
CHRYSOPHYTA	Frustulia rhomboides var. cassinovia														3
CHRYSOPHYTA	Frustulia spp						1								
CHRYSOPHYTA	Frustulia vulgaris				1	11		5	1	2		1	10	1	4
CHRYSOPHYTA	Gomphonema brasiliense												2		
CHRYSOPHYTA	Gomphonema parvulum	1				4		1	11			1	7		2
CHRYSOPHYTA	Gomphonema spp						4								
CHRYSOPHYTA	Gyrosigma acuminatum				3										
CHRYSOPHYTA	Gyrosigma scalproides					1									
CHRYSOPHYTA	Melosira varians			1	2	5	1		1				1		
CHRYSOPHYTA	Navicula angusta				4	2	2								
CHRYSOPHYTA	Navicula capitata				1										
CHRYSOPHYTA	Navicula cincta	9	36		19	1	7								
CHRYSOPHYTA	Navicula cryptocephala	7	4	11	2	44	7			1					1
CHRYSOPHYTA	Navicula cryptotenella		1				4								
CHRYSOPHYTA	Navicula cuspidata		1						1						
CHRYSOPHYTA	Navicula exigua var. capitata			1		2		1	1	1					
CHRYSOPHYTA	Navicula minima								34						
CHRYSOPHYTA	Navicula mutica	3						1							
CHRYSOPHYTA	Navicula paleacea			1											
CHRYSOPHYTA	Navicula radiosa var. tenella		3		12									1	
CHRYSOPHYTA	Navicula spp		1			1	3	2				1			
CHRYSOPHYTA	Navicula symmetrica								4				1		
CHRYSOPHYTA	Nitzschia clausii				3										
CHRYSOPHYTA	Nitzschia filiformis	1			2			1							
CHRYSOPHYTA	Nitzschia frustulum		4		1										
CHRYSOPHYTA	Nitzschia levidensis var. salinarum		3	2	1	1	1								
CHRYSOPHYTA	Nitzschia levidensis var. victoriae						2	1	3						
CHRYSOPHYTA	Nitzschia paleacea	1	3		1	1	2	2	3	1	1				
CHRYSOPHYTA	Nitzschia sigma					1									

Table A1. Periphyton counts for samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

GROUP	TAXA	1	2	3 *	4	5 *	6	7	8	9	10	11	12	13	14
CHRYSOPHYTA	Nitzschia spp	2			2		1	5	1						
CHRYSOPHYTA	Nitzschia symmetrica				1										
CHRYSOPHYTA	Ochromonas sp				1										
CHRYSOPHYTA	Opephora martyi										1				
CHRYSOPHYTA	Pennales spp		1			2	6	2	12	2	10		5		2
CHRYSOPHYTA	Pinnularia gibba				1									2	
CHRYSOPHYTA	Pinnularia lundii	6	2	4					3	1				1	
CHRYSOPHYTA	Pinnularia mesagongyla													2	
CHRYSOPHYTA	Pinnularia spp				5	1						4		3	2
CHRYSOPHYTA	Pleurosigma delicatulum						1								
CHRYSOPHYTA	Stauroneis anceps							1							
CHRYSOPHYTA	Surirella ovalis	1										1			
CHRYSOPHYTA	Surirella striatula													1	
CHRYSOPHYTA	Synedra rumpens							1	11						
CHRYSOPHYTA	Synedra rumpens var. ?								1						
CHRYSOPHYTA	Synedra spp					1									
CHRYSOPHYTA	Synedra vaucheriae					1									
CHRYSOPHYTA	Tabellaria fenestrata										10				
CRYPTOPHYTA	Cryptomonas spp			8		1		2		8					
CRYPTOPHYTA	Cryptophyta	2		2			3								
CYANOBACTERIA	Anabaena sp				19										
CYANOBACTERIA	Anacystis spp											88	38		
CYANOBACTERIA	Aphanocapsa delicatissima													295	120
CYANOBACTERIA	Aphanothece clathrata										200				
CYANOBACTERIA	Aphanothece spp		4						2						
CYANOBACTERIA	Chroococcus dispersus var. minor				4				4						
CYANOBACTERIA	Cyanobacteria	12	1		1	9			4	6					214
CYANOBACTERIA	Lyngbya spp	127	310	91	54	107	213	38	172	52		11	2		287
CYANOBACTERIA	Microcystis spp							20							
CYANOBACTERIA	Oscillatoria spp	208	540	461	199	256	162		79						30
EUGLENOPHYTA	Euglena spp	1					1								1
EUGLENOPHYTA	Euglenophyta				2						1	1			
EUGLENOPHYTA	Phacus sp						1								
EUGLENOPHYTA	Trachelomonas spp	1		2											1
RHODOPHYTA	Tuomeya sp										**				

*Quality assurance provided by Michael Heine, Editor, APHA: Standard Methods Manual

**Colony morphology not quantifiable by Utermohl method

Table A2. Periphyton counts for replicate samples collected at sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

GROUP	TAXA	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CHLOROPHYTA	Ankistrodesmus sp										1				
CHLOROPHYTA	Bulbochaete sp									5	170				
CHLOROPHYTA	Chaetophoraceae spp														
CHLOROPHYTA	Chlamydomonas spp	5	3											6	
CHLOROPHYTA	Chlorella spp		4			2				10			13		
CHLOROPHYTA	Chlorococcum spp														
CHLOROPHYTA	Chlorogonium spp														
CHLOROPHYTA	Chlorophyta		2												
CHLOROPHYTA	Closterium sp						1	1				1	1		
CHLOROPHYTA	Euastrum sp												1		
CHLOROPHYTA	Eudorina elegans			32											
CHLOROPHYTA	Eudorina spp														
CHLOROPHYTA	Green Coccoid Form	1	2	3	8			2	6						4
CHLOROPHYTA	Oedogonium spp														
CHLOROPHYTA	Pleodorina sp													20	
CHLOROPHYTA	Spriogyra sp													75	
CHLOROPHYTA	Stigeoclonium sp														
CHLOROPHYTA	Ulotrichales spp		9												
CHLOROPHYTA	Volvocales spp													1	
CHRYSOPHYTA	Achnanthes exigua	1	1	1		1	3								1
CHRYSOPHYTA	Achnanthes lanceolata								1						
CHRYSOPHYTA	Achnanthes mutissima														
CHRYSOPHYTA	Achnanthes spp		4												
CHRYSOPHYTA	Aulacoseira spp			2						1					
CHRYSOPHYTA	Bacillaria paradoxa														
CHRYSOPHYTA	Bacillariophyceae														
CHRYSOPHYTA	Caloneis sp												3		
CHRYSOPHYTA	Chrysophyta										4				
CHRYSOPHYTA	Coscinodiscus sp												1		
CHRYSOPHYTA	Cocconeis fluviatilis	1	2	10		1			1						
CHRYSOPHYTA	Cocconeis scutellum														
CHRYSOPHYTA	Cyclotella atomus				1										
CHRYSOPHYTA	Cyclotella spp			3							2				

Table A2. Periphyton counts for replicate samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

GROUP	TAXA	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CHRYSOPHYTA	Cymatopleura spp													5	
CHRYSOPHYTA	Cymbella minuta									4			1		
CHRYSOPHYTA	Cymbella sp							1							3
CHRYSOPHYTA	Cymbella ventricosa														
CHRYSOPHYTA	Denticula spp				1		1								1
CHRYSOPHYTA	Diatoma hiemale									1					
CHRYSOPHYTA	Diatoma interrupta														
CHRYSOPHYTA	Eunotia bilunaris				5					2	4			18	1
CHRYSOPHYTA	Eunotia diodon														
CHRYSOPHYTA	Eunotia exigua														
CHRYSOPHYTA	Eunotia incisa														
CHRYSOPHYTA	Eunotia pectinalis			10				3		10					
CHRYSOPHYTA	Eunitioa pectinalis var. minor			1		2				1	32	9	6	3	13
CHRYSOPHYTA	Eunotia serra var. diadema														
CHRYSOPHYTA	Eunotia spp								1		4	1		2	1
CHRYSOPHYTA	Fragilaria brevistrata			11											
CHRYSOPHYTA	Fragilaria intermedia				1		6	1	2				5		9
CHRYSOPHYTA	Fragilaria leptostauron			3											
CHRYSOPHYTA	Fragilaria spp	5	3	2			5	1		3	1	8	7	3	9
CHRYSOPHYTA	Fragilaria ulna	28		5	6		10				7	3	2	1	2
CHRYSOPHYTA	Fragilaria vulgaris														
CHRYSOPHYTA	Frustulia rhomboides										3	2	22	1	9
CHRYSOPHYTA	Frustulia rhomboides var. cassinovia														
CHRYSOPHYTA	Frustulia spp														
CHRYSOPHYTA	Frustulia vulgaris	8		1	4								1	1	6
CHRYSOPHYTA	Gomphonema brasiliense	7		8		2								2	
CHRYSOPHYTA	Gomphonema parvulum	3	2	3	7	7	1				3	1	16		6
CHRYSOPHYTA	Gomphonema sp			1									1		
CHRYSOPHYTA	Gyrosigma acuminatum	3		2											
CHRYSOPHYTA	Gyrosigma parvulum											1			
CHRYSOPHYTA	Gyrosigma scalproides														
CHRYSOPHYTA	Gyrosigma sp	1				3									
CHRYSOPHYTA	Hantzschia amphioxys						1								

Table A2. Periphyton counts for replicate samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

GROUP	TAXA	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CHRYSOPHYTA	Melosira varians					4		10							
CHRYSOPHYTA	Navicula angusta		2			27	1	2							2
CHRYSOPHYTA	Navicula capitata														
CHRYSOPHYTA	Navicula cincta	9	5		14	5							1		
CHRYSOPHYTA	Navicula cryptocephala	4	4	9	4		9		7	1	12			3	7
CHRYSOPHYTA	Navicula cryptotenella			4			6	16							2
CHRYSOPHYTA	Navicula cuspidata														
CHRYSOPHYTA	Navicula exigua var. capitata	9	2	5				11	4	3					
CHRYSOPHYTA	Navicula minima			7	3										
CHRYSOPHYTA	Navicula mutica														2
CHRYSOPHYTA	Navicula paleacea		3												
CHRYSOPHYTA	Navicula radiosa var. tenella	1		9			5	2	2	6	3	3	2		
CHRYSOPHYTA	Navicula spp	3					5		3	6	1				2
CHRYSOPHYTA	Navicula symmetrica			6	1			3							
CHRYSOPHYTA	Nitzschia clausii														
CHRYSOPHYTA	Nitzschia filiformis														
CHRYSOPHYTA	Nitzschia frustulum	7		9	4	5		7	1						
CHRYSOPHYTA	Ntizschia levidensis var. salinarum			9	1		1	1							
CHRYSOPHYTA	Nitzschia levidensis var. victoriae		3			1									
CHRYSOPHYTA	Nitzschia paleacea	11				2	10	7	9						
CHRYSOPHYTA	Nitzschia paradoxa	12													
CHRYSOPHYTA	Nitzschia sigma		2	4			1								
CHRYSOPHYTA	Nitzschia spp	5		5	2	1	2		1			4	3		
CHRYSOPHYTA	Nitzschia symmetrica														
CHRYSOPHYTA	Ochromanas sp														
CHRYSOPHYTA	Opephora martyi														
CHRYSOPHYTA	Pennales spp														
CHRYSOPHYTA	Pinnularia gibba														
CHRYSOPHYTA	Pinnularia lundii	7	1	3	13				6	1					3
CHRYSOPHYTA	Pinnularia mesagongyla														
CHRYSOPHYTA	Pinnularia spp			1									3		1
CHRYSOPHYTA	Pleurosigma delicatulum														
CHRYSOPHYTA	Rhopalodia sp										3				

Table A2. Periphyton counts for replicate samples collected from sampling sites in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

GROUP	TAXA	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CHRYSOPHYTA	Stauroneis anceps														
CHRYSOPHYTA	Stephanodiscus sp			1											
CHRYSOPHYTA	Surirella ovalis								1						
CHRYSOPHYTA	Surirella spp						2								1
CHRYSOPHYTA	Surirella striatula														
CHRYSOPHYTA	Synedra rumpens														
CHRYSOPHYTA	Synedra rumpens var. ?														
CHRYSOPHYTA	Synedra spp			4											
CHRYSOPHYTA	Synedra vaucheriae														
CHRYSOPHYTA	Tabellaria fenestrata														
CRYPTOPHYTA	Cryptomonas spp			8							1		1		
CRYPTOPHYTA	Cryptophyta														
CYANOBACTERIA	Anabaena sp														
CYANOBACTERIA	Anacystis spp			130				216							
CYANOBACTERIA	Aphanocapsa delicatissima														
CYANOBACTERIA	Aphanothece clathrata														
CYANOBACTERIA	Aphanothece spp	16									58	14		64	
CYANOBACTERIA	Chroococcus dispersus var. minor	21													16
CYANOBACTERIA	Cyanobacteria		24	13		1									7
CYANOBACTERIA	Lyngbya spp		119				68	48					9	17	167
CYANOBACTERIA	Microcystis spp	25													
CYANOBACTERIA	Oscillatoria spp	256	170	302	9	218	976	148	18		15			6	95
CYANOBACTERIA	Oscillatoria or Aphanizomenon ?	3	124	53	10	39	68		132					18	
EUGLENOPHYTA	Euglena spp			1											
EUGLENOPHYTA	Euglenophyta														
EUGLENOPHYTA	Lepocinclis sp	1													
EUGLENOPHYTA	Phacus sp														
EUGLENOPHYTA	Trachelomonas spp														
RHODOPHYTA	Tuomeya sp										**				

? Reproductive and confirming trichome structure were distorted by subsampling technique; unable to confirm generic epithet.

** Colony morphology not quantifiable by Utermohl method

* Quality assurance provided by Michael Heine, Editor, APHA: Standard Methods Manual

Note: Replicate samples for biological communities generally do not match original counts (table A1); however, replicates provide a good measure to confirm major taxa.

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APPENDIX B:

ANALYSES OF FRESHWATER MUSSELS IN THE LIMITED USE AREA, VERNON RANGER DISTRICT, KISATCHIE NATIONAL FOREST, LOUISIANA

CONTENTS

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METHODS AND COMMENTS

Fourteen stations were sampled for freshwater mussels, one station at each of fourteen sites designated by the United States Geological Service, from December, 1996, through January, 1997. The sampling consisted of nondestructive visual examination and identification each mussel in the stream bottom for a distance of 100 feet, 50 feet above and below a center line. The center was designated based upon the reasonable possibility of the occurrence of mussels. After examination, the mussels were replaced into the stream bottom in the same location and orientation in which they were found. Sampling field ribbon was placed on the center line. Table B1 lists the mussels and some snails known to occur in Louisiana. Table B2 lists the stations and mussels found in the 14 stations during this sampling period.

The following mussels were encountered in these samples were:

Lampsilis hydiana
Villosa lienosa
Fusconaia askewi
Toxolasma parvus
Obovaria jacksoniana
Strophitus subvexus
Tritogonia verrucosa
Uniomerus tetralasmus

The Asiatic clam, *Corbicula fluminea*, was a locally abundant foreign contaminant in many samples. Also the snail, *Campeloma decisum*, was found in the samples. The findings are tallied in table B2. A total of 1844 mollusks were examined and counted. Of these, 802 were freshwater mussels, 983 were Asiatic clams, and 59 were snails. However, other mussels are known to exist in these and nearby streams.

Table B3 lists the mussels reported from the various headwater creeks in the Calcasieu River system, which drain Fort Polk and the Vernon District of the Kisatchie National Forest. It is also likely that additional species, although rare in headwaters, occur in these creeks (table B4). Table B5 lists the distribution of mussels in Louisiana streams, in regards to provinces, as they commonly occur in headwater streams. Previous work by this author on stations downstream from these headwater creeks are provided in table B6. Because the headwater creeks are integral constituents of the Calcasieu River watershed, a discussion of the mussels occurring in the entire watershed is necessary.

Impacts upon headwater streams have an impact upon entire downstream drainage which is evident in freshwater mussels. Sedimentation and pollution are significant deleterious impositions upon mussel communities in the Calcasieu drainages. The headwaters of the Calcasieu have suffered less sedimentation than other streams in Louisiana because of the limited agriculture and,

in part, because of the land use and management activities of the U. S. Army (Fort Polk) and the Forest Service (Kisatchie National Forest). Changes in management activities may change the nature of the streams and their mussel communities. The Calcasieu system contains the last major populations of several kinds of mussels that previously were abundant in the Sabine and Neches Rivers. Impoundment, sedimentation, and other factors have seriously decimated those populations (Howells *et al.* 1996). This increases the importance of the populations of mussels (and other animals and plants) in the Calcasieu River watershed, because they are relicts of a once much larger western Gulf ecosystem (Vidrine 1993). The close ties of the Calcasieu and Sabine watersheds is evident in their similarities in mussel communities.

The Calcasieu River system is one of the most interesting watersheds in the United States. It contains a unique assemblage of freshwater mussels that most closely resembles the assemblage previously found in the Sabine-Neches River system--a system that has sustained enormous decimation because of human use. Many of the better known mussel beds (locations) in that system are now devoid of mollusks (Howells *et al.* 1996). The Calcasieu River system, especially its headwaters, hosts a large, viable community of freshwater mussels (Vidrine 1993). The Calcasieu River remains for the most part in a near natural state. It has suffered in regions from paper mill wastes and sand mining, but it retains a diverse assemblage that is uniquely Western Gulf. The headwater streams have been studied in some detail, and large mussel populations exist and form rather diverse communities. The headwaters drain hilly, pineland regions, and these sandy streams occasionally suffer from sedimentation. The general absence of agriculture and urbanization on this river has provided for some of the most productive mussel habitat. The headwaters of this river may have been involved in stream capture with the Red River, Sabine River, and Bayou Teche headwaters (Vidrine 1993). Freshwater mussels include:

Pyganodon grandis
Strophitus subvexus
Amblema plicata
Quadrula quadrula
Quadrula pustulosa mortoni
Pleurobema riddelli
Uniomerus declivus
Glebula rotundata
Lampsilis hydiana
Leptodea fragilis
Obliquaria reflexa
Potamilus purpuratus
Toxolasma texasensis
Villosa lienosa
Utterbackia imbecillis
Arcidens confragosus
Plectomerus dombeyanus
Quadrula apiculata
Tritogonia verrucosa
Fusconaia askewi
Uniomerus tetralasmus
Lampsilis satur
Lampsilis teres
Ligumia subrostrata
Obovaria jacksoniana
Toxolasma parvus
Truncilla donaciformis

The headwaters of the Calcasieu River contain 4 species new to science that are as yet undescribed:

Strophitus sp.	(currently assigned to *Strophitus subvexus*)
Utterbackia sp.	(currently assigned to *Utterbackia imbecillis*, but referred to *Utterbackia* sp. near. *peggyae* (Johnson) by R. Hoeh in Vidrine (1996c).
Obovaria sp.	(currently assigned to *Obovaria jacksoniana*)
Toxolasma sp.	(currently assigned to *Toxolasma parvus*).

With this many undescribed species, it is apparent that the river system assemblage needs re-evaluation. Several of these species are only known from this drainage and/or from one or two drainages which neighbor the Calcasieu River.

Freshwater mussels are the most endangered organisms, as a group, on the planet (Cushman 1995). The Louisiana Natural Heritage Program (Animals of Special Concern: January 1997) lists two of the mussels in the headwater creeks of Fort Polk and the Vernon District: *Strophitus subvexus* (ranked G1 and S?; also see Hart and 1993) and *Pleurobema riddelli* (ranked G2 and S2). Williams and others (1993) listed *Obovaria jacksoniana* and *Pleurobema riddelli* with special concern. The communities of freshwater mussels in the headwater creeks and the Calcasieu River watershed are unique and threatened. With the demise of all of the mussel communities in the rivers of southwestern Louisiana and southeastern Texas, the Calcasieu River system has become a refuge for this unique community of freshwater mussels.

DESCRIPTION OF FRESHWATER MUSSEL SPECIES HABITATS

Lampsilis hydiana--They are the most abundant freshwater mussel in the headwater creek of the Calcasieu River system, and thus the most abundant mussel species at Fort Polk. The mussels move about freely along the stream bottom, but are typically located along the edges of the streams, where they are buried leaving only the smallest part of the post-basal shell exposed. These mussels have obvious sexual dimorphism in their shells. Very little is known about their life cycle and glochidial hosts. The mantle in the postbasal region is pigmented and appears fish-like. The structure is more elaborate in females, and it is commonly seen in late spring and early summer in very shallow water wiggling like a fish when the marsupia are fully charged with mature glochidia (an aggressive mimicry). It is strongly suspected that fish attempting to eat this fish mimic obtain a mouthful of aggressive glochidia, which, in turn, encyst in the gill filaments of the host fish. Many similar mussel species undergo a week of encystment and metamorphosis followed by excystment by the newly-formed, larval (juvenile) mussel, which attaches to other mussel shells or debris by a thin, elongate byssus. Although these mussels can form aggregations (beds), they are more commonly scattered in the available habitat. They tend to move more than many other kinds of mussels, which assists them in orientating themselves in the stream, possibly, for best use of the mantle flaps. They usually occur in sandy bottoms, but they have been found in muddy bottoms in clear or silty streams.

Villosa lienosa--These are the second most abundant mussels in the creeks of Fort Polk. However, in cases where sedimentation events occur, *Fusconaia askewi* will outnumber these mussels, because *Villosa lienosa* are sensitive to silt and sediment. They disappear from areas after depositional events, and it is common to find dead shells in areas of impact. *Villosa lienosa* resemble *Lampsilis hydiana* in many ways, but differ in specific ways worth mentioning. Whereas, *Lampsilis hydiana* has a fish-like mantle flap, *Villosa lienosa* has a mantle flap with melanistic finger-like projections, which, as a group, generally resemble hellgrammite. They are most commonly encountered buried in banks, like the *Lampsilis hydiana*, but will die quickly if taken out of the stream and held either out of water or in standing water. *Lampsilis hydiana* can withstand such removal with little loss of life. *Villosa lienosa* is uncommon in the lower reaches of the Calcasieu River, unlike *Lampsilis hydiana* (in fact, there are at least two other species of the genus *Lampsilis* downstream). The species, *Villosa,* is widely distributed along the Gulf Coast, north to Ohio, and contains a unique species of water mite. *Villosa lienosa* is restricted to sandy bottoms and clear streams.

Fusconaia askewi (formerly referred to as *Fusconaia lananensis* by this author and as currently assigned may include both species in the Calcasieu River system)--These mussels are different from the above two species in a great number of ways. First, they are gravid in the summer, while the previous two species are gravid in the late summer, winter, and spring. The male and female shells are identical. The eggs are scarlet in color, where *Lampsilis* and *Villosa* have eggs that are white to cream in color. No obvious mechanism for attracting fish is known. These mussels prefer the deeper part of the stream, and they will form small beds with clusters of individuals, which apparently move very little. They are very common in gravel. There may be two species involved, the second species is *F. lananensis*, and their separation is not clear (Howells *et al.* 1996). They are also common in the lower reaches of the Calcasieu River, where they can form fairly large beds with other species of mussels. These are restricted to the sandy, clear streams of the Calcasieu River system and westward into Texas; however, a single specimen has been found in Kisatchie Bayou, where *Fusconaia flava* is common.

Toxolasma sp. (currently assigned to *Toxolasma parvus* and formerly referred to as *Carunculina parva*)--These are very small mussels, which are often found in only a few centimeters of water near the edge of the creeks with sandy bottoms. The species in the creeks of Fort Polk is sexually dimorphic in shell forms. This dimorphism and its extremely small size suggests that it is a species new to science (R. Hoeh, personal communication). Either it or a sister species occurs in Kisatchie Creek, a tributary of the Red River draining Peason Ridge. Both populations contain the same unique mite. Typically, *Toxolasma parvus* thrive in lakes; therefore, it is unique to small creeks in southwestern Louisiana. The post-basal mantle flap of the female is modified into a worm-like caruncle, which turns beet-red during the late spring and early summer. The two caruncles, one on either mantle, "wiggle" like "bloodworms" and attract fish, which, hypothetically, are lured into takng a mouthful of glochidia. This occurs in shallow water near the stream's edge. The much larger and often misunderstood *Toxolasma texasensis* is apparently not in the streams of the headwaters of the Calcasieu River, but may be found in ponds and lakes in the area. Very little is known of the biology of these species.

Obovaria sp. (currently assigned to *Obovaria jacksoniana* and previously referred to as *Obovaria castanea*)--These mussels are abundant but scattered on sandbars, which are common downstream in the Calcasieu River. The mussels appear to prefer stable areas of clear streams with shifting sand. It is also found in one location in Missouri (Oesch 1984), and it is common in several streams in North Central Louisiana, including the Dugdemona River and Kisatchie Bayou. The type material for this species is described from eastern Louisiana and Mississippi. The western populations are larger in size. They are probably a new and undescribed species. The post-basal mantle flap is melanistic with a thin white line along the edge. This structure undulates and appears to vaguely resemble a swimming oligocheate. It may also serve to lure host fish for an infective meal of larvae. These mussels are not abundant in the headwater creeks of the Calcasieu River system. Nothing is known of the biology of these mussels.

Tritogonia verrucosa--Locally, these mussels are common in small, medium, and large streams. They were only sporadically found in Whiskey Chitto and Birds Creeks. Male and female shells are obviously different. Nothing is known of the biology of these mussels. These are the largest mussels encountered in the headwater creeks. They may occur at any location in the bottom of the stream and in any bottom type. The species is distributed throughout most of eastern North America.

Uniomerus tetralasmus (including records for *Uniomerus declivus*)--Two distinctly different species of this genus is a popular conception; however, they are very variable not only in morphology but also in habitat preference, occurring in ponds, lakes, creeks, and rivers. Also, they are reported to live out of water for more than a month while stranded on bars during low water. The presently accepted method used in separation of the species may be inadequate. They are locally abundant in the streams of Fort Polk and the Vernon Ranger District, where they usually occur anywhere in the stream bottom and in any bottom type, and are sometimes locally abundant. The species is distributed throughout most of eastern North America.

Strophitus sp. (currently assigned to *Strophitus subvexus*)--These mussels are a new and undescribed species unique to the Calcasieu River system and may have occurred historically in the Sabine River system. They are usually in the bottom of the stream in the deepest water, where current is obvious. They occur in Drakes, Whiskey Chitto, Birds, and Tenmile Creeks in the Fort Polk area and in the Vernon Ranger District. It has a unique water mite parasitizing it. Nothing is known of their biology. It is currently globally ranked as rare.

Pleurobema riddelli--These mussels are poorly understood. Historically, they were known under several different names from the Red River and Bayou Teche systems; however, they have all but disappeared from those systems (Vidrine 1993). They once were abundant in the Neches River system, but are no longer found (Howells *et al.* 1996). Few specimens have been encountered in the Calcasieu River system. A single specimen was found in 1989 in Drakes Creek on Fort Polk. None have been found since, and they are globally ranked as rare. They are often found mixed in with *Fusconaia* spp. forming beds in sand or small gravel bottoms. Nothing is known of their biology. It shares a unique mite with the *Pleurobema* spp. in the eastern Gulf drainages.

Utterbackia sp. (currently assigned to *Utterbackia imbecillis*)--These mussels are a new and undescribed species, which is closely related to *Utterbackia peggyae* from Florida (Randy Hoeh, personal communication). It is abundant in the pool in Drakes Creek under the bridge on Lookout Road. It also was found in 1992 in Drakes Creek on the Vernon District. This is the only stream in Louisiana known to contain this species. A similar species was found in at least one pond in Texas (Howells *et al.* 1996). This is an exceedingly rare species. Nothing of its biology is known. It apparently is restricted to pool areas with silt in sandy streams. It has a unique mite.

Pyganodon grandis (formerly referred to as *Anodonta grandis*)--This mussel was also found in Drakes Creek. A single specimen was found in the pool under the Lookout Road bridge. This is, however, a very common mussel in lakes and lenthic waterways. It prefers mud and silt, and can attain a very large size. It should be a resident of ponds and lakes in the area. It has a unique mite.

Campeloma decisum--These snails are common throughout the Mississippi Interior Basin, where organically enriched streams may contain enormous populations. It has a unique mite.

Asiatic clams were the most common mollusks found in these samples. These clams can attain astronomical numbers in watersheds because they reproduce using veliger (free-swimming, nonparasitic) larvae. They are locally abundant in numerous localities not only in Louisiana, but also throughout the United States.

As evidenced with dragonflies (Vidrine 1988) and mussels (Vidrine 1993), there are a number of species and sibling species which are found in both eastern and western Louisiana (eastern Gulf and western Gulf regions). Hypothetically, the population and species separation between Mississippi and Atchafalaya floodways occurred during and since the Mississippi Embayment. Mussel examples include western species verses eastern species (see Table B5):

Pleurobema riddelli vs *Pleurobema beadleanum*
Lampsilis satur vs *Lampsilis ornata*
Fusconaia askewi vs *Fusconaia cerina*
Quadrula p. mortoni vs *Quadrula refulgens*
Obovaria sp. vs *Obovaria jacksoniana*
Strophitus sp. vs *Strophitus subvexus*
Utterbackia sp. vs *Utterbackia peggyae*
Toxolasma sp. vs *Toxolasma parvus*

It is both interesting and important to note that no mussels were found in Little Sixmile Creek. The bottom of this creek contained sand and gravel with a flora that was similar to East Fork and West Fork Sixmile Creek and notably different from Birds Creek. The plant species were more hydric and more "baygallish", with indicator woody species like *Itea virginica*, *Halesia diptera*, *Hypericum prolificum*, *Nyssa sylvatica*, and *Smilax laurifolia*, and herbaceous species like *Panicum dichotomum* and *Elephantopus* spp. The plants in the stream were even more obvi-

ous and included *Fontinalis* spp., *Sparganium americanum*, and the red alga *Batrachospermum* spp. (Charles Allen, personal communication). It appears that water-quality of streams with this flora have a distinctively different chemistry. As distinctive as the flora is, the mussel community is distinctive in its absence. This indicates that the freshwater mussels and possible their host fish find these streams poor habitat or otherwise adversely affecting their viability.

Apparently, Sixmile Creek habitat is less adverse to mussels further downstream, as evidenced by the following collections. In 1992, Sixmile Creek at LA Highway 458 was sampled, and 164 mussels were found in 50 meters of stream. The majority (104) were *Fusconaia askewi.* Other mussels found were *Villosa lienosa, Obovaria jacksoniana, Lampsilis hydiana*, and *Toxolasma parvus.* Most of these mussels were clumped in a single bed (Vidrine 1992). In 1994, Sixmile Creek at LA Highway 113 was sampled. Ninety-seven mussels were found in approximately 600 meters of stream. The majority were *Fusconaia askewi.* Other mussels found were *Villosa lienosa, Lampsilis hydiana*, and *Toxolasma parvus.* Most of these mussels were clumped in a single bed (Radian Corporation 1995).

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Table B1. Mussels, exotic clams, and snails of Louisiana modified from AFS list (Turgeon *et al.* 1988) and Hoeh's (1990) changes with possible unrecorded or historical residents and non-unionacean natives and exotic species

Scientific Name	Common Name
Margaritiferinae	
Margaritifera hembeli (Conrad, 1838)	Louisiana pearlshell
Unionidae	
Anodontinae	
Pyganodon grandis (Say, 1829)	giant floater
Utterbackia imbecillis (Say, 1829)	paper pondshell
Anodonta suborbiculata Say, 1831	flat floater
Anodonta woodiana (Lea)	Asian floater
Anodontoides radiatus (Conrad, 1834)	rayed creekshell
Strophitus subvexus (Conrad, 1834)	southern creekmussel
Strophitus undulatus (Say, 1817)	squawfoot
Arcidens confragosus (Say, 1829)	rock-pocketbook
Lasmigona complanata (Barnes, 1823)	white heelsplitter
Ambleminae	
Amblemini	
Amblema plicata (Say, 1817)	threeridge
Megalonaias nervosa (Rafinesque, 1820)	washboard
Plectomerus dombeyanus (Valenciennes, 1827)	bankclimber
Quadrula pustulosa pustulosa (Lea, 1831)	pimpleback
Quadrula pustulosa mortoni (Conrad, 1835)	western pimpleback
Quadrula refulgens (Lea, 1868)	purple pimpleback
Quadrula nodulata (Rafinesque, 1820)	wartyback
Quadrula nobilis (Conrad 1854)	Gulf Mapleleaf
Quadrula apiculata (Say, 1829)	southern mapleleaf
Quadrula quadrula (Rafinesque, 1820)	mapleleaf
Quadrula cylindrica (Say, 1817)	rabbitsfoot
Quadrula metanevra (Rafinesque, 1820)	monkeyface
Tritogonia verrucosa (Rafinesque, 1820)	pistolgrip
Pleurobemini	
Pleurobema rubrum (Rafinesque, 1820)	pyramid pigtoe
Pleurobema beadleanum (Lea, 1861)	Mississippi pigtoe
Pleurobema riddelli (Lea, 1861)	Louisiana pigtoe
Elliptio crassidens (Lamarck, 1819)	elephant ear
Elliptio dilatata (Rafinesque, 1820)	spike
Fusconaia askewi (Marsh, 1896)	Texas pigtoe
Fusconaia cerina (Conrad, 1838)	Gulf pigtoe
Fusconaia flava (Rafinesque, 1820)	Wabash pigtoe

Table B1. Mussels, exotic clams, and snails of Louisiana modified from AFS list (Turgeon *et al.* 1988) and Hoeh's (1990) changes with possible unrecorded or historical residents and non-unionacean natives and exotic species--Continued

Scientific Name	Common Name
Pleurobemini (continued)	
Fusconaia ebena (Lea, 1831)	ebonyshell
Uniomerus tetralasmus (Say, 1831)	pondhorn
Uniomerus declivus (Say, 1831)	tapered pondhorn
Lampsilini	
Actinonaias ligamentina (Lamarck, 1819)	mucket
Cyprogenia aberti (Conrad, 1850)	western fanshell
Ellipsaria lineolata (Rafinesque, 1820)	butterfly
Glebula rotundata (Lamarck, 1819)	round pearlshell
Lampsilis abrupta (Say, 1831)	pink mucket
Lampsilis cardium (Rafinesque, 1820)	plain pocketbook
Lampsilis satur (Lea, 1852)	sandbank pocketbook
Lampsilis ornata (Conrad, 1835)	southern pocketbook
Lampsilis siliquoidea (Barnes, 1823)	fatmucket
Lampsilis hydiana (Lea, 1838)	Louisiana fatmucket
Lampsilis claibornensis (Lea, 1838)	southern fatmucket
Lampsilis teres (Rafinesque, 1820)	yellow sandshell
Ligumia recta (Lamarck, 1819)	black sandshell
Ligumia subrostrata (Say, 1831)	pondmussel
Leptodea fragilis (Rafinesque, 1820)	fragile papershell
Potamilus amphichaenus (Frierson, 1898)	Texas heelsplitter
Potamilus inflatus (Lea, 1831)	inflated heelsplitter
Potamilus ohiensis (Rafinesque, 1820)	pink papershell
Potamilus capax (Green, 1832)	fat pocketbook
Potamilus purpuratus (Lamarck, 1819)	bleufer
Ptychobranchus occidentalis (Conrad, 1836)	Ouachita kidneyshell
Toxolasma parvus (Barnes, 1823)	lilliput
Toxolasma texasensis (Lea, 1857)	Texas lilliput
Obliquaria reflexa (Rafinesque, 1820)	threehorn wartyback
Obovaria jacksoniana (Frierson, 1912)	southern hickorynut
Obovaria olivaria (Rafinesque, 1820)	hickorynut
Obovaria unicolor (Lea, 1845)	Alabama hickorynut
Truncilla donaciformis (Lea, 1828)	fawnsfoot
Truncilla truncata (Rafinesque, 1820)	deertoe
Villosa lienosa (Conrad, 1834)	little spectaclecase
Villosa vibex (Conrad, 1834)	southern rainbow

Table B1. Mussels, exotic clams, and snails of Louisiana modified from AFS list (Turgeon *et al.* 1988) and Hoeh's (1990) changes with possible unrecorded or historical residents and non-unionacean natives and exotic species--Continued

Scientific Name	Common Name
Exotic clams	
Corbicula fluminea (Muller)	Asiatic clam
Dreissena polymorpha (Pallas)	Zebra mussel
Snails of Interest	
Viviparidae	
Campeloma Rafinesque 1819	
Campeloma decisum (Say, 1816)	
Viviparus Montfort 1810	
Viviparus subpurpureus (Say, 1829)	
Viviparus intertextus (Say, 1829)	
Pleuroceridae	
Pleurocera Rafinesque 1818	
Pleurocera canaliculatum canaliculatum (Say, 1821)	

Table B2. Freshwater mussels and snails found at sampling sites in the Limited Usea Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Mollusks	Stations														Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Lampsilis hydiana	8	3	72	117	11	0	0	8	114	0	0	0	0	0	333
Villosa lienosa	3	0	13	54	10	0	1	7	31	0	0	1	0	0	120
Fusconaia askewi	1	1	44	53	0	0	4	30	34	0	0	0	0	0	167
Toxolasma parvus	0	0	8	93	5	0	0	1	39	0	0	0	0	0	146
Obovaria jacksoniana	0	0	1	5	0	0	2	8	0	0	0	0	0	0	16
Strophitus subvexus	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Tritogonia verrucosa	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Uniomerus tetralasmus	6	0	7	3	1	0	0	0	0	0	0	0	0	0	17
Corbicula fluminea	232	0	195	226	23	27	78	88	114	0	0	0	0	0	983
Campeloma decisum	0	0	9	10	0	7	20	7	6	0	0	0	0	0	59
Totals	250	4	349	561	50	34	105	150	340	0	0	1	0	0	1844

Stations*

1. Bundick Creek ~100 m upstream from bridge on Forest Service Road 422 and near entrance of Yoke Creek. Sampled December 23, 1996.
2. Bundick Creek at Forest Service Road 410 ~50 m upstream from the bridge. Sampled December 23, 1996.
3. Drakes Creek at Forest Service Road 421 ~50 m upstream from the bridge. Sampled December 23, 1996.
4. Drakes Creek at LA Hwy 10 ~100 m downstream from the bridge. Sampled December 23, 1996.
5. Drakes Creek at Forest Service 402 ~50 m upstream from the bridge. Sampled December 23, 1996.
6. Whiskey Chitto Creek at Lookout Road ~100 m downstream from the bridge. Sampled December 24, 1996.
7. Whiskey Chitto Creek at Ray Gill Road ~50 m upstream from the bridge. Sampled December 23, 1996.
8. Whiskey Chitto Creek at old Railroad bed (road) ~100 m upstream from the washed out bridge (site is ~0.67 map miles due south of LA 10 just west of Cravens). Sampled December 24, 1996.
9. Birds Creek at Lookout Road ~50 m downstream from the bridge. Sampled December 22, 1996.
10. Little Sixmile Creek just south of Kisatchie Forest line at Forest Service Road 421 ~30 m downstream from the bridge. Sampled December 22, 1996.
11. West Fork Sixmile Creek at Lookout Road ~50 m downstream from the bridge. Sampled December 22, 1996.
12. West Fork Sixmile Creek due west of Fullerton Lake. Sampled December 22, 1996.
13. East Fork Sixmile Creek at Lookout Road ~50 m downstream from the bridge. Sampled December 22, 1996.
14. East Fork Sixmile Creek at Forest Service Road 412 near Oak Grove Church ~50 m upstream from the bridge.

*At each station the water level was up from 0.5 to 1.5 feet from previous work. The increase in water levels was more apparent in the larger streams.

Table B3. Mussels in headwater creeks of the Calcasieu River system from Fort Polk, Peason Ridge, and the Kisatchie National Forest, Louisiana

Mussels	Creeks									
	BC	DC	WC	BiC	LS	WF	EF	BB	TC	CC
Lampsilis hydiana	x	x	x	x		x	x	x	x	x
Villosa lienosa	x	x	x	x		x	x*	x	x	x
Fusconaia askewi	x	x	x	x		x*	x	x	x	x
Toxolasma parvus		x	x	x		x		x	x	x
Uniomerus tetralasmus	x	x	x	x					x	
Obovaria jacksoniana		x	x	x						x
Strophitus subvexus		x	x	x					x	
Utterbackia sp.		x								
Pyganodon grandis		x								
Pleurobema riddelli		x								
Tritogonia verrucosa			x	x						

* Records were in 1996 not distant from 1992 transplant sites!

List of Creeks:
- Bundick Creek--BC
- Drakes Creek--DC
- Whiskey Chitto--WC
- Birds Creek--BiC
- Little Sixmile Creek--LS
- West Fork Sixmile Creek--WF
- East Fork Sixmile Creek--EF
- Big Brushy Creek--BB
- Tenmile Creek--TC
- Comrade Creek--CC

Table B4. Other freshwater mussel species suspected of occurring in headwater creeks and larger creeks in the Vernon Ranger District, Kisatchie National Forest, Louisiana

Quadrula pustulosa mortoni
Lampsilis teres
Lampsilis satur
Potamilus purpuratus
Leptodea fragilis
Amblema plicata
Plectomerus dombeyanus
Glebula rotundata
Uniomerus declivus
Ligumia subrostrata
Obliquaria reflexa

Table B5. Distribution of mussels in Louisiana streams in regards to provinces as they commonly occur in headwater streams

Species	W. Gulf	Miss Basin	E. Gulf
Margaritifera hembeli		x	
Anodontoides radiatus			x
Strophitus subvexus	x		x
Strophitus undulatus		x	
Quadrula p. pustulosa		x	
Quadrula p. mortoni	x		
Quadrula refulgens			x
Tritogonia verrucosa	x	x	x
Pleurobema beadleanum			x
Pleurobema rubrum		x	
Pleurobema riddelli	x	x	
Elliptio crassidens			x
Elliptio dilatata		x	
Fusconaia flava		x	
Fusconaia askewi	x		
Fusconaia cerina			x
Uniomerus tetralasmus	x	x	
Lampsilis ornata			x
Lampsilis satur	x	x	
Lampsilis hydiana	x	x	
Lampsilis claibornensis			x
Lampsilis teres	x	x	x
Ligumia subrostrata	x	x	x
Obovaria jacksoniana	x	x	x
Obovaria unicolor			x
Potamilus purpuratus	x	x	x
Toxolasma parvus	x	x	x
Toxolasma texasensis	x	x	x
Truncilla donaciformis	x	x	
Truncilla truncata	x	x	
Villosa lienosa	x	x	x
Villosa vibex			x

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)

51. Louisiana. Vernon Parish. Calcasieu River at Rt. LA 8. 21 June 1975. M. F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Uniomerus tetralasmus	*12*	*Najadicola ingens*	*1*
Glebula rotundata	*3*	*none*	
Lampsilis hydiana	*3*	*Unionicola hoesei*	*3*
		Unionicola abnormipes	*3*

52. Louisiana. Vernon Parish. Calcasieu River at Rt. LA 489. 21 June 1975. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Quadrula p. mortoni	*1*	*Unionicola vikitra*	*1*
Lampsilis hydiana	*4*	*Unionicola hoesei*	*4*
		Unionicola abnormipes	*4*
Fusconaia askewi	*2*	*Unionicola parkeri*	*1*
Villosa lienosa	*8*	*Unionicola serrata*	*1*
		Unionicola gailae	*6*
Campeloma decisum	*5*	*none*	

53. Louisiana. Rapides Parish. Calcasieu River at junction of Rts. LA 112 and 121, near Hineston. 20 July 1974. M.S. DeRouen, Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Fusconaia askewi	54	Unionicola parkeri	18
		Unionicola serrata	5
Quadrula p. mortoni	13	Unionicola vikitra	7
		Unionicola serrata	3
Tritogonia verrucosa	5	Unionicola vamana	5
Lampsilis hydiana	5	Unionicola hoesei	5
Villosa lienosa	4	Unionicola gailae	4
Toxolasma parvus	2	Unionicola kavanaghi	1
Obovaria jacksoniana	7	none	
Strophitus subvexus	2	Unionicola dimocki	2
Campeloma decisum	15	none	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

54. Louisiana. Rapides Parish. Calcasieu River at junction of Rts. LA 112 and 121, Hineston. 4 October 1986. Macky and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Strophitus subvexus	*9*	*Unionicola dimocki*	*8*
Fusconaia askewi	*98*	*Unionicola serrata*	*28*
		Unionicola parkeri	*12*
		Najadicola ingens	*1*
Tritogonia verrucosa	*6*	*Unionicola vamana*	*6*
		Unionicola serrata	*2*
Lampsilis hydiana	*25*	*Unionicola hoesei*	*25*
		Unionicola abnormipes	*6*
Villosa lienosa	*40*	*Unionicola gailae*	*36*
		Unionicola serrata	*20*
Toxolasma parvus	*11*	*Unionicola kavanaghi*	*7*
		Unionicola serrata	*2*
		Najadicola ingens	*2*
Obovaria jacksoniana	*26*	*Unionicola gailae*	*1*
		Unionicola abnormipes	*1*
Pleurobema riddelli	*6*	*Unionicola gowani*	*1*
		Najadicola ingens	*1*
Lampsilis teres	*3*	*Unionicola hoesei*	*3*
Quadrula p. mortoni	*9*	*Unionicola vikitra*	*9*
		Unionicola serrata	*3*
Uniomerus declivus	*4*	*Najadicola ingens*	*3*
Campeloma decisum	*50*	*Unionicola campelomaicola*	*2*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

55. Louisiana. Rapides Parish. Calcasieu River at junction of Rts. LA 112 and 121, Hineston. 21 September 1991. Bruno Borsari and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Strophitus subvexus	*7*	*Unionicola dimocki*	*7*
Fusconaia askewi	*79*	*Unionicola serrata*	*11*
		Unionicola parkeri	*1*
		Najadicola ingens	*3*
Tritogonia verrucosa	*3*	*Unionicola vamana*	*3*
		Najadicola ingens	*1*
Lampsilis hydiana	*38*	*Unionicola hoesei*	*37*
		Unionicola abnormipes	*7*
Villosa lienosa	*35*	*Unionicola gailae*	*27*
		Unionicola serrata	*10*
Pleurobema riddelli	*9*	*Unionicola gowani*	*1*
		Najadicola ingens	*1*
Lampsilis teres	*1*	*Unionicola hoesei*	*1*
Quadrula p. mortoni	*7*	*Unionicola vikitra*	*6*
		Unionicola serrata	*1*
Uniomerus declivus	*9*	*Najadicola ingens*	*3*
		Unionicola stricta	*2*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

56. Louisiana. Rapides Parish. Calcasieu River at junction of Rts. LA 112 and 121, Hineston. 25 August 1978. D.J. Bereza, S.S. Roback, and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis satur	*1*	*Unionicola hoesei*	*1*
		Unionicola serrata	*1*
Strophitus subvexus	*16*	*Unionicola dimocki*	*16*
		Unionicola abnormipes	*1*
Villosa lienosa	*18*	*Unionicola serrata*	*18*
		Unionicola gailae	*18*
		Unionicola abnormipes	*1*
Toxolasma parvus	*5*	*Unionicola kavanaghi*	*4*
		Najadicola ingens	*2*
Lampsilis teres	*6*	*Unionicola hoesei*	*6*
		Unionicola abnormipes	*6*
Lampsilis hydiana	*29*	*Unionicola hoesei*	*29*
		Unionicola abnormipes	*29*
Fusconaia askewi	*60*	*Unionicola parkeri*	*30*
		Unionicola serrata	*30*
Tritogonia verrucosa	*10*	*Unionicola vamana*	*10*
		Najadicola ingens	*1*
Pleurobema riddelli	*9*	*Unionicola gowani*	*9*
Uniomerus declivus	*1*	*none*	
Quadrula p. mortoni	*8*	*Unionicola vikitra*	*8*
Leptodea fragilis	*1*	*Unionicola serrata*	*1*
Obovaria jacksoniana	*3*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

57. Louisiana. Rapides Parish. Calcasieu River ca. 5-7 miles north of junction of Rt. LA 112 and 113, northwest of Glenmora, at small bridge just east on secondary highway off Rt. LA 112. 3 August 1991. Daniel and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis teres	*2*	*Unionicola hoesei*	*2*
Tritogonia verrucosa	*1*	*none*	
Obovaria jacksoniana	*12*	*none*	
Toxolasma parvus	*1*	*none*	
Fusconaia askewi	*43*	*Unionicola parkeri*	*17*
		Unionicola serrata	*16*
Pleurobema riddelli	*1*	*Unionicola gowani*	*1*
Villosa lienosa	*13*	*Unionicola gailae*	*8*
		Unionicola serrata	*6*
Quadrula p. mortoni	*15*	*Unionicola vikitra*	*14*
Lampsilis hydiana	*18*	*Unionicola hoesei*	*17*
		Unionicola abnormipes	*3*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

58. Louisiana. Rapides Parish. Calcasieu River at Rt. LA 113, west of Glenmora. 5 October 1974. Blaine and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Strophitus subvexus	*4*	*Unionicola dimocki*	*1*
Fusconaia askewi	*21*	*Unionicola parkeri*	*9*
Toxolasma parvus	*12*	*Unionicola kavanaghi*	*10*
		Najadicola ingens	*2*
Quadrula p. mortoni	*7*	*Unionicola vikitra*	*4*
		Unionicola serrata	*1*
		Unionicola abnormipes	*1*
Obovaria jacksoniana	*26*	*none*	
Tritogonia verrucosa	*2*	*Unionicola vamana*	*2*
Villosa lienosa	*19*	*Unionicola gailae*	*17*
		Unionicola serrata	*2*
Lampsilis hydiana	*61*	*Unionicola hoesei*	*55*
		Unionicola abnormipes	*14*
		Unionicola serrata	*3*
		Najadicola ingens	*1*
Uniomerus declivus	*1*	*Unionicola stricta*	*1*
Amblema plicata	*1*	*Unionicola amandita*	*1*
		Najadicola ingens	*1*
Lampsilis teres	*1*	*Unionicola hoesei*	*1*
		Unionicola abnormipes	*1*
Campeloma decisum	*6*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

59. Louisiana. Rapides Parish. Calcasieu River at Rt. LA 113, ca. 4-5 miles west of Glenmora. 11 October 1986. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Strophitus subvexus	*1*	*Unionicola dimocki*	*1*
Fusconaia askewi	*83*	*Unionicola parkeri*	*37*
		Unionicola serrata	*20*
		Najadicola ingens	*5*
Pleurobema riddelli	*6*	*Unionicola gowani*	*1*
		Najadicola ingens	*1*
Lampsilis teres	*5*	*Unionicola hoesei*	*5*
		Unionicola abnormipes	*4*
Tritogonia verrucosa	*3*	*Unionicola vamana*	*3*
		Najadicola ingens	*1*
Quadrula p. mortoni	*8*	*Unionicola vikitra*	*7*
Uniomerus declivus	*10*	*Najadicolaingens*	*1*
		Unionicola stricta	*2*
Villosa lienosa	*33*	*Unionicola gailae*	*29*
		Unionicola serrata	*29*
		Unionicola laurentiana	*33*
Lampsilis hydiana	*35*	*Unionicola hoesei*	*34*
		Unionicola abnormipes	*16*
Obovaria jacksoniana	*20*	*none*	
Toxolasma parvus	*35*	*Unionicola kavanaghi*	*21*
		Unionicola laurentiana	*1*
		Najadicola ingens	*3*
Pyganodon grandis	*3*	*none*	
Amblema plicata	*4*	*Unionicola amandita*	*4*
		Najadicola ingens	*2*
Ligumia subrostrata	*2*	*Unionicola serrata*	*1*
Corbicula fluminea	*11*	*none*	
Campeloma decisum	*100*	*Unionicola campelomaicola*	*12*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

60. Louisiana. Allen Parish. Calcasieu River at Rt. LA 10, above impoundment, Oakdale. 27 November 1976. Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*5*	*Unionicola gailae*	*5*
		Unionicola serrata	*5*
Lampsilis hydiana	*10*	*Unionicola hoesei*	*10*
		Unionicola abnormipes	*10*
Lampsilis teres	*1*	*Unionicola hoesei*	*1*
Obovaria jacksoniana	*2*	*none*	
Quadrula p. mortoni	*1*	*Unionicola vikitrella*	*1*
Amblema plicata	*3*	*Unionicola amandita*	*2*
Toxolasma parvus	*3*	*none*	
Fusconaia askewi	*7*	*Unionicola serrata*	*1*

61. Louisiana. Allen Parish. Calcasieu River ca. 5 miles south of Oakdale. 4 June 1973. M. Topping, Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Obliquaria reflexa	*1*	*none*	
Obovaria jacksoniana	*20*	*none*	
Toxolasma parvus	*1*	*none*	
Fusconaia askewi	*4*	*Unionicola parkeri*	*2*
Quadrula p. mortoni	*19*	*Unionicola vikitra*	*10*
Lampsilis hydiana	*4*	*Unionicola hoesei*	*2*
		Unionicola abnormipes	*3*
Leptodea fragilis	*1*	*none*	
Lampsilis teres	*9*	*Unionicola hoesei*	*3*
		Unionicola abnormipes	*3*
Amblema plicata	*3*	*none*	
Lampsilis satur	*8*	*Unionicola hoesei*	*4*
		Unionicola abnormipes	*3*
		Unionicola serrata	*3*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

62. Louisiana. Allen Parish. Calcasieu River at Rt. U.S. 190, west of Kinder. 6 June 1977. M.G. Curry, B. Everitt, W. Bell, D.R. Clark, Macky and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Pyganodon grandis	1	*none*	
Tritogonia verrucosa	1	*Unionicola vamana*	1
Toxolasma parvus	1	*none*	
Uniomerus tetralasmus	2	*Najadicola ingens*	2
		Unionicola stricta	1
Villosa lienosa	1	*Unionicola gailae*	1
Plectomerus dombeyanus	4	*Unionicola tupara*	3
		Unionicola aculeata	2
Potamilus purpuratus	2	*Unionicola hoesei*	2
		Unionicola australindistincta	1
		Unionicola fulleri	1
Amblema plicata	6	*Unionicola tupara*	3
Fusconaia askewi	3	*Unionicola aculeata*	1
Quadrula p. mortoni	8	*Unionicola vikitra*	7
Obovaria jacksoniana	10	*none*	
Lampsilis satur	6	*Unionicola hoesei*	4
		Unionicola abnormipes	2
		Unionicola serrata	5
Lampsilis teres	2	*Unionicola hoesei*	2
Lampsilis hydiana	6	*Unionicola hoesei*	6
Unionicola abnormipes	2		

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

63. Louisiana. Allen Parish. Calcasieu River at Rt. U.S. 190, west of Kinder. 3 July 1976. Blake and M.F. Vidrine.

Hosts examine	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis satur	*9*	*Unionicola hoesei*	*9*
		Unionicola serrata	*7*
		Unionicola abnormipes	*7*
Potamilus purpuratus	*2*	*Unionicola hoesei*	*2*
		Unionicola fulleri	*1*
		Unionicola australindistincta	*1*
Lampsilis teres	*4*	*Unionicola hoesei*	*4*
		Unionicola aculeata	*1*
		Unionicola abnormipes	*2*
Lampsilis hydiana	*6*	*Unionicola hoesei*	*5*
		Unionicola aculeata	*1*
		Unionicola abnormipes	*4*
Quadrula p. mortoni	*12*	*Unionicola vikitra*	*10*
		Unionicola vikitrella	*10*
Uniomerus tetralasmus	*1*	*none*	
Tritogonia verrucosa	*7*	*Unionicola vamana*	*6*
		Unionicola abnormipes	*1*
Fusconaia askewi	*13*	*Unionicola parkeri*	*1*
		Unionicola aculeata	*5*
Plectomerus dombeyanus	*11*	*Unionicola tupara*	*3*
		Unionicola megachela	*3*
Amblema plicata	*17*	*Unionicola amandita*	*14*
Corbicula fluminea	*1*	*none*	
Campeloma decisum	*10*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

64. Louisiana. Allen Parish. Calcasieu River at Rt. U.S. 190, west of Kinder. 25 August 1978. D.J. Bereza, S.S. Roback, and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis satur	*24*	*Unionicola hoesei*	*24*
		Unionicola serrata	*24*
		Unionicola abnormipes	*24*
Potamilus purpuratus	*4*	*Unionicola hoesei*	*4*
		Unionicola fulleri	*4*
		Unionicola australindistincta	*4*
		Unionicola megachela	*4*
Lampsilis teres	*9*	*Unionicola hoesei*	*9*
		Unionicola abnormipes	*9*
Lampsilis hydiana	*3*	*Unionicola hoesei*	*3*
		Unionicola abnormipes	*3*
Villosa lienosa	*1*	*Unionicola gailae*	*1*
Obliquariare flexa	*1*	*Unionicola vikitra*	*1*
Plectomerus dombeyanus	*1*	*none*	
Tritogonia verrucosa	*3*	*Unionicola vamana*	*3*
Amblema plicata	*1*	*Unionicola amandita*	*1*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

65. Louisiana. Allen Parish. Calcasieu River at boat ramp at Indian Village, ca. 1.5 miles north of Jefferson Davis Parish line. 3 September 1983. Gail Quillman, Macky and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Obliquaria reflexa	*1*	*Unionicola vikitra*	*1*
Quadrula p. mortoni	*1*	*Unionicola vikitra*	*1*
Pyganodon grandis	*1*	*Unionicola megachela*	*1*
Utterbackia imbecillis	*1*	*none*	
Potamilus purpuratus	*1*	*Unionicola hoesei*	*1*
Pleurobema riddelli	*3*	*none*	
Ligumia subrostrata	*3*	*none*	
Villosa lienosa	*4*	*Unionicola gailae*	*4*
Obovaria jacksoniana	*3*	*none*	
Tritogonia verrucosa	*2*	*Unionicola vamana*	*2*
Toxolasma parvus	*9*	*none*	
Glebula rotundata	*5*	*Unionicola hoesei*	*5*
Amblema plicata	*6*	*Unionicola tupara*	*6*
Plectomerus dombeyanus	*6*	*Unionicola tupara*	*2*
Lampsilis teres	*4*	*Unionicola hoesei*	*4*
		Unionicola abnormipes	*4*
Lampsilis hydiana	*7*	*Unionicola hoesei*	*7*
		Unionicola abnormipes	*7*
Corbicula fluminea	*3*	*none*	
Campeloma decisum	*6*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

66. Louisiana. Allen Parish. Calcasieu River at boat ramp at Indian Village, ca. 1.5 miles north of Jefferson Davis Parish line. 20 October1991. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Amblema plicata	*33*	*Unionicola amandita*	*17*
Lampsilis teres	*20*	*Unionicola hoesei*	*20*
		Unionicola abnormipes	*20*
Lampsilis hydiana	*12*	*Unionicola hoesei*	*12*
		Unionicola abnormipes	*12*
Plectomerus dombeyanus	*29*	*Unionicola megachela*	*24*
		Unionicola tupara	*12*
Pyganodon grandis	*7*	*Unionicola formosa*	*2*
		Unionicola mitchelli	*3*
		Unionicola abnormipes	*1*
Utterbackia imbecillis	*2*	*Unionicola foili*	*2*
Villosa lienosa	*3*	*Unionicola gailae*	*2*
Toxolasma texasensis	*6*	*Unionicola abnormipes*	*1*
Ligumia subrostrata	*2*	*none*	
Glebula rotundata	*4*	*Unionicola hoesei*	*3*
Tritogonia verrucosa	*5*	*Unionicola vamana*	*5*
		Unionicola abnormipes	*1*
Quadrula p. mortoni	*24*	*Unionicola vikitra1*	*2*
		Unionicola vikitrella	*12*
Obovaria jacksoniana	*21*	*none*	
Corbicula fluminea	*1*	*none*	
Campeloma decisum	*7*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

67. Louisiana. Allen Parish. Bundick's Creek at Rt. LA 113. 30 August 1975. Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis hydiana	*8*	*Unionicola hoesei*	*5*
Lampsilis satur	*11*	*Unionicola hoesei*	*4*
Obovaria jacksoniana	*15*	*Unionicola campelomaicola*	*1*
Lampsilis teres	*9*	*Unionicola hoesei*	*9*
Quadrula p. mortoni	*11*	*Unionicola vikitra*	*9*
		Unionicola vikitrella	*9*
Strophitus subvexus	*1*	*none*	
Tritogonia verrucosa	*1*	*Unionicola vamana*	*1*
Campeloma decisum	*20*	*Unionicola campelomaicola*	*1*

68. Louisiana. Allen Parish. Bundick's Creek at Rt. LA 113. 17 March 1978. USL Aquatic insects class.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Leptodea fragilis	*1*	*Unionicola hoesei*	*1*

69. Louisiana. Beauregard Parish. Bundick's Creek at Rt. LA 26, east of DeRidder. 30 August 1975. Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Tritogonia verrucosa	*1*	*none*	
Lampsilis hydiana	*11*	*Unionicola hoesei*	*11*
		Unionicola abnormipes	*2*
Quadrula p . mortoni	*1*	*Unionicola vikitra*	*1*
Fusconaia askewi	*8*	*Unionicola parkeri*	*3*
Campeloma decisum	*5*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

70. Louisiana. Allen Parish. Whiskey Chitto just north of Rt. U.S. 190, near LeBlanc at Methodist Day Camp. 23 May 1977. Darryl Felder.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Amblema plicata	*1*	*Unionicola aculeata*	*1*
Lampsilis satur	*3*	*Unionicola aculeata*	*1*
		Unionicola hoesei	*3*
		Unionicola abnormipes	*3*
		Unionicola serrata	*2*
Lampsilis teres	*1*	*Unionicola hoesei*	*1*
		Unionicola abnormipes	*1*
		Unionicola serrata	*1*
Obovaria jacksoniana	*1*	*Unionicola aculeata*	*1*

71. Louisiana. Allen Parish. Whiskey Chitto at Rt. LA 26. 27 November 1976. Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Fusconaia askewi	*10*	*Unionicola parkeri*	*10*
Obovaria jacksoniana	*4*	*none*	
Lampsilis hydiana	*10*	*Unionicola hoesei*	*10*
		Unionicola abnormipes	*10*
Quadrula p. mortoni	*1*	*Unionicola vikitra*	*1*
Villosa lienosa	*1*	*Unionicola gailae*	*1*
Corbicula fluminea	*4*	*none*	
Campeloma decisum	*1*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

72. Louisiana. Beauregard Parish. Bundick's Creek at Rt. LA 113, ca. 1 mile north of Dry Creek. 19 July 1975. Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis satur	*7*	*Unionicola hoesei*	*5*
Strophitus subvexus	*1*	*none*	
Villosa lienosa	*1*	*none*	
Lampsilis hydiana	*1*	*Unionicola hoesei*	*1*
Quadrula p. mortoni	*9*	*Unionicola vikitra*	*6*
		Unionicola vikitrella	*6*
Lampsilis teres	*4*	*Unionicola hoesei*	*4*
Fusconaia askewi	*2*	*none*	
Truncilla donaciformis	*1*	*none*	
Obovaria jacksoniana	*5*	*none*	
Campeloma decisum	*10*	*none*	

73. Louisiana. Vernon Parish. Thompson Brook (Ten Mile Creek) at Rt. LA 113. 17 March 1978. USL Aquatic insects class.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis hydiana	*10*	*Unionicola hoesei*	*10*
		Unionicola abnormipes	*10*
Fusconaia askewi	*4*	*Unionicola parkeri*	*3*
		Unionicola serrata	*3*
Toxolasma parvus	*8*	*Unionicola serrata*	*1*
		Unionicola kavanaghi	*8*
		Najadicola ingens	*4*
Villosa lienosa	*12*	*Unionicola gailae*	*12*
		Unionicola serrata	*12*
Campeloma decisum	*4*	*none*	

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

74. Louisiana. Vernon Parish. Thompson Brook (Ten Mile Creek) at Rt. LA 113. 1 April 1994. M.F. Vidrine

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Strophitus subvexus	*1*	*Unionicola dimocki*	*1*

75. Louisiana. Beauregard Parish. Deer Creek at Rt. LA 26, ca. 3 miles east of Bundick's Creek. 30 August 1975. Blake and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Lampsilis hydiana	*9*	*Unionicola hoesei*	*7*
		Unionicola abnormipes	*2*
Villosa lienosa	*5*	*Unionicola gailae*	*4*
Campeloma decisum	*1*	*none*	

76. Louisiana. Vernon Parish. Mims Creek at Rt. LA 465. 21 June 1975. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Uniomerus tetralasmus	*9*	*Unionicola stricta*	*8*

77. Louisiana. Vernon Parish. Drake's Creek at Lookout Road, Fort Polk. 19 August 1991. Charles Allen, Dawn Allen, and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Utterbackia imbecillis	*48*	*Unionicola foili*	*48*

(= *Utterbackia* sp. nr. *peggyae sensu* Hoeh 1994, personal communication)

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

78. Louisiana. Vernon Parish. Comrade Creek ca. 4 km downstream from Kurthwood Road, downstream from Peason Ridge (Ft.Polk). 1990. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Uniomerus tetralasmus	*1*	*none*	
Obovaria jacksoniana	*1*	*none*	
Villosa lienosa	*5*	*Unionicola gailae*	*5*
		Unionicola serrata	*2*
Lampsilis hydiana	*10*	*Unioincola hoesei*	*10*
		Unionicola abnormipes	*5*
		Unionicola serrata	*1*

79. Louisiana. Vernon Parish. Drake's Creek ca. ½ mile downstream from Lookout Road, Kisatchie National Forest. 26 September 1993. James Cordes and M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Uniomerus tetralasmus	*3*	*Najadicola ingens*	*3*
		Unionicola serrata	*1*
Lampsilis hydiana	*3*	*Najadicola ingens*	*1*
		Unionicola hoesei	*2*
		Unionicola abnormipes	*1*
Villosa lienosa	*4*	*Unionicola gailae*	*2*
Utterbackia imbecillis	*1*	*none*	

80. Louisiana. Vernon Parish. Liberty Creek at northwest edge of Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*2*	*Unionicola gailae*	*2*
		Unionicola serrata	*2*
		Unionicola abnormipes	*1*
Lampsilis hydiana	*8*	*Unionicola hoesei*	*8*
		Unionicola abnormipes	*8*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

81. Louisiana. Vernon Parish. Bundick's Creek at junction with Hogpen Branch, south of Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*1*	*Unionicola gailae*	*1*
		Unionicola laurentiana	*1*
Uniomerus tetralasmus	*1*	*none*	

82. Louisiana. Vernon Parish. Drake's Creek at Lookout Road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Toxolasma parvus	*5*	*Unionicola kavanaghi*	*5*
Fusconaia askewi	*11*	*none*	
Villosa lienosa	*17*	*Unionicola gailae*	*11*
		Unionicola serrata	*10*
Lampsilis hydiana	*12*	*Unioincola hoesei*	*12*
		Unionicola abnormipes	*2*
Campeloma decisum	*20*	*none*	

83. Louisiana. Vernon Parish. Whiskey Chitto Creek at Mill Creek Road (East Fork) ca. 50 m north of the road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*1*	*none*	
Uniomerus tetralasmus	*1*	*Unionicola stricta*	*1*
		Najadicola ingens	*1*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

84. Louisiana. Vernon Parish. Whiskey Chitto Creek at Mill Creek Road (East Fork) ca. 120 m north of road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*2*	*Unionicola laurentiana*	*2*
Uniomerus tetralasmus	*9*	*Unionicola stricta*	*9*
		Najadicola ingens	*9*
		Unionicola laurentiana	*1*
Toxolasma parvus	*2*	*none*	
Lampsilis hydiana	*13*	*Unionicola hoesei*	*10*
		Unionicola abnormipes	*8*
		Unionicola laurentiana	*4*

85. Louisiana. Vernon Parish. Whisky Chitto at Lookout Road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*14*	*Unionicola gailae*	*14*
		Unionicola serrata	*14*
Strophitus subvexus	*1*	*Unionicola dimocki*	*1*
Obovaria jacksoniana	*21*	*none*	
Toxolasma parvus	*27*	*Unionicola kavanaghi*	*27*
		Unionicola serrata	*19*
Lampsilis hydiana	*16*	*Unionicola hoesei*	*16*
Fusconaia askewi	*14*	*Unionicola serrata*	*10*
Campeloma decisum	*3*	*none*	

86. Louisiana. Vernon Parish. Whisky Chitto at Lookout Road, Fort Polk Military Base. 11-12 August 1994. M.F. Vidrine, C.M. Allen, Andy Allen, and Harland Guillory.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Strophitus subvexus	*4*	*Unionicola dimocki*	*4*
Fusconaia askewi	*1*	*Unionicola serrata*	*1*

Table B6. Mussels collected from Fort Polk, Kisatchie National Forest, and the Calcasieu drainages just downstream from the sites selected for this study. Station numbers correspond to those in the original text (Vidrine, 1996c)--Continued

87. Louisiana. Vernon Parish. Birds Creek at Lookout Road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*10*	*Unionicola gailae*	*10*
		Unionicola serrata	*8*
Toxolasma parvus	*8*	*none*	
Lampsilis hydiana	*25*	*Unionicola hoesei*	*25*
		Unionicola abnormipes	*23*
Fusconaia askewi	*10*	*Najadicola ingens*	*1*

88. Louisiana. Vernon Parish. West Fork Six Mile Creek, Range 36, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Villosa lienosa	*2*	*Unionicola gailae*	*2*
Lampsilis hydiana	*1*	*Unionicola hoesei*	*1*

89. Louisiana. Vernon Parish. West Fork Six Mile Creek at Lookout Road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Toxolasma parvus	*2*	*Unionicola kavanaghi*	*2*

90. Louisiana. Vernon Parish. East Fork Six Mile Creek at Lookout Road, Fort Polk Military Base. November 1988. M.F. Vidrine.

Hosts examined	Number of hosts examined	Parasites	Number of hosts infested
Fusconaia askewi	*1*	*none*	
Lampsilis hydiana	*10*	*Unionicola hoesei*	*9*

APPENDIX C:

BOTANICAL SUMMARY OF THE LIMITED USE AREA, VERNON RANGER DISTRICT, KISATCHIE NATIONAL FOREST, LOUISIANA

CONTENTS

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INTRODUCTION

This report is based on field trips to the Kisatchie National Forest Limited Use Area in the Fall of 1996. Additional information comes from field trips and guided tours in the Limited Use Area since 1983. Some pertinent information also comes from fieldwork conducted on adjacent Fort Polk lands since 1983. The biota of Fort Polk has been the subject of a number of contracted studies and surveys and Fort Polk has one of the most (if not the most) complete inventories of plants and animals in the state of Louisiana. Supplementary data come from some of those reports. If one analyzes the Fort Polk biota inventory, it becomes apparent that management of Fort Polk has resulted in the creation of a habitat island in west central Louisiana.

PRESENT STATUS OF BOTANICAL KNOWLEDGE

Plant Species

The Limited Use Area has a diverse assemblage of vascular plants of 1297 species plus an additional 72 species that are reported from nearby Fort Polk and/or Vernon Parish. A listing of the plant species known to occur in the Limited Use Area is in Table C1. All species are listed with a common name and its family. The largest family is the Grass Family (Poaceae) with 190 species followed by the Sunflower Family (Asteraceae) with 180 species, the Sedge Family (Cyperaeae) with 119 species and the Legume Family (Fabaceae) with 97 species.

In Table C2, each species is listed and the vegetation type(s) that it is usually associated with is indicated by "+". Some species are restricted to one vegetation type, especially those of disturbed areas, but most species are known from two or more vegetation types. Mixed Pine-Hardwood forest has the most species (561) and the open water areas has the least (52). In the Savannah areas, 500 species are known, in the disturbed areas 494, longleaf pine 457, sandy woodlands 425, riparian 401, baygalls 328, bogs 277, and swamps 260. A total of 38 species (those marked with "*") are reported from Vernon Parish and could be found in the Limited Use Area and 34 species (marked with **) are reported from Fort Polk and could be found in Limited Use Area. Almost all of these 34 species are from the Calcareous Prairie Ecosystem on the northwestern part of Fort Polk.

Vegetation

The kind of vegetation in an area is mainly controlled by the soil. Also, vegetation type is influenced by topography, water conditions, past human management techniques, and disturbances. The natural vegetation in the Kisatchie National Forest Limited Use Area can be divided into nine major types: sandy woodland, longleaf pine, mixed pine-hardwood, savannah, baygall, bog, riparian, swamp, and open water. The vegetation developed in disturbed areas constitutes the tenth vegetational type in the Limited Use Area. Four additional vegetational types are found on Fort Polk and could possibly exist in scattered and very limited areas across the Limited Use Area. These are calcareous prairie, Fleming calcareous forest, shortleaf-hickory, and sandstone glade.

The higher and dryer sites in the area are occupied by the sandy woodland vegetation type. This vegetation type is primarily located in the northern part of the area. In its natural condition, the overstory in sandy woodlands is primarily a mixture of oaks (sandjack, blackjack, and runner) and pines (loblolly, shortleaf, and longleaf). The subcanopy and shrub layer are sparse with a few clumps of the genus *Vaccinium* (deerberry, Elliott's blueberry, or tree huckleberry). The floor is mostly bare with occasional clumps of goat's rue, puccoon, bull nettle, and other herbaceous species. In areas, clumps of poison oak form dense clumps along the floor. Lichen patches, mostly of the genus *Cladonia*, are also often scattered across the floor. A typical example of this vegetation type can be seen near the intersections of Forest Service Roads 400 and 471, just south of Little Cypress Recreation Area in the southeast corner of Section 11 T1S R8W. On Fort Polk, this vegetation type is developed mostly on Betis Loamy Fine Sand.

Downslope from the sandy woodlands and on the tops of less dry hills, the vegetation that develops is the longleaf pine forest. Longleaf pine forest is characterized by scattered large individual longleaf pine trees or small clumps of younger smaller trees creating a fairly open vegetation type. The dominant overstory species is longleaf pine with patches of loblolly pine scattered in many stands. A number of hardwoods can be in the overstory but hardwoods usually form a subcanopy or midstory layer. Many of the hardwoods are oaks such as southern red, post, blackjack, sandjack, runner, water, or Darlington's. Other hardwoods in the top layers include sweet gum, black gum, flowering dogwood, red maple, mockernut hickory, or black hickory. Shrubs usually occur in patches with some of the common species including yaupon, deerberry, Elliott's blueberry, tree huckleberry, waxmyrtle, and winged sumac. There are many herbaceous species but the most common two are bracken fern and little bluestem. A good example of this vegetation type can be found in the Longleaf Scenic Area southwest of the intersection of Forest Service Roads 421 and 444 in Sections 1 & 12 T1S R8W and Sections 6 & 7 T1S R7W.

In the more mesic, less dry hillside sites and also in cutover longleaf areas, the mixed pine-hardwood forest develops. This vegetation type is highly variable ranging from almost 100% pine to about half pine and half hardwoods. The stands with more pine usually are younger and are characterized by a very dense canopy. As the stands mature, the numbers of pines decrease and the canopy becomes more open. The most common pine is loblolly but most stands contain a few longleaf and other can contain shortleaf and in a few areas, slash pines are found. In older stands and in openings in the pines in younger stands, hardwoods can become a part of the canopy. Hardwood species are similar to those of the longleaf pine forest but sandjack, blackjack, and runner oaks are not commonly observed. Yaupon, Elliott's blueberry, tree huckleberry, french mulberry, and winged sumac are common shrubs. Saplings of flowering dogwood, sassafras, and persimmon are often found in the shrub layer. A good example of this can be found along the east side of the gravel road that runs north off of Forest Service Road 443 in Section 14 T1S R7W.

Savannah vegetation can be found in small patches or strips throughout the northern part of the area in flat and wet areas along streams. A large area of savannah vegetation occurs in the flat southwestern part of the area. This vegetation is characterized by a very open canopy of scattered pine trees. In the northern area, most of the trees are longleaf but many slash pines have been planted in the southern region. In very wet areas, clumps of hardwood trees often

produce a subcanopy or midstory clump layer. Common species of these clumps include swamp blackgum, white bay, and red maple. The shrub layer is also open with scattered clumps of shrubs or saplings. Some of the shrub species usually found are red bay, white bay, large gallberry, chokecherry, and alder. Lowland bamboo vine is often twining on top of the shrubs. A dense layer of grasses-sedges and other herbaceous plants layer does fill in the space between the clumps of shrubs. Common grasses are toothache, switch, and several species of three-awns. Sedges include many species of nutsedge and especially beaksedge. Other herbaceous plants are often pitcher plants, sundews, and other plants usually found in bogs. A good example of the savannah vegetation in strips can be found downslope from the longleaf pine forest in the southern part of Section 4 T1S R8W off south of Forest Service Road 421. A good example of the large savannah vegetation type can be observed north of Forest Service Road 450 in Section 36 T1S R8W.

Bog vegetation is also called pitcher plant bog and develops in open areas in savannahs and baygalls. The area occupied by each bog is small but here are many scattered across the Limited Use Area. Bog plants are almost all herbaceous but clumps of woody plants are scattered in most bogs. These woody species could include any of those found in the savannah or baygall. Bogs are wet and almost all have a layer of peat moss (Sphagnum) right at the soil level. The soils are typically quite sandy and very acid (pH 4.5-5.0). They are underlain by an impervious sandstone or clay layer, that where conditions are right, causes ground water to constantly seep to the soil surface. Many of the obvious plants throughout the year in the bog are carnivorous including pitcher plants, sundews, butterworts, and bladderworts. Seasonally, other plants become obvious and some of these include orchids, especially members of the genus Platanthera and members of the lily, carrot, and aster families. Less obvious but perhaps more dominant are grasses and sedges, especially beaksedges. A good example of a bog can be found south of Forest Service Road 400 in Section 13 T1S R8W.

Baygall vegetation is a forested type that develops along the edges of the smaller streams. Larger baygalls change into savannahs upslope or bogs in open areas. Very narrow baygalls may grade upslope to a longleaf pine forest or even a sandy woodland. In larger streams, baygall vegetation changes into riparian vegetation downstream. Baygall vegetation is mostly a short tree or tall shrub type but in some baygalls, a taller canopy is found. Most of the trees or shrubs are evergreen and include red bay, white bay, gall berry, alder, and swamp black gum. Lowland bamboo vine is found in almost all baygalls. The most common herbaceous plants are ferns including royal, cinnamon, southern lady, sensitive, netted chain, and Virginia Chain. Peat moss (Sphagnum) is found in scattered patches on the floor of most baygalls. A good example of a baygall can be found along the small stream that drains into Drake's Creek on the east bank just south of Forest Service Road 421 Section 1 T1S R8W.

Riparian vegetation is a large tree vegetation type that develops in the well drained areas along the sides of the larger streams such as Bird's, Whiskey Chitto, Drakes, Bundick's, or Six Mile Creeks. This vegetation type has a distinct canopy of hardwood trees plus a subcanopy or midstory layer. The shrub and herb layers are often poorly developed. Common canopy species include American beech, white oak, sweet gum, winged elm, and southern magnolia. Species usually found in the subcanopy layer are blue beech, hop hornbeam, and flowering dogwood. Common shrubs include arrowwood, silver bell, big snowbell, horsesugar, azalea, and Virginia

willow. Herbaceous plants are usually scattered and some common species include inland seaoats, Christmas fern, partridge berry, elephant's foot, and many species of *Carex*. Two locations for typical riparian vegetation are just downstream from Lookout Road along the banks of the Whiskey Chitto Creek (Section 3 T1S R7W) and Bird's Creek (Section 35 T1N R7W).

Swamp vegetation develops in slow or nonmoving back water areas along the streams. It is a forest vegetation type that always has swamp black gum and usually also contains bald cypress and one or more oaks; cow, water, willow, overcup, or laurel. The crowns of these trees are usually very long vertically so the canopy is very distinct. Very few shrubs are found but the most common species is Virginia willow. In the less wet portions of the swamp, a distinct layer of herbaceous plants often develops. Common species include aster, broadleaf uniola, narrowleaf wood oats, and many species of the genus *Carex*. There are no large areas of swamp vegetation in the Limited Use Area but small patches can be found along the larger streams. One small area can be observed along Bundick's Creek off Forest Service Road 403 Section 16 T1S R8W.

There are a few open water areas in the Limited Use Area including the larger streams, larger back stream areas, beaver ponds, and some manmade ponds. Bur-reed and pond weeds are often in the water itself while along the edges, roundfruit hedgehyssop and many species of *Juncus* are often found. A limited number of other aquatics such as water lily are sporadically distributed throughout. A good example of the moving water vegetation can be found in West Fork Sixmile Creek just downstream from Lookout Road (Section 29 T1N R6W). Fullerton Lake in Section 4 T1S R6W is a manmade body of water and is the best example of the nonmoving open water habitat in the Limited Use Area.

Disturbed areas can be found along the edges of roads and around old home sites or dump sites throughout the area. Species are almost all annual and non native. Commonly encountered species are crabgrass, Johnsongrass, Pensacola Bahiagrass, ragweeds, spurges, horseweed, dog fennel, bitterweed, morning glory, clovers, horse nettle, curly dock, and common goldenrod. Disturbed areas in the Limited Use Area are small and if not redisturbed, rapidly undergo succession toward one of the native vegetation types. A fairly typical disturbed area can be found along a small trail leading east off of Forest Service Road 403 in Section 21 T1S R8W.

Rare and Endangered Species

According to the latest listing by the Louisiana Department of Natural Heritage, 39 species of Rare and Endangered species are known from the Limited Use Area and/or Fort Polk and/or Vernon Parish (Table C3). Thirteen Rare and Endangered species are known from one or more locations in the Limited Use Area. All thirteen species (*Burmannia biflora, Calopogon barbatus, Calopogon pallidus, Lachnocaulon digynum, Panicum tenerum, Platanthera integra, Rhynchospora macra, Rudbeckia scabrifolia, Sabatia macrophylla, Xyris drummondii, Xyris scabrifolia, Xyris stricta,* and *Zigadenus densus*) are plants of bogs. This points out two facts: (1) The bog habitat is very important and all bogs in the Limited Use Area should be protected and (2) most botanical excursions and studies in the Limited Use Area have concentrated on bogs.

Eleven of the Rare and Endangered Species are reported from Vernon Parish and 15 from Fort Polk. Many of these species are probably in the Limited Use Area and additional botanical excursions in the Limited Use Area will turn up records of most of these species. In the 1980's, yellowroot was discovered on Fort Polk. This is the latest woody native species to be discovered in the state and was a shocker. Most botanists believed that all woody plant species had already been documented for Louisiana. Yellowroot will probably be found in the Limited Use Area since the two known locations (in baygalls) are just north of the Fort Polk-Kisatchie National Forest Limited Use Area line. In 1996, the only native extant population of *Marshallia trinervia* in Louisiana was found on Fort Polk in the riparian forest along Bird's Creek within 100 yards of the Fort Polk-Limited Use Area boundary. Yellow Lady Slipper is known from only two locations in west central Louisiana. Both locations are in riparian forest habitats on Fort Polk. Thorough searches of these two habitats in the Limited Use Area should turn up records of these three species and other significant records. These records from Fort Polk point to the importance of Fort Polk as the habitat island in west central Louisiana.

Scenic Stream Vegetation

The vegetation along the scenic streams (Whiskey Chitto and the Sixmile Creeks) is primarily the riparian vegetation type. Immediately adjacent to the stream, the Whiskey Chitto vegetation tends to be more of an upland type while the vegetation immediately adjacent to the two Sixmile Creeks tends to be more toward the baygall type. Upslope from the two Sixmile Creeks, the vegetation is a typical upland riparian type. More upland species like sugar maple and eastern hophornbeam are found along Whiskey Chitto while wetter species like black gum and even bald cypress are found along the Sixmile Creeks. Further downstream beyond the Limited Use Area, the Sixmile Creeks vegetation does change into a more typical upland riparian vegetation type. Another difference between the two streams is in pH; Whiskey Chitto probably has a higher (less acid) pH than the Sixmile Creeks. This prediction is based on the presence and abundance of acid preferring species like peat moss (Sphagnum) along the Sixmile Creeks and the paucity of it along Whiskey Chitto Creek.

The scenic stream vegetation contains the highest diversity (richness) of woody species in the Limited Use Area. When a complete analysis is done of the woody vegetation along these streams, the number of woody species will be high and will be comparable to that of other riparian areas in the state. The herbaceous vegetation along these streams will probably contain several Rare and Endangered species including perhaps yellowroot, yellow ladies slipper, Barbara's Buttons, and possibly other species that are not reported from the area or from the state.

Except for the species of disturbed areas, most species are found in more than one vegetation type. Thirty species are known only from the Riparian Forest (Table C4) and most of these are very limited in distribution. Riparian vegetation is present in narrow strips along the streams; thus many species of this vegetation type occur in small scattered patches. Because of the large number of species, limited distribution, and the potential for discovery of rare species; the riparian vegetation-especially that along the scenic streams-is a very important resource in the Limited Use area.

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Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

Plant Species	Common Name	Family
Acacia angustissima	PRAIRIE ACACIA	FABACEAE
Acalypha gracilens	THREE-SEEDED MERCURY	EUPHORBIACEAE
Acalypha rhomboidea	THREE-SEEDED MERCURY	EUPHORBIACEAE
Acanthospermum australe	PARAGUAY BUR	ASTERACEAE
Acer barbatum	SOUTHERN SUGAR MAPLE	ACERACEAE
Acer negundo	BOXELDER	ACERACEAE
Acer rubrum var. drummondii	DRUMMOND RED MAPLE	ACERACEAE
Acer rubrum var. rubrum	RED MAPLE	ACERACEAE
Acer saccharinum	SILVER MAPLE	ACERACEAE
Acer saccharum	SUGAR MAPLE	ACERACEAE
Achillea millefolium	YARROW	ASTERACEAE
Acmella oppositifolia var. repens	CREEPING SPOTFLOWER	ASTERACEAE
Aeschynomene indica	INDIAN JOINTVETCH	FABACEAE
Aesculus pavia	RED BUCKEYE	HIPPOCASTANACEAE
Agalinis fasciculata	BEACH FALSE FOXGLOVE	SCROPHULARIACEAE
Agalinis oligophylla	RIDGESTEM FALSE FOXGLOVE	SCROPHULARIACEAE
Agalinis pinetorum	COASTALPLAIN FALSE FOXGLOVE	SCROPHULARIACEAE
Agalinis purpurea	PURPLE FALSE FOXGLOVE	SCROPHULARIACEAE
Agalinis tenuifolia	SLENDERLEAF FALSE FOXGLOVE	SCROPHULARIACEAE
Agalinis viridis	GREEN FALSE FOXGLOVE	SCROPHULARIACEAE
Ageratina altissima	WHITE SNAKE-ROOT	ASTERACEAE
Agrimonia microcarpa	SMALLFRUIT AGRIMONY	ROSACEAE
Agrostis elliottiana	ELLIOTT BENTGRASS	POACEAE
Agrostis hyemalis	WINTER BENTGRASS	POACEAE
Agrostis perennans var. perennans	AUTUMN BENTGRASS	POACEAE
Aira elegans	ANNUAL HAIRGRASS	POACEAE
Albizia julibrissin	MIMOSA	FABACEAE
Aletris aurea	YELLOW COLIC-ROOT	LILIACEAE
Aletris farinosa	WHITE COLIC-ROOT	LILIACEAE
Allium canadense var. canadense	CANADA ONION	LILIACEAE
Allium canadense var. mobilense	PINK ONION	LILIACEAE
Alnus serrulata	ALDER	BETULACEAE
Alopecurus carolinianus	CAROLINA FOXTAIL	POACEAE
Alophia drummondii	PINE WOODS LILY	IRIDACEAE
Alternanthera caracasana	CHAFF-WEED	AMARANTHACEAE
Amaranthus viridis	GREEN AMARANTH	AMARANTHACEAE
Ambrosia artemisiifolia	COMMON RAGWEED	ASTERACEAE
Ambrosia bidentata	SOUTHERN RAGWEED	ASTERACEAE
Ambrosia psilostachya	WESTERN RAGWEED	ASTERACEAE
Ambrosia trifida	GIANT RAGWEED	ASTERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Amelanchier arborea	COMMON SERVICEBERRY	ROSACEAE
Ammannia coccinea	VALLEY REDSTEM	LYTHRACEAE
Amorpha paniculata	LEADPLANT	FABACEAE
Ampelopsis arborea	PEPPERVINE	VITACEAE
Amsonia ludoviciana	LOUISIANA BLUESTAR	APOCYNACEAE
Amsonia rigida	NARROW-LEAF BLUESTAR	APOCYNACEAE
Amsonia tabernaemontana	BLUESTAR	APOCYNACEAE
Anagallis arvensis	SCARLET PIMPERNEL	PRIMULACEAE
Anagallis minima	CHAFFWEED	PRIMULACEAE
Andropogon gerardii	BIG BLUESTEM	POACEAE
Andropogon glomeratus var. glomeratus	BUSHY BEARDGRASS	POACEAE
Andropogon gyrans var. gyrans	ELLIOTT'S BLUESTEM	POACEAE
Andropogon liebmannii var. pungensis	MOHR'S BLUESTEM	POACEAE
Andropogon ternarius	SPLIT-BEARD BLUESTEM	POACEAE
Andropogon virginicus var. virginicus	BROOMSEDGE	POACEAE
Antennaria parlinii ssp. fallax	PUSSYTOES	ASTERACEAE
Anthaenantia rufa	PURPLE SILKYSCALE	POACEAE
Anthaenantia villosa	GREEN SILKYSCALE	POACEAE
Apios americana	GROUND NUT	FABACEAE
Apocynum cannabinum	INDIAN HEMP	APOCYNACEAE
Apteria aphylla	NODDING NIXIE	BURMANNIACEAE
Aralia spinosa	HERCULES' CLUB	ARALIACEAE
Arisaema dracontium	GREEN DRAGON	ARACEAE
Arisaema triphyllum	JACK-IN-THE-PULPIT	ARACEAE
Arisaema triphyllum ssp. pusillum	JACK-IN-THE-PULPIT	ARACEAE
Arisaema triphyllum ssp. quinatum	JACK-IN-THE-PULPIT	ARACEAE
Aristida dichotoma	CHURCHMOUSE THREE-AWN	POACEAE
Aristida lanosa	WOOLY THREE-AWN	POACEAE
Aristida longespica var. geniculata	SLIMSPIKE THREE-AWN	POACEAE
Aristida longespica var. longespica	SLIMSPIKE THREE-AWN	POACEAE
Aristida oligantha	OLDFIELD THREE-AWN	POACEAE
Aristida palustris	LONGLEAF THREE-AWN	POACEAE
Aristida purpurascens var. purpurascens	ARROWFEATHER THREE-AWN	POACEAE
Aristida purpurascens var. virgata	PINEWOODS THREE-AWN	POACEAE
Aristida ramosissima	S-CURVE THREE-AWN	POACEAE
Aristolochia reticulata	HAIRY DUTCHMAN'S PIPE	ARISTILOCHIACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Aristolochia serpentaria	VIRGINIA DUTCHMAN'S PIPE	ARISTILOCHIACEAE
Aristolochia tomentosa	DUTCHMAN'S PIPE VINE	ARISTILOCHIACEAE
Aronia arbutifolia	CHOKECHERRY	ROSACEAE
Arundinaria gigantea ssp. gigantea	GIANT CANE	POACEAE
Asclepias amplexicaulis	BLUNT-LEAVED MILKWEED	ASCLEPIADACEAE
Asclepias longifolia	LONGLEAF MILKWEED	ASCLEPIADACEAE
Asclepias obovata	SAVANNAH MILKWEED	ASCLEPIADACEAE
Asclepias perennis	SHORE MILKWEED	ASCLEPIADACEAE
Asclepias rubra	RED MILKWEED	ASCLEPIADACEAE
Asclepias tuberosa	BUTTERFLY-WEED	ASCLEPIADACEAE
Asclepias variegata	WHITE-FLOWERED MILKWEED	ASCLEPIADACEAE
Asclepias verticillata	WHORLED MILKWEED	ASCLEPIADACEAE
Asclepias viridiflora	GREEN-FLOWERED MILKWEED	ASCLEPIADACEAE
Asclepias viridis	ANTELOPE-HORN	ASCLEPIADACEAE
Asimina parviflora	DWARF PAWPAW	ANNONACEAE
Asimina triloba	PAWPAW	ANNONACEAE
Asplenium platyneuron	EBONY SPLEENWORT	ASPLENIACEAE
Aster drummondii var. drummondii	DRUMMOND'S ASTER	ASTERACEAE
Aster dumosus	BUSHY ASTER	ASTERACEAE
Aster fragilis	ASTER	ASTERACEAE
Aster lanceolatus	ASTER	ASTERACEAE
Aster lateriflorus	CALICO ASTER	ASTERACEAE
Aster paludosus ssp. hemisphericus	SHOWY ASTER	ASTERACEAE
Aster patens var. patens	LATE ASTER	ASTERACEAE
Aster pilosus	FROSTWEED	ASTERACEAE
Aster sericeus var. microphyllus	SILKY ASTER	ASTERACEAE
Aster subulatus var. ligulatus	ANNUAL ASTER	ASTERACEAE
Aster subulatus var. subulatus	ANNUAL ASTER	ASTERACEAE
Aster umbellatus var. latifolius	BAYGALL WHITE ASTER	ASTERACEAE
Athyrium filix-femina	SOUTHERN LADY FERN	WOODSIACEAE
Aureolaria flava	SMOOTH YELLOW FALSE FOXGLOVE	SCROPHULARIACEAE
Aureolaria grandiflora	LARGEFLOWER YELLOW FALSE FOXGLOVE	SCROPHULARIACEAE
Aureolaria pectinata	COMBLEAF YELLOW FALSE FOXGLOVE	SCROPHULARIACEAE
Aureolaria virginica	DOWNY YELLOW FALSE FOXGLOVE	SCROPHULARIACEAE
Avena sativa	COMMON OATS	POACEAE
Axonopus affinis	COMMON CARPETGRASS	POACEAE
Axonopus furcatus	BIG CARPETGRASS	POACEAE
Baccharis halimifolia	SALTBUSH	ASTERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Bacopa caroliniana	BLUE WATERHYSSOP	SCROPHULARIACEAE
Baptisia alba var. macrophylla	WHITE WILD INDIGO	FABACEAE
Baptisia bracteata var. laevicaulis	LONGBRACT WILD INDIGO	FABACEAE
Baptisia bracteata var. leucophaea	LONGBRACT WILD INDIGO	FABACEAE
Baptisia nuttalliana	NUTTALL'S WILD INDIGO	FABACEAE
Bartonia paniculata	TWINING SCREWSTEM	GENTIANACEAE
Berchemia scandens	RATTAN VINE	RHAMNACEAE
Berlandiera pumila	SPOT GREENEYES	ASTERACEAE
Berlandiera x betonicifolia	HAIRY GREENEYES	ASTERACEAE
Betula nigra	RIVER BIRCH	BETULACEAE
Bidens aristosa	BEARDED BEGGAR'S TICKS	ASTERACEAE
Bidens bipinnata	SPANISH NEEDLES	ASTERACEAE
Bidens discoidea	FLOATING-LOG BEGGAR'S TICKS	ASTERACEAE
Bidens frondosa	DEVIL'S BEGGAR'S TICKS	ASTERACEAE
Bigelowia nuttallii	RAYLESS GOLDENROD	ASTERACEAE
Bignonia capreolata	CROSS-VINE	BIGNONIACEAE
Boehmeria cylindrica	SMALLSPIKE FALSENETTLE	URTICACEAE
Boerhaavia erecta	ERECT SPIDERLING	NYCTAGINACEAE
Boltonia diffusa	SMALLHEAD DOLL'S DAISY	ASTERACEAE
Bothriochloa ischaemum	KINGRANCH BLUESTEM	POACEAE
Bothriochloa laguroides ssp. torreyana	SILVER BLUESTEM	POACEAE
Botrychium biternatum	SPARSE-LOBED GRAPE FERN	OPHIOGLOSSACEAE
Botrychium virginianum	RATTLESNAKE FERN	OPHIOGLOSSACEAE
Brachiaria platyphylla	BROADLEAF SIGNALGRASS	POACEAE
Brachyelytrum erectum	BEARDED SHORTHUSK	POACEAE
Brasenia schreberi	WATER SHIELD	CABOMBACEAE
Brassica juncea	INDIAN MUSTARD	BRASSICACEAE
Brickellia eupatorioides	FALSE BONESET	ASTERACEAE
Briza minor	LITTLE QUAKINGGRASS	POACEAE
Bromus japonicus	JAPANESE BROMEGRASS	POACEAE
Bromus pubescens	CANADA BROMEGRASS	POACEAE
Bromus racemosus	HAIRY BROMEGRASS	POACEAE
Bromus tectorum	DOWNY BROMEGRASS	POACEAE
Bromus unioloides	RESCUEGRASS	POACEAE
Brunnichia ovata	LADIES EARDROP VINE	POLYGONACEAE
Buchnera americana	BLUEHEARTS	SCROPHULARIACEAE
Bulbostylis barbata	HAIR-SEDGE	CYPERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Bulbostylis capillaris	HAIR-SEDGE	CYPERACEAE
Bulbostylis ciliatifolia	HAIR-SEDGE	CYPERACEAE
Bumelia lanuginosa	GUM BULLY	SAPOTACEAE
Bumelia lycioides	BUCKTHORN BULLY	SAPOTACEAE
Burmannia biflora	BLUE BURMANNIA	BURMANNIACEAE
Burmannia capitata	BURMANNIA	BURMANNIACEAE
Cabomba caroliniana	FANWORT	CABOMBACEAE
Cacalia ovata	INDIAN PLANTAIN	ASTERACEAE
Cacalia plantaginea	TUBEROUS INDIAN PLANTAIN	ASTERACEAE
Callicarpa americana	AMERICAN BEAUTYBERRY	VERBENACEAE
Callirhoe papaver	WINECUP	MALVACEAE
Callitriche heterophylla	WATER STARWORT	CALLITRICHACEAE
Callitriche nuttallii	TERRESTRIAL STARWORT	CALLITRICHACEAE
Callitriche peploides	TERRESTIAL STARWORT	CALLITRICHACEAE
Calopogon barbatus	BEARDED GRASS-PINK	ORCHIDACEAE
Calopogon pallidus	PALE GRASS-PINK	ORCHIDACEAE
Calopogon tuberosus	COMMON GRASS-PINK	ORCHIDACEAE
Calyptocarpus vialis	STRAGGLER DAISY	ASTERACEAE
Camelina microcarpa	SMALLSEED FALSEFLAX	BRASSICACEAE
Campsis radicans	TRUMPET CREEPER	BIGNONIACEAE
Cardamine bulbosa	BULBOUS BITTER CRESS	BRASSICACEAE
Cardamine hirsuta	HAIRY BITTER CRESS	BRASSICACEAE
Cardamine parviflora	SAND BITTERCRESS	BRASSICACEAE
Carex alata	WINGSEED CARIC SEDGE	CYPERACEAE
Carex albolutescens	GREENISH-WHITE CARIC SEDGE	CYPERACEAE
Carex amphibola	NARROWLEAF CARIC SEDGE	CYPERACEAE
Carex atlantica	EASTERN CARIC SEDGE	CYPERACEAE
Carex caroliniana	CAROLINA CARIC SEDGE	CYPERACEAE
Carex cephalophora	WOODBANK CARIC SEDGE	CYPERACEAE
Carex cherokeensis	CHEROKEE CARIC SEDGE	CYPERACEAE
Carex comosa	BRISTLY CARIC SEDGE	CYPERACEAE
Carex complanata	CARIC SEDGE	CYPERACEAE
Carex corrugata	CARIC SEDGE	CYPERACEAE
Carex crebriflora	CARIC SEDGE	CYPERACEAE
Carex debilis	SPINDLEFRUIT CARIC SEDGE	CYPERACEAE
Carex digitalis	WOOD CARIC SEDGE	CYPERACEAE
Carex flaccosperma	THIN-FRUIT CARIC SEDGE	CYPERACEAE
Carex folliculata	BLADDER CARIC SEDGE	CYPERACEAE
Carex frankii	FRANK'S CARIC SEDGE	CYPERACEAE
Carex glaucescens	CLUSTERED SEDGE	CYPERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Carex glaucodea	SOUTHERN CARIC SEDGE	CYPERACEAE
Carex howei	CARIC SEDGE	CYPERACEAE
Carex intumescens	COMMON BLADDER CARIC SEDGE	CYPERACEAE
Carex joorii	HUMMOCK CARIC SEDGE	CYPERACEAE
Carex leptalea	THREADSTEM CARIC SEDGE	CYPERACEAE
Carex longii	LONG'S CARIC SEDGE	CYPERACEAE
Carex lurida	SUMMER CARIC SEDGE	CYPERACEAE
Carex microdonta	LITTLETOOTH CARIC SEDGE	CYPERACEAE
Carex muhlenbergii	MUHLENBERG'S CARIC SEDGE	CYPERACEAE
Carex nigromarginata	CARIC SEDGE	CYPERACEAE
Carex oxylepis	SHARPSCALE CARIC SEDGE	CYPERACEAE
Carex rosea	STELLATE CARIC SEDGE	CYPERACEAE
Carex tenax	CARIC SEDGE	CYPERACEAE
Carex tribuloides	BRISTLE-BRACT CARIC SEDGE	CYPERACEAE
Carex verrucosa	CARIC SEDGE	CYPERACEAE
Carpinus caroliniana	BLUE BEECH	BETULACEAE
Carya alba	MOCKERNUT HICKORY	JUGLANDACEAE
Carya aquatica	WATER HICKORY	JUGLANDACEAE
Carya cordiformis	BITTERNUT HICKORY	JUGLANDACEAE
Carya glabra	PIGNUT HICKORY	JUGLANDACEAE
Carya glabra var. hirsuta	PIGNUT HICKORY	JUGLANDACEAE
Carya illinoensis	PECAN	JUGLANDACEAE
Carya myristicaeformis	NUTMEG HICKORY	JUGLANDACEAE
Carya ovata	SHAGBARK HICKORY	JUGLANDACEAE
Carya texana	BLACK HICKORY	JUGLANDACEAE
Cassia fasciculata	PARTRIDGE PEA	FABACEAE
Cassia marilandica	MARYLAND COFFEE WEED	FABACEAE
Cassia nictitans	PARTRIDGE PEA	FABACEAE
Cassia occidentalis	SEPTICWEED	FABACEAE
Castanea pumila	CHINQUAPIN	FAGACEAE
Catalpa bignonioides	SOUTHERN CATALPA	BIGNONIACEAE
Ceanothus americanus	NEW JERSEY TEA	RHAMNACEAE
Celtis laevigata	HACKBERRY	ULMACEAE
Celtis laevigata var. reticulata	NETLEAF HACKBERRY	ULMACEAE
Celtis tenuifolia	DWARF HACKBERRY	ULMACEAE
Cenchrus incertus	COAST SANDBUR	POACEAE
Centella erecta	SPADELEAF	APIACEAE
Centrosema virginiana	SPURRED BUTTERFLY PEA	FABACEAE
Cephalanthus occidentalis	BUTTONBUSH	RUBIACEAE
Cerastium glomeratum	MOUSE-EAR CHICKWEED	CARYOPHYLLACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Ceratophyllum demersum	COONTAIL	CERATOPHYLLACEAE
Cercis canadensis	REDBUD	FABACEAE
Chaerophyllum tainturieri	WILD CHERVIL	APIACEAE
Chamaesyce cordifolia	HEART-LEAF SPURGE	EUPHORBIACEAE
Chamaesyce maculata	SPOTTED SPURGE	EUPHORBIACEAE
Chamaesyce nutans	EYE-BANE	EUPHORBIACEAE
Chamaesyce serpens	MAT SPURGE	EUPHORBIACEAE
Chaptalia tomentosa	SUN-BONNETS	ASTERACEAE
Chasmanthium latifolium	INLAND SEAOATS	POACEAE
Chasmanthium laxum	BROADLEAF UNIOLA	POACEAE
Chasmanthium sessiliflorum	NARROWLEAF WOOD OATS	POACEAE
Chenopodium ambrosioides	MEXICAN TEA	CHENOPODIACEAE
Chionanthus virginica	FRINGE TREE	OLEACEAE
Chloris virgata	FEATHER FINGERGRASS	POACEAE
Chrysopsis graminifolia	GRASSLEAF GOLDENASTER	ASTERACEAE
Chrysopsis mariana	MARYLAND GOLDENASTER	ASTERACEAE
Chrysopsis pilosa	HOARY GOLDENASTER	ASTERACEAE
Ciclospermum leptophyllum	SLIMLOBE CELERY	APIACEAE
Cirsium carolinianum	CAROLINA THISTLE	ASTERACEAE
Cirsium horridulum	HORRID THISTLE	ASTERACEAE
Claytonia virginica	SPRING BEAUTY	PORTULACEAE
Cleistes divaricata	SPREADING POGONIA	ORCHIDACEAE
Clematis crispa	SWAMP LEATHER FLOWER	RANUNCULACEAE
Clematis reticulata	NETLEAF LEATHER FLOWER	RANUNCULACEAE
Clematis terniflora	SWEET AUTUMN VIRGINSBOWER	RANUNCULACEAE
Clematis virginiana	DEVIL'S DARNING NEEDLES	RANUNCULACEAE
Cleome hassleriana	SPIDER LEGS	CAPPARACEAE
Clitoria mariana	BUTTERFLY PEA	FABACEAE
Cnidoscolus texanus	LARGE BULL NETTLE	EUPHORBIACEAE
Cocculus carolina	CAROLINA SNAILSEED	MENISPERMACEAE
Coelorachis cylindrica	CAROLINA JOINTGRASS	POACEAE
Coelorachis rugosa	WRINKLED JOINTGRASS	POACEAE
Colocasia antiquorum	ELEPHANT'S EAR	ARACEAE
Commelina communis	COMMON DAYFLOWER	COMMELINACEAE
Commelina diffusa	WIDOW'S TEARS	COMMELINACEAE
Commelina erecta	NARROWLEAF DAYFLOWER	COMMELINACEAE
Commelina virginica	BROAD-LEAF DAYFLOWER	COMMELINACEAE
Conyza bonariensis	LARGE-HEAD HORSEWEED	ASTERACEAE
Conyza canadensis var. canadensis	HORSEWEED	ASTERACEAE
Conyza canadensis var. pusilla	SMALL-HEAD HORSEWEED	ASTERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Coreopsis gladiata	TICKSEED	ASTERACEAE
Coreopsis lanceolata	COMMON TICKSEED	ASTERACEAE
Coreopsis linifolia	BOG TICKSEED	ASTERACEAE
Coreopsis pubescens	STAR TICKSEED	ASTERACEAE
Coreopsis tinctoria	PAINTED TICKSEED	ASTERACEAE
Coreopsis tripteris	TALL TICKSEED	ASTERACEAE
Cornus drummondii	ROUGH-LEAF DOGWOOD	CORNACEAE
Cornus florida	FLOWERING DOGWOOD	CORNACEAE
Cornus foemina	SWAMP DOGWOOD	CORNACEAE
Coronopus didymus	SWINE CRESS	BRASSICACEAE
Cortaderia dioica	PAMPASGRASS	POACEAE
Crataegus berberifolia	BARBERRY HAWTHORN	ROSACEAE
Crataegus brachyacantha	BLUEBERRY HAWTHORN	ROSACEAE
Crataegus crus-gallii	COCKS-SPUR HAWTHORN	ROSACEAE
Crataegus marshallii	PARSLEY HAWTHORN	ROSACEAE
Crataegus opaca	MAYHAW	ROSACEAE
Crataegus spathulata	LITTLEHIP HAWTHORN	ROSACEAE
Crataegus uniflora	DWARF HAWTHORN	ROSACEAE
Crataegus viridis	GREEN HAWTHORN	ROSACEAE
Croptilon divaricatum	SCRATCH DAISY	ASTERACEAE
Crotalaria lanceolata	ETHIOPIAN RATTLEBOX	FABACEAE
Crotalaria sagittalis	ARROWHEAD RATTLEBOX	FABACEAE
Croton argyranthemus	SILVER-LEAF CROTON	EUPHORBIACEAE
Croton capitatus	GOATWEED, WOOLY CROTON	EUPHORBIACEAE
Croton glandulosus	TROPIC CROTON	EUPHORBIACEAE
Croton michauxii	NARROWLEAF RUSHFOIL	EUPHORBIACEAE
Croton monanthogynus	ONE-SEED CROTON, PRAIRIE TEA	EUPHORBIACEAE
Croton willdenowii	RUSHFOIL	EUPHORBIACEAE
Ctenium aromaticum	TOOTHACHEGRASS	POACEAE
Cuphea carthagenensis	COLOMBIAN WAXWEED	LYTHRACEAE
Cuscuta compacta	DODDER	CUSCUTACEAE
Cynodon dactylon	BERMUDAGRASS	POACEAE
Cynoglossum virginianum	HOUND'S TONGUE	BORAGINACEAE
Cyperus acuminatus	TAPERLEAF FLATSEDGE	CYPERACEAE
Cyperus albomarginatus	WHITE-EDGE FLATSEDGE	CYPERACEAE
Cyperus brevifolius	SHORTLEAF FLATSEDGE	CYPERACEAE
Cyperus compressus	POORLAND FLATSEDGE	CYPERACEAE
Cyperus erythrorhizos	REDROOT FLATSEDGE	CYPERACEAE
Cyperus flavescens var. flavescens	YELLOW FLATSEDGE	CYPERACEAE
Cyperus globulosus	GLOBE FLATSEDGE	CYPERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Cyperus grayioides	DEEP SAND FLATSEDGE	CYPERACEAE
Cyperus haspan	SOFort FLAT-SEDGE	CYPERACEAE
Cyperus iria	RICEFIELD FLATSEDGE	CYPERACEAE
Cyperus odoratus	FRAGRANT FLATSEDGE	CYPERACEAE
Cyperus ovularis		
var. ovularis	GLOBE FLATSEDGE	CYPERACEAE
Cyperus polystachyos		
var. polystachyos	FLATSEDGE	CYPERACEAE
Cyperus polystachyos		
var. texensis	TEXAS FLATSEDGE	CYPERACEAE
Cyperus pseudovegetus	KNOB FLATSEDGE	CYPERACEAE
Cyperus reflexus	BENTAWN FLATSEDGE	CYPERACEAE
Cyperus retrofractus	ROUGH FLATSEDGE	CYPERACEAE
Cyperus retrorsus	CYLINDRIC FLATSEDGE	CYPERACEAE
Cyperus rotundus	PURPLE NUTSEDGE	CYPERACEAE
Cyperus sesquiflorus	LOW FLATSEDGE	CYPERACEAE
Cyperus strigosus	FALSE NUTSEDGE	CYPERACEAE
Cyperus surinamensis	TROPICAL FLATSEDGE	CYPERACEAE
Cyperus tenuifolius	LAWN FLATSEDGE	CYPERACEAE
Cyperus uniflorus	ONEFLOWER FLATSEDGE	CYPERACEAE
Cyperus virens	GREEN FLATSEDGE	CYPERACEAE
Cypripedium kentuckiense	YELLOW LADY SLIPPER	ORCHIDACEAE
Cyrilla racemiflora	TITI	CYRILLACEAE
Dactylis glomerata	ORCHARDGRASS	POACEAE
Dalea candida	WHITE PRAIRIECLOVER	FABACEAE
Dalea purpurea	PURPLE PRAIRIECLOVER	FABACEAE
Danthonia spicata	POVERTY OATGRASS	POACEAE
Datura stramonium	JIMSON WEED	SOLANACEAE
Daucus pusillus	AMERICAN WILD CARROT	APIACEAE
Delphenium vimineum	CAROLINA LARKSPUR	RANUNCULACEAE
Delphinium carolinianum	CAROLINA LARKSPUR	RANUNCULACEAE
Desmanthus illinoiensis	ILLINOIS BUNDLEFLOWER	FABACEAE
Desmodium ciliare	HAIRY SMALLLEAF TICKTREFOIL	FABACEAE
Desmodium glabellum	DILLENIUS' TICKTREFOIL	FABACEAE
Desmodium glutinosum	POINTEDLEAF TICKTREFOIL	FABACEAE
Desmodium laevigatum	SMOOTH TICKTREFOIL	FABACEAE
Desmodium lineatum	SAND TICKTREFOIL	FABACEAE
Desmodium nudiflorum	NAKED FLOWER TICKTREFOIL	FABACEAE
Desmodium obtusum	STIFF TICKTREFOIL	FABACEAE
Desmodium paniculatum	PANICLEDLEAF TICKTREFOIL	FABACEAE
Desmodium pauciflorum	FEWFLOWER TICKTREFOIL	FABACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Desmodium rotundifolium	PROSTRATE TICKTREFOIL	FABACEAE
Desmodium strictum	PINEBARREN TICKTREFOIL	FABACEAE
Desmodium viridiflorum	VELVETLEAF TICKTREFOIL	FABACEAE
Dichondra caroliniensis	PONY FOOT	CONVOLVULACEAE
Dichromena colorata	WHITETOP SEDGE	CYPERACEAE
Dichromena latifolia	LARGE WHITETOP SEDGE	CYPERACEAE
Dicliptera brachiata	BRANCHING FOLDWING	ACANTHACEAE
Digitaria ciliaris	SOUTHERN CRABGRASS	POACEAE
Digitaria filiformis	SLENDER CRABGRASS	POACEAE
Digitaria ischaemum	SMOOTH CRABGRASS	POACEAE
Digitaria sanguinalis	HAIRY CRABGRASS	POACEAE
Digitaria villosa	SHAGGY CRABGRASS	POACEAE
Digitaria violascens	VIOLET CRABGRASS	POACEAE
Diodia teres	POOR JOE	RUBIACEAE
Diodia virginiana	VIRGINIA BUTTONWEED	RUBIACEAE
Dioscorea villosa	WILD YAM	DIOSCOREACEAE
Diospyros virginiana	PERSIMMON	EBENACEAE
Draba brachycarpa	WHITLOW-GRASS	BRASSICACEAE
Dracopsis amplexicaulis	CLASPING CONEFLOWER	ASTERACEAE
Drosera brevifolia	SUNDEW	DROSERACEAE
Drosera capillaris	SUNDEW	DROSERACEAE
Drymaria cordata	DRYMARIA	CARYOPHYLLACEAE
Duchesnea indica	WILD STRAWBERRY	ROSACEAE
Echinacea angustifolia	NARROW-LEAF PURPLE CONEFLOWER	ASTERACEAE
Echinacea pallida	PALE PURPLE CONEFLOWER	ASTERACEAE
Echinacea purpurea	PURPLE CONEFLOWER	ASTERACEAE
Echinacea sanguinea	PALE PURPLE CONEFLOWER	ASTERACEAE
Echinochloa colona	JUNGLERICE	POACEAE
Echinochloa crus-galli	BARNYARDGRASS	POACEAE
Echinochloa walteri	WATER MILLET	POACEAE
Echinodorus cordifolius	CREEPING BURHEAD	ALISMATACEAE
Eclipta prostrata	PIE PLANT	ASTERACEAE
Egeria densa	SOUTHERN ELODEA	HYDROCHARITACEAE
Eichhornia crassipes	WATER HYACINTH	PONTEDERIACEAE
Eleocharis baldwinii	BALDWIN SPIKESEDGE	CYPERACEAE
Eleocharis elliptica	FLATTENED SPIKESEDGE	CYPERACEAE
Eleocharis equisetoides	HORSETAIL SPIKESEDGE	CYPERACEAE
Eleocharis flavescens	PALE SPIKESEDGE	CYPERACEAE
Eleocharis microcarpa	SMALLSEED SPIKESEDGE	CYPERACEAE
Eleocharis obtusa	COMMON SPIKESEDGE	CYPERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Eleocharis quadrangulata	SQUARESTEM SPIKESEDGE	CYPERACEAE
Eleocharis tortilis	TWISTED SPIKESEDGE	CYPERACEAE
Eleocharis tuberculosa	CONECUP SPIKESEDGE	CYPERACEAE
Elephantopus carolinianus	ELEPHANT'S FOOT	ASTERACEAE
Elephantopus nudatus	PURPLE ELEPHANT'S FOOT	ASTERACEAE
Elephantopus tomentosus	ELEPHANT'S FOOT	ASTERACEAE
Eleusine indica	GOOSEGRASS	POACEAE
Elymus virginicus	VIRGINIA WILDRYE	POACEAE
Epifagus virginiana	BEECH DROPS	OROBANCHACEAE
Eragrostis cilianensis	STINKGRASS	POACEAE
Eragrostis ciliaris	GOPHERTAIL LOVEGRASS	POACEAE
Eragrostis curvula	WEEPING LOVEGRASS	POACEAE
Eragrostis elliottii	ELLIOTT LOVEGRASS	POACEAE
Eragrostis glomerata	POND LOVEGRASS	POACEAE
Eragrostis hypnoides	TEAL LOVEGRASS	POACEAE
Eragrostis lugens	MOURNING LOVEGRASS	POACEAE
Eragrostis pectinacea	SPREADING LOVEGRASS	POACEAE
Eragrostis pilosa	INDIA LOVEGRASS	POACEAE
Eragrostis refracta	COASTAL LOVEGRASS	POACEAE
Eragrostis secundiflora	RED LOVEGRASS	POACEAE
Eragrostis spectabilis	PURPLE LOVEGRASS	POACEAE
Erechtites hieracifolia	FIREWEED	ASTERACEAE
Eremochloa ophiuroides	CENTIPEDEGRASS	POACEAE
Erianthus contortus	BENT-AWN PLUMEGRASS	POACEAE
Erianthus giganteus	SUGARCANE PLUMEGRASS	POACEAE
Erianthus strictus	NARROW PLUMEGRASS	POACEAE
Erigeron annuus	DAISY FLEABANE	ASTERACEAE
Erigeron philadelphicus	SHOWY DAISY FLEABANE	ASTERACEAE
Erigeron pulchellus	POOR ROBIN'S PLANTAIN	ASTERACEAE
Erigeron strigosus	WHITETOP FLEABANE	ASTERACEAE
Erigeron tenuis	NODDING FLEABANE	ASTERACEAE
Eriocaulon cinereum	PIPEWORT	ERIOCAULACEAE
Eriocaulon compressum	FLATTENED PIPEWORT	ERIOCAULACEAE
Eriocaulon decangulare	COMMON PIPEWORT	ERIOCAULACEAE
Eriocaulon texense	TEXAS PIPEWORT	ERIOCAULACEAE
Eriogonum longifolium	LONGLEAF BUCKWHEAT	POLYGONACEAE
Eryngium integrifolium	BOG ERYNGO	APIACEAE
Eryngium prostratum	BUTTON ERYNGO	APIACEAE
Eryngium yuccifolium	BUTTON SNAKEROOT	APIACEAE
Erythrina herbacea	MAMOU PLANT	FABACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Euonymus americanus	WILD STRAWBERRY	CELASTRACEAE
Eupatorium album	WHITE BONESET	ASTERACEAE
Eupatorium capillifolium	DOG FENNEL	ASTERACEAE
Eupatorium coelestinum	MIST FLOWER	ASTERACEAE
Eupatorium compositifolium	YANKEE WEED	ASTERACEAE
Eupatorium fistulosum	JOE-PYE WEED	ASTERACEAE
Eupatorium glaucescens	BONESET	ASTERACEAE
Eupatorium hyssopifolium	NARROWLEAF BONESET	ASTERACEAE
Eupatorium lancifolium	BONESET	ASTERACEAE
Eupatorium leucolepis	PALE BONESET	ASTERACEAE
Eupatorium perfoliatum	BONESET	ASTERACEAE
Eupatorium pinnatifidum	BONESET	ASTERACEAE
Eupatorium rotundifolium var. ovatum	ROUND-LEAF BONESET	ASTERACEAE
Eupatorium rotundifolium var. rotundifolium	ROUND-LEAF BONESET	ASTERACEAE
Eupatorium semiserratum	BONESET	ASTERACEAE
Eupatorium serotinum	FALL BONESET	ASTERACEAE
Euphorbia bicolor	SNOW-ON-THE-PRAIRIE	EUPHORBIACEAE
Euphorbia corollata	FLOWERING SPURGE	EUPHORBIACEAE
Euphorbia heterophylla	FIDDLER'S SPURGE	EUPHORBIACEAE
Euphorbia marginata	SNOW-ON-THE-MOUNTAIN	EUPHORBIACEAE
Euphorbia spathulata	SPURGE	EUPHORBIACEAE
Euthamia gymnospermoides	FLAT-TOPPED GOLDENROD	ASTERACEAE
Euthamia leptocephala	FLAT-TOPPED GOLDENROD	ASTERACEAE
Facelis retusa	FACELIS	ASTERACEAE
Fagus grandifolia	AMERICAN BEECH	FAGACEAE
Festuca arundinacea	REED FESCUE	POACEAE
Ficus carica	FIG	MORACEAE
Fimbristylis autumnalis	SLENDER FIMBRY	CYPERACEAE
Fimbristylis castanea	LARGE MARSH FIMBRY	CYPERACEAE
Fimbristylis miliacea	GLOBE FIMBRY	CYPERACEAE
Fimbristylis tomentosa	HAIRY FIMBRY	CYPERACEAE
Fimbristylis vahlii	SANDBAR FIMBRY	CYPERACEAE
Fragaria virginiana	STRAWBERRY	ROSACEAE
Fraxinus americana	WHITE ASH	OLEACEAE
Fraxinus caroliniana	CAROLINA ASH	OLEACEAE
Fraxinus pennsylvanica	GREEN ASH	OLEACEAE
Froelichia floridana	COTTON WEED	AMARANTHACEAE
Froelichia gracilis	COTTON WEED	AMARANTHACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Fuirena bushii	KRAL'S UMBRELLA SEDGE	CYPERACEAE
Fuirena pumila	DWARF UMBRELLA SEDGE	CYPERACEAE
Fuirena simplex	WESTERN UMBRELLA SEDGE	CYPERACEAE
Fuirena squarrosa	HAIRY UMBRELLA SEDGE	CYPERACEAE
Gaillardia aestivalis var. aestivalis	INDIAN BLANKET	ASTERACEAE
Gaillardia aestivalis var. flavovirens	YELLOW INDIAN BLANKET	ASTERACEAE
Gaillardia pulchella	INDIAN BLANKET	ASTERACEAE
Galactia erecta	ERECT MILKPEA	FABACEAE
Galactia regularis	EASTERN MILKPEA	FABACEAE
Galactia volubilis	DOWNY MILKPEA	FABACEAE
Galium aparine	CATCHWEED BEDSTRAW	RUBIACEAE
Galium circaezans	LICORICE BEDSTRAW	RUBIACEAE
Galium obtusum	BLUNTLEAF BEDSTRAW	RUBIACEAE
Galium pilosum	HAIRY BEDSTRAW	RUBIACEAE
Galium tinctorium	STIFF MARSH BEDSTRAW	RUBIACEAE
Galium uniflorum	ONEFLOWER BEDSTRAW	RUBIACEAE
Galium virgatum	SOUTHWESTERN BEDSTRAW	RUBIACEAE
Gamochaeta pensylvanica	CUDWEED	ASTERACEAE
Gamochaeta purpurea	PURPLE CUDWEED	ASTERACEAE
Gaura lindheimeri	LINDHEIMER'S BEEBLOSSOM	ONAGRACEAE
Gaura longiflora	LONGFLOWER BEEBLOSSOM	ONAGRACEAE
Gelsemium sempervirens	YELLOW JASSMINE	LOGANIACEAE
Gentiana saponaria	HARVESTBELLS	GENTIANACEAE
Geranium carolinianum	WILD GERANIUM	GERANIACEAE
Geranium dissectum	CUTLEAF GERANIUM	GERANIACEAE
Geum canadense	WHITE AVENS	ROSACEAE
Gillenia stipulacea	INDIAN PHYSIC	ROSACEAE
Glandularia canadensis	DAKOTA MOCK VERVAIN	VERBENACEAE
Glandularia pulchella	ROSE MOCK VERVAIN	VERBENACEAE
Glandularia tenuisecta	SOUTH AMERICAN MOCK VERVAIN	VERBENACEAE
Gleditsia aquatica	WATER LOCUST	FABACEAE
Gleditsia triacanthos	HONEY LOCUST	FABACEAE
Glottidium vesicarium	BAGPOD	FABACEAE
Glyceria declinata	MANNAGRASS	POACEAE
Gnaphalium helleri	RABBIT-TOBACCO	ASTERACEAE
Gnaphalium obtusifolium	RABBIT-TOBACCO	ASTERACEAE
Gratiola brevifolia	STICKY HEDGEHYSSOP	SCROPHULARIACEAE
Gratiola neglecta	NEGLECTED HEDGEHYSSOP	SCROPHULARIACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Gratiola pilosa	SHAGGY HEDGEHYSSOP	SCROPHULARIACEAE
Gratiola virginiana	ROUNDFRUIT HEDGEHYSSOP	SCROPHULARIACEAE
Gymnopogon ambiguus	BEARDED SKELETONGRASS	POACEAE
Gymnopogon brevifolius	SLIM SKELETONGRASS	POACEAE
Habenaria repens	WATER SPIDER ORCHID	ORCHIDACEAE
Halesia diptera	SILVERBELL	STYRACACEAE
Hamamelis virginiana	WITCHHAZEL	HAMAMELIDACEAE
Hedeoma hispida	ROUGH FALSEPENNYROYAL	LAMIACEAE
Hedera helix	ENGLISH IVY	ARALIACEAE
Hedyotis nigricans	DIAMONDFLOWERS	RUBIACEAE
Helenium amarum	BITTERWEED	ASTERACEAE
Helenium autumnale	TALL SNEEZEWEED	ASTERACEAE
Helenium drummondii	SNEEZEWEED	ASTERACEAE
Helenium flexuosum	SNEEZEWEED	ASTERACEAE
Helenium vernale	VERNAL SNEEZEWEED	ASTERACEAE
Helianthemum carolinianum	ROCKROSE	CISTACEAE
Helianthemum georgianum	GEORGIA ROCKROSE	CISTACEAE
Helianthus angustifolius	NARROW-LEAF SUNFLOWER	ASTERACEAE
Helianthus debilis ssp. cucumerifolius	WESTERN SUNFLOWER	ASTERACEAE
Helianthus hirsutus	COMMON WILD SUNFLOWER	ASTERACEAE
Heliopsis gracilis	SMOOTH OXEYE	ASTERACEAE
Heliopsis helianthoides	SUNFLOWER EVERLASTING	ASTERACEAE
Heliotropium indicum	TURNSOLE	BORAGINACEAE
Heliotropium tenellum	NARROW-LEAF HELIOTROPE	BORAGINACEAE
Herbertia lahue	PRAIRIENYMPH	IRIDACEAE
Heterotheca subaxillaris	GOLDENASTER	ASTERACEAE
Hibiscus moschuetos ssp. lasiocarpus	CRIMSONEYED ROSEMALLOW	MALVACEAE
Hibiscus moschuetos ssp. moschuetos	CRIMSONEYED ROSEMALLOW	MALVACEAE
Hieracium gronovii	HAWKWEED	ASTERACEAE
Holcus lanatus	VELVETGRASS	POACEAE
Hordeum pusillum	LITTLE BARLEY	POACEAE
Houstonia micrantha	SOUTHERN BLUET	RUBIACEAE
Houstonia purpurea var. purpurea	VENUS' PRIDE	RUBIACEAE
Houstonia pusilla	TINY BLUET	RUBIACEAE
Houstonia rosea	ROSE BLUET	RUBIACEAE
Hydrocotyle ranunculoides	FLOATING WATER PENNYWORT	APIACEAE
Hydrocotyle umbellata	UMBRELLA WATER PENNYWORT	APIACEAE
Hydrocotyle verticillata	COMMON WATER PENNYWORT	APIACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Hydrolea ovata	OVATE FALSE FIDDLELEAF	HYDROPHYLLACEAE
Hydrolea uniflora	ONEFLOWER FALSE FIDDLELEAF	HYDROPHYLLACEAE
Hymenocallis eulae	SPIDER LILY	LILIACEAE
Hymenopappus artemisiifolius	WOOLLY WHITE	ASTERACEAE
Hymenopappus scabiosaeus	WOOLLY WHITE	ASTERACEAE
Hypericum crux-andreae	ST. ANDREW'S CROSS	CLUSIACEAE
Hypericum densiflorum	SHRUBBY ST. JOHN'S WORT	CLUSIACEAE
Hypericum drummondii	NITS AND LICE	CLUSIACEAE
Hypericum fasciculatum	SANDBUSH ST. JOHN'S WORT	CLUSIACEAE
Hypericum frondosum	SHOWY ST. JOHN'S WORT	CLUSIACEAE
Hypericum galioides	BEDSTRAW ST. JOHN'S WORT	CLUSIACEAE
Hypericum gentianoides	ORANGE-GRASS	CLUSIACEAE
Hypericum gymnanthum	CLASPING ST. JOHN'S WORT	CLUSIACEAE
Hypericum hypericoides ssp. hypericoides	ST. ANDREW'S CROSS	CLUSIACEAE
Hypericum hypericoides ssp. multicaulis	DWARF ST. ANDREW'S CROSS	CLUSIACEAE
Hypericum mutilum	LEAST ST. JOHN'S WORT	CLUSIACEAE
Hypericum nudiflorum	DOGBANE ST. JOHN'S WORT	CLUSIACEAE
Hypericum prolificum	BROOM BUSH	CLUSIACEAE
Hypericum setosum	HAIRY ST. JOHN'S WORT	CLUSIACEAE
Hypochoeris glabra	CAT'S EAR	ASTERACEAE
Hypochoeris microcephala	CAT'S EAR	ASTERACEAE
Hypochoeris radicata	CAT'S EAR	ASTERACEAE
Hypoxis hirsuta	COMMON STAR-GRASS	LILIACEAE
Hypoxis juncea	STAR-GRASS	LILIACEAE
Hypoxis micrantha	BRISTLESEED STAR-GRASS	LILIACEAE
Hypoxis rigida	STAR-GRASS	LILIACEAE
Hypoxis sessilis	GLOSSSEED STAR-GRASS	LILIACEAE
Hyptis alata	BUSHMINT	LAMIACEAE
Ilex ambigua	CAROLINA HOLLY	AQUIFOLIACEAE
Ilex coriacea	LARGE GALLBERRY	AQUIFOLIACEAE
Ilex decidua	DECIDUOUS HOLLY	AQUIFOLIACEAE
Ilex longipes	GEORGIA HOLLY	AQUIFOLIACEAE
Ilex opaca	AMERICAN HOLLY	AQUIFOLIACEAE
Ilex vomitoria	YAUPON	AQUIFOLIACEAE
Indigofera miniata var. leptosephala	SCARLET PEA	FABACEAE
Ionactis linariifolius	NARROWLEAF ASTER	ASTERACEAE
Ipomoea cordatotriloba	COTTON MORNING GLORY	CONVOLVULACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Ipomoea lacunosa	SMALL WHITE MORNING GLORY	CONVOLVULACEAE
Ipomoea nil	IVY-LEAF MORNING GLORY	CONVOLVULACEAE
Ipomoea pandurata	WILD POTATO VINE	CONVOLVULACEAE
Iris virginica	SOUTHERN BLUE-FLAG	IRIDACEAE
Isoetes melanopoda	BLACK-FOOTED QUILLWORT	ISOETACEAE
Isotria verticillata	WHORLED POGONIA	ORCHIDACEAE
Itea virginica	VIRGINIA WILLOW	GROSSULARIACEAE
Iva annua	SUMPWEED	ASTERACEAE
Jacquemontia tamnifolia	TIE VINE	CONVOLVULACEAE
Juglans nigra	BLACK WALNUT	JUGLANDACEAE
Juncus acuminatus	KNOTLEAF RUSH	JUNCACEAE
Juncus biflorus	TWOFLOWER RUSH	JUNCACEAE
Juncus brachycarpus	WHITEROOT RUSH	JUNCACEAE
Juncus bufonius	TOAD RUSH	JUNCACEAE
Juncus capitatus	ANNUAL RUSH	JUNCACEAE
Juncus coriaceus	LEATHERY RUSH	JUNCACEAE
Juncus dichotomus	FORKED RUSH	JUNCACEAE
Juncus diffusissimus	SLIMPOD RUSH	JUNCACEAE
Juncus effusus	COMMON RUSH	JUNCACEAE
Juncus elliottii	BOG RUSH	JUNCACEAE
Juncus marginatus	GRASSLEAF RUSH	JUNCACEAE
Juncus nodatus	JOINTED RUSH	JUNCACEAE
Juncus polycephalus	FLATLEAF RUSH	JUNCACEAE
Juncus repens	CREEPING RUSH	JUNCACEAE
Juncus scirpoides	NEEDLEPOD RUSH	JUNCACEAE
Juncus tenuis	POVERTY RUSH	JUNCACEAE
Juncus trigonocarpus	RUSH	JUNCACEAE
Juncus validus	ROUNDHEAD RUSH	JUNCACEAE
Juniperus virginiana	EASTERN RED CEDAR	CUPRESSACEAE
Justicia ovata	LANCE-LEAVED WATERWILLOW	ACANTHACEAE
Koeleria gerardii	ANNUAL KOELERIA	POACEAE
Krigia cespitosa	DWARF DANDELION	ASTERACEAE
Krigia dandelion	POTATO DWARF DANDELION	ASTERACEAE
Krigia virginica	DWARF DANDELION	ASTERACEAE
Lachnocaulon anceps	WHITEHEAD BOGBUTTON	ERIOCAULACEAE
Lachnocaulon digynum	BOGBUTTON	ERIOCAULACEAE
Lactuca canadensis	WILD LETTUCE	ASTERACEAE
Lactuca floridana	BLUE-FLOWERED LETTUCE	ASTERACEAE
Lactuca ludoviciana	WILD LETTUCE	ASTERACEAE
Lactuca serriola	PRICKLY LETTUCE	ASTERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Lagenaria siceraria	SPONGE GOURD	CUCURBITACEAE
Lagerstroemia indica	CREPE MYRTLE	LYTHRACEAE
Lamium amplexicaule	HENBIT	LAMIACEAE
Lantana camara	LANTANA	VERBENACEAE
Lathyrus hirsutus	SINGLETARY PEAVINE	FABACEAE
Lathyrus pusillus	TINY PEAVINE	FABACEAE
Lechea mucronata	LARGE PINWEED	CISTACEAE
Lechea tenuifolia	PINWEED	CISTACEAE
Leersia oryzoides	RICE CUTGRASS	POACEAE
Leersia virginica	WHITEGRASS	POACEAE
Lemna aequinoctialis	DUCKWEED	LEMNACEAE
Lemna minor	COMMON DUCKWEED	LEMNACEAE
Lemna obscura	DUCKWEED	LEMNACEAE
Lepidium virginicum	VIRGINIA PEPPERWEED	BRASSICACEAE
Leptochloa fascicularis	BEARDED SPRANGLETOP	POACEAE
Leptochloa scabra	ROUGH SPRANGLETOP	POACEAE
Leptoloma cognatum	FALL WITCHGRASS	POACEAE
Lepurapetalon spathulatum	PETITEPLANT	SAXIFRAGACEAE
Lespedeza capitata	ROUNDHEAD LESPEDEZA	FABACEAE
Lespedeza cuneata	CHINESE LESPEDEZA	FABACEAE
Lespedeza hirta	HAIRY LESPEDEZA	FABACEAE
Lespedeza procumbens	TRAILING LESPEDEZA	FABACEAE
Lespedeza repens	CREEPING LESPEDEZA	FABACEAE
Lespedeza striata	JAPANESE CLOVER	FABACEAE
Lespedeza stuevei	TALL LESPEDEZA	FABACEAE
Lespedeza virginica	SLENDER LESPEDEZA	FABACEAE
Leucospora multifida	NARROWLEAF PALESEED	SCROPHULARIACEAE
Liatris acidota	SHARP BLAZING STAR	ASTERACEAE
Liatris aspera	TALL BLAZING STAR	ASTERACEAE
Liatris elegans	PINKSCALE BLAZING STAR	ASTERACEAE
Liatris pycnostachya	KANSAS BLAZING STAR	ASTERACEAE
Liatris spicata	BLAZING STAR	ASTERACEAE
Liatris squarrosa var. squarrosa	BUTTON BLAZING STAR	ASTERACEAE
Liatris squarrulosa	BLAZING STAR	ASTERACEAE
Ligustrum lucidum	GLOSSY PRIVET	OLEACEAE
Ligustrum sinense	CHINESE PRIVET	OLEACEAE
Lilium michauxii	CAROLINA LILY	LILIACEAE
Limnodea arkansana	OZARKGRASS	POACEAE
Limnosciadium pumilum	RICE-FIELD DOGSHADE	APIACEAE
Lindera benzoin	SPICEBUSH	LAURACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Lindernia anagallidea	MOISTBANK PIMPERNEL	SCROPHULARIACEAE
Lindernia dubia	FALSE PIMPERNEL	SCROPHULARIACEAE
Linum floridanum var. floridanum	FLORIDA YELLOW FLAX	LINACEAE
Linum medium	STIFF YELLOW FLAX	LINACEAE
Linum striatum	RIDGED YELLOW FLAX	LINACEAE
Liquidambar styraciflua	SWEET GUM	HAMAMELIDACEAE
Liriodendron tulipifera	YELLOW POPLAR	MAGNOLIACEAE
Listera australis	SOUTHERN TWAYBLADE	ORCHIDACEAE
Lithospermum caroliniense	YELLOW STONESEED	BORAGINACEAE
Lithospermum tuberosum	TUBEROUS STONESEED	BORAGINACEAE
Lobelia appendiculata	PALE LOBELIA	CAMPANULACEAE
Lobelia cardinalis	CARDINAL FLOWER	CAMPANULACEAE
Lobelia flaccidifolia	LOBELIA	CAMPANULACEAE
Lobelia puberula	PURPLE DEW DROP	CAMPANULACEAE
Lobelia reverchonii	BAY-GALL LOBELIA	CAMPANULACEAE
Lolium perenne	PERENNIAL RYEGRASS	POACEAE
Lonicera japonica	JAPANESE HONEYSUCKLE	CAPRIFOLIACEAE
Lonicera sempervirens	CORAL HONEYSUCKLE	CAPRIFOLIACEAE
Ludwigia alternifolia	SEEDBOX	ONAGRACEAE
Ludwigia decurrens	WINGLEAF PRIMROSEWILLOW	ONAGRACEAE
Ludwigia glandulosa	CYLINDRICFRUIT PRIMROSEWILLOW	ONAGRACEAE
Ludwigia hirtella	SPINDLEROOT	ONAGRACEAE
Ludwigia leptocarpa	ANGLESTEM PRIMROSEWILLOW	ONAGRACEAE
Ludwigia linearis	NARROWLEAF PRIMROSEWILLOW	ONAGRACEAE
Ludwigia palustris	MARSH PURSLANE	ONAGRACEAE
Ludwigia peploides ssp. peploides	FLOATING PRIMROSEWILLOW	ONAGRACEAE
Ludwigia pilosa	HAIRY PRIMROSEWILLOW	ONAGRACEAE
Ludwigia uruguayensis	URUGUAYAN PRIMROSEWILLOW	ONAGRACEAE
Lupinus texensis	TEXAS LUPINE	FABACEAE
Luzula bulbosa	LAWN WOODRUSH	JUNCACEAE
Luzula campestris	WOODRUSH	JUNCACEAE
Luzula echinata	RAVINE WOODRUSH	JUNCACEAE
Lycopodium appressum	SOUTHERN CLUB-MOSS	LYCOPODIACEAE
Lycopodium alopecuroides	FOXTAIL CLUB-MOSS	LYCOPODIACEAE
Lycopodium carolinianum	SLENDER CLUB-MOSS	LYCOPODIACEAE
Lycopodium prostratum	FEATHER-STEM CLUB-MOSS	LYCOPODIACEAE
Lycopus rubellus	TAPERLEAF WATERHOREHOUND	LAMIACEAE
Lycopus virginicus	VIRGINIA WATERHOREHOUND	LAMIACEAE
Lygodium japonicum	JAPANESE CLIMBING FERN	SCHIZAEACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Lyonia ligustrina	HE-HUCKLEBERRY	ERICACEAE
Lyonia lucida	FETTERBUSH	ERICACEAE
Lysimachia radicans	TRAILING YELLOW LOOSESTRIFE	PRIMULACEAE
Lythrum alatum var. lanceolatum	WINGED LYTHRUM	LYTHRACEAE
Lythurm lineare	WAND LYTHRUM	LYTHRACEAE
Magnolia grandiflora	SOUTHERN MAGNOLIA	MAGNOLIACEAE
Magnolia virginiana	WHITE BAY	MAGNOLIACEAE
Malaxis unifolia	GREEN ADDER'S MOUTH	ORCHIDACEAE
Malus angustifolia	CRABAPPLE	ROSACEAE
Manfreda virginica	RATTLESNAKE MASTER	AGAVACEAE
Marshallia caespitosa var. caespitosa	BARBARA'S BUTTONS	ASTERACEAE
Marshallia graminifolia var. cynanthera	BARBARA'S BUTTONS	ASTERACEAE
Marshallia trinervia	BARBARA'S BUTTONS	ASTERACEAE
Matelea carolinensis	ANGLE POD	ASCLEPIADACEAE
Matelea decipiens	ANGLE POD	ASCLEPIADACEAE
Matelea gonocarpos	ANGLE POD	ASCLEPIADACEAE
Mazus pumilus	JAPANESE MAZUS	SCROPHULARIACEAE
Mecardonia acuminata	AXILFLOWER	SCROPHULARIACEAE
Medicago lupulina	BLACK MEDIC CLOVER	FABACEAE
Medicago polymorpha	BURCLOVER	FABACEAE
Medicago sativa	ALFALFA	FABACEAE
Melanthium virginicum	BUNCH FLOWER	LILIACEAE
Melia azedarach	CHINABERRY	MELIACEAE
Melica mutica	TWOFLOWER MELICGRASS	POACEAE
Melilotus alba	WHITE SWEET CLOVER	FABACEAE
Melilotus indica	YELLOW SWEET CLOVER	FABACEAE
Melilotus officinalis	YELLOW SWEET CLOVER	FABACEAE
Melochia corchorifolia	CHOCOLATEWEED	STERCULIACEAE
Melothria pendula	MELONETTE	CUCURBITACEAE
Micranthemum umbrosum	MUDWEED	SCROPHULARIACEAE
Mikania cordifolia	HEMP VINE	ASTERACEAE
Mikania scandens	HEMP VINE	ASTERACEAE
Mimosa quadrivalvis var. angustata	SENSITIVE BRIAR	FABACEAE
Mimosa quadrivalvis var. hystricina	CATCLAW SENSITIVE BRIAR	FABACEAE
Mimosa quadrivalvis var. nuttallii	SENSITIVE BRIAR	FABACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Mimosa strigillosa	POWDERPUFF	FABACEAE
Mimulus alatus	MONKEY FLOWER	SCROPHULARIACEAE
Miscanthus sinensis	EULALIA	POACEAE
Mitchella repens	PARTRIDGE BERRY	RUBIACEAE
Mitreola petiolata	LAX HORNPOD	LOGANIACEAE
Mitreola sessilifolia	SWAMP HORNPOD	LOGANIACEAE
Modiola caroliniana	CAROLINA BRISTLEMALLOW	MALVACEAE
Mollugo verticillata	GREEN CARPETWEED	MOLLUGINACEAE
Monarda fistulosa	WILDBERGAMOT BEEBALM	LAMIACEAE
Monarda punctata	SPOTTED BEEBALM	LAMIACEAE
Monotropa uniflora	INDIAN PIPES	MONOTROPACEAE
Morus alba	WHITE MULBERRY	MORACEAE
Morus rubra	RED MULBERRY	MORACEAE
Muhlenbergia capillaris	HAIRAWN MUHLY	POACEAE
Muhlenbergia schreberi	NIMBLEWILL	POACEAE
Myosotis verna	GROMWELL	BORAGINACEAE
Myosurus minimus	TINY MOUSETAIL	RANUNCULACEAE
Myrica cerifera	WAXMYRTLE	MYRICACEAE
Myrica heterophylla	BAYGALL WAXMYRTLE	MYRICACEAE
Myriophyllum aquaticum	BRAZILIAN WATERMILFOIL	HALORAGACEAE
Myriophyllum heterophyllum	TWOLEAF WATERMILFOIL	HALORAGACEAE
Najas guadalupensis	COMMON WATERNYMPH	NAJADACEAEAE
Narcissus jonquilla	JONQUIL	LILIACEAE
Neptunia lutea	YELLOW PUFF	FABACEAE
Nothoscordum bivalve	CROW POISON	LILIACEAE
Nuphar lutea ssp. advena	YELLOW PONDLILY	NYMPHAEACEAE
Nuttallanthus canadensis	CANADA TOADFLAX	SCROPHULARIACEAE
Nuttallanthus texanus	TEXAS TOADFLAX	SCROPHULARIACEAE
Nymphaea odorata	WHITE WATERLILY	NYMPHAEACEAE
Nyssa aquatica	TUPELO GUM	NYSSACEAE
Nyssa sylvatica var biflora	BLACK GUM	NYSSACEAE
Nyssa sylvatica var sylvatica	SWAMP BLACK GUM	NYSSACEAE
Oenothera biennis	COMMON EVENINGPRIMROSE	ONAGRACEAE
Oenothera heterophylla	VARIABLELEAF EVENINGPRIMROSE	ONAGRACEAE
Oenothera laciniata	CUTLEAF EVENINGPRIMROSE	ONAGRACEAE
Oenothera linifolia	THREADLEAF EVENINGPRIMROSE	ONAGRACEAE
Oenothera speciosa	PINKLADIES	ONAGRACEAE
Oldenlandia boscii	BOSC'S MILLE GRAINES	RUBIACEAE
Oldenlandia uniflora	CLUSTERED MILLE GRAINES	RUBIACEAE
Onoclea sensibilis	SENSITIVE FERN	WOODSIACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Onosmodium virginianum	FALSE GROMWELL	BORAGINACEAE
Ophioglossum crotalophoroides	BULBOUS ADDER'S-TONGUE	OPHIOGLOSSACEAE
Ophioglossum engelmannii	ENGLEMANN'S ADDER'S-TONGUE	OPHIOGLOSSACEAE
Ophioglossum nudicaule	SLENDER ADDER'S-TONGUE	OPHIOGLOSSACEAE
Oplismenus setarius	BASKETGRASS	POACEAE
Opuntia humifusa var. humifusa	PRICKLY PEAR CACTUS	CACTACEAE
Opuntia macrorhiza	PRICKLY PEAR CACTUS	CACTACEAE
Orbexilium simplex	SAMPSON'S SNAKEROOT	FABACEAE
Orbexilum pedunculatum	SINGLESTEM LEATHERROOT	FABACEAE
Orobanche uniflora	BROOMRAPE	OROBANCHACEAE
Oryza sativa	RICE	POACEAE
Osmunda cinnamomea	CINNAMON FERN	OSMUNDACEAE
Osmunda regalis var. spectabilis	ROYAL FERN	OSMUNDACEAE
Ostrya virginiana	HOP HORNBEAM	BETULACEAE
Oxalis corniculata	CREEPING WOODSORREL	OXALIDACEAE
Oxalis corymbosa	PINK WOODSORREL	OXALIDACEAE
Oxalis dillenii	DILLEN'S WOODSORREL	OXALIDACEAE
Oxalis priceae	TUFortED YELLOW WOODSORREL	OXALIDACEAE
Oxalis stricta	COMMON YELLOW OXALIS	OXALIDACEAE
Oxalis violacea	VIOLET WOODSORREL	OXALIDACEAE
Oxypolis filiformis	LEAFLESS COWBANE	APIACEAE
Oxypolis rigidior	STIFF COWBANE	APIACEAE
Panicum aciculare	PANIC GRASS	POACEAE
Panicum acuminatum var. acuminatum	PANIC GRASS	POACEAE
Panicum acuminatum var. leucothrix	PANIC GRASS	POACEAE
Panicum acuminatum var. lindheimeri	LINDHEIMER PANIC GRASS	POACEAE
Panicum acuminatum var. longiligulatum	PANIC GRASS	POACEAE
Panicum anceps	BEAKED PANICUM	POACEAE
Panicum angustifolium	PANIC GRASS	POACEAE
Panicum boscii	PANIC GRASS	POACEAE
Panicum brachyanthum	PIMPLE PANIC GRASS	POACEAE
Panicum commutatum	VARIABLE PANIC GRASS	POACEAE
Panicum consanguineum	PANIC GRASS	POACEAE
Panicum depauperatum	STARVED PANIC GRASS	POACEAE
Panicum dichotomiflorum	FALL PANICUM	POACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Panicum dichotomum var. dichotomum	PANIC GRASS	POACEAE
Panicum dichotomum var. lucidum	PANIC GRASS	POACEAE
Panicum dichotomum var. nitidum	PANIC GRASS	POACEAE
Panicum dichotomum var. ramulosum	PANIC GRASS	POACEAE
Panicum ensifolium var. curtifolium	PANIC GRASS	POACEAE
Panicum flexile	WIRY WITCHGRASS	POACEAE
Panicum gymnocarpon	SAVANNAH PANICUM	POACEAE
Panicum hemitomon	MAIDENCANE	POACEAE
Panicum hians	GAPING PANICUM	POACEAE
Panicum laxiflorum	OPEN-FLOWER PANIC GRASS	POACEAE
Panicum oligosanthes var. oligosanthes	SCRIBNER'S PANIC GRASS	POACEAE
Panicum oligosanthes var. scribnerianum	PANIC GRASS	POACEAE
Panicum ovale	PANIC GRASS	POACEAE
Panicum polyanthes	LEAFY PANIC GRASS	POACEAE
Panicum ramosum	BROWNTOP MILLET	POACEAE
Panicum ravenelii	PANIC GRASS	POACEAE
Panicum rigidulum var. pubescens	REDTOP PANICUM	POACEAE
Panicum rigidulum var. rigidulum	REDTOP PANICUM	POACEAE
Panicum scabriusculum	PANIC GRASS	POACEAE
Panicum scoparium	VELVET PANIC GRASS	POACEAE
Panicum sphaerocarpon	ROUND-SEED PANIC GRASS	POACEAE
Panicum strigosum var. glabrescens	PANIC GRASS	POACEAE
Panicum strigosum var. strigosum	PANIC GRASS	POACEAE
Panicum tenerum	BLUEJOINT PANICUM	POACEAE
Panicum tenue	PANIC GRASS	POACEAE
Panicum texanum	TEXAS MILLET	POACEAE
Panicum verrucosum	WARTY PANICUM	POACEAE
Panicum virgatum	SWITCHGRASS	POACEAE
Parthenocissus quinquefolia	VIRGINIA CREEPER	VITACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Paspalum bifidum	PITCHFORK PASPALUM	POACEAE
Paspalum dilatatum	DALLISGRASS	POACEAE
Paspalum floridanum	FLORIDA PASPALUM	POACEAE
Paspalum laeve	FIELD PASPALUM	POACEAE
Paspalum notatum var. saurae	PENSACOLA BAHIAGRASS	POACEAE
Paspalum plicatulum	BROWNSEED PASPALUM	POACEAE
Paspalum praecox	EARLY PASPALUM	POACEAE
Paspalum pubiflorum	HAIRYSEED PASPALUM	POACEAE
Paspalum setaceum var. ciliatifolium	FRINGELEAF PASPALUM	POACEAE
Paspalum setaceum var. muhlenbergii	HURRAHGRASS	POACEAE
Paspalum setaceum var. setaceum	THIN PASPALUM	POACEAE
Paspalum setaceum var. stramineum	PASPALUM	POACEAE
Paspalum setaceum var. supinum	PASPALUM	POACEAE
Paspalum urvillei	VASEYGRASS	POACEAE
Passiflora incarnata	MAYPOP	PASSIFLORACEAE
Passiflora lutea	YELLOW MAYPOP	PASSIFLORACEAE
Pedicularis canadensis	LOUSEWORT	SCROPHULARIACEAE
Peltandra virginica	ARROW ARUM	ARACEAE
Penstemon digitalis	TALUS SLOPE PENSTEMON	SCROPHULARIACEAE
Penstemon laxiflorus	EUSTIS LAKE BEARDTONGUE	SCROPHULARIACEAE
Penstemon tubaeflorus	WHITE WAND BEARDTONGUE	SCROPHULARIACEAE
Penthorum sedoides	DITCH STONECROP	CRASSULACEAE
Perilla frutescens	BEEFSTEAKPLANT	LAMIACEAE
Persea palustris	RED BAY	LAURACEAE
Phalaris angusta	TIMOTHY CANARYGRASS	POACEAE
Phalaris caroliniana	CAROLINA CANARYGRASS	POACEAE
Phlox divaricata	WILD BLUE PHLOX	POLEMONIACEAE
Phlox drummondii	ANNUAL PHLOX	POLEMONIACEAE
Phlox pilosa	DOWNY PHLOX	POLEMONIACEAE
Phoradendron tomentosum	MISTLETOE	VISCACEAE
Phryma leptostachya	LOPSEED	VERBENACEAE
Phyla cuneifolia	WEDGELEAF FOGFRUIT	VERBENACEAE
Phyla lanceolata	NORTHERN FOGFRUIT	VERBENACEAE
Phyla nodiflora	TURKEY TANGLE FOGFRUIT	VERBENACEAE
Phyla x intermedia	FOGFRUIT	VERBENACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Phyllanthus caroliniensis	LEAF-SEED	EUPHORBIACEAE
Physalis angulata	CUTLEAF GROUNDCHERRY	SOLANACEAE
Physalis hederifolia	IVYLEAF GROUNDCHERRY	SOLANACEAE
Physalis heterophylla	CLAMMYLEAF GROUNDCHERRY	SOLANACEAE
Physalis pumila	DWARF GROUNDCHERRY	SOLANACEAE
Physalis virginiana	VIRGINIA GROUNDCHERRY	SOLANACEAE
Physostegia digitalis	FINGER FALSE DRAGONHEAD	LAMIACEAE
Physostegia virginiana	FINGER FALSE DRAGONHEAD	LAMIACEAE
Phytolacca americana	POKE WEED	PHYTOLACCACEAE
Pilea pumila	CLEAR WEED	URTICACEAE
Pinguicula pumila	SMALL BUTTERWORT	LENTIBULARIACEAE
Pinus echinata	SHORTLEAF PINE	PINACEAE
Pinus elliottii	SLASH PINE	PINACEAE
Pinus glabra	SPRUCE PINE	PINACEAE
Pinus palustris	LONGLEAF PINE	PINACEAE
Pinus taeda	LOBLOLLY PINE	PINACEAE
Planera aquatica	WATER ELM	ULMACEAE
Plantago aristata	LARGEBRACTED PLANTAIN	PLANTAGINACEAE
Plantago heterophylla	SLENDER PLANTAIN	PLANTAGINACEAE
Plantago lanceolata	BUCKTHORN PLANTAIN	PLANTAGINACEAE
Plantago virginica	VIRGINIA PLANTAIN	PLANTAGINACEAE
Plantago wrightiana	WRIGHT'S PLANTAIN	PLANTAGINACEAE
Platanthera blephariglottis	WHITE FRINGED ORCHID	ORCHIDACEAE
Platanthera ciliaris	YELLOW FRINGED ORCHID	ORCHIDACEAE
Platanthera clavellata	GREEN REIN ORCHID	ORCHIDACEAE
Platanthera cristata	CRESTED FRINGED ORCHID	ORCHIDACEAE
Platanthera flava	SOUTHERN REIN ORCHID	ORCHIDACEAE
Platanthera integra	YELLOW FRINGELESS ORCHID	ORCHIDACEAE
Platanthera nivea	SNOWY ORCHID	ORCHIDACEAE
Platanus occidentalis	SYCAMORE	PLATANACEAE
Pluchea camphorata	CAMPHORWEED	ASTERACEAE
Pluchea foetida	MARSH FLEABANE	ASTERACEAE
Pluchea rosea	MARSH FLEABANE	ASTERACEAE
Poa annua	ANNUAL BLUEGRASS	POACEAE
Poa autumnalis	AUTUMN BLUEGRASS	POACEAE
Poa chapmaniana	CHAPMAN BLUEGRASS	POACEAE
Podophyllum peltatum	MAYAPPLE	BERBERIDACEAE
Pogonia ophioglossoides	ROSE POGONIA	ORCHIDACEAE
Polygala cruciata	DRUMHEADS	POLYGALACEAE
Polygala cymosa	TALL PINEBARREN MILKWORT	POLYGALACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Polygala incarnata	PROCESSION FLOWER	POLYGALACEAE
Polygala leptocaulis	SWAMP MILKWORT	POLYGALACEAE
Polygala mariana	MARYLAND MILKWORT	POLYGALACEAE
Polygala nana	CANDYROOT	POLYGALACEAE
Polygala polygama	RACEMED MILKWORT	POLYGALACEAE
Polygala ramosa	LOW PINEBARREN MILKWORT	POLYGALACEAE
Polygala verticillata	WHORLED MILKWORT	POLYGALACEAE
Polygonatum biflorum	SOLOMON'S SEAL	LILIACEAE
Polygonum densiflorum	DENSEFLOWER KNOTWEED	POLYGONACEAE
Polygonum hydropiperoides	SWAMP KNOTWEED	POLYGONACEAE
Polygonum lapathifolium	SMARTWEED	POLYGONACEAE
Polygonum pensylvanicum	PENNSYLVANIA SMARTWEED	POLYGONACEAE
Polygonum persicaria	SPOTTED LADYSTHUMB	POLYGONACEAE
Polygonum punctatum	DOTTED KNOTWEED	POLYGONACEAE
Polygonum setaceum	BOG SMARTWEED	POLYGONACEAE
Polygonum virginianum	JUMPSEED	POLYGONACEAE
Polypodium polypodioides	RESURRECTION FERN	POLYPODIACEAE
Polypogon monspeliensis	RABBITFOOT GRASS	POACEAE
Polypremum procumbens	JUNIPER-WEED	BUDDLEJACEAE
Polystichum acrostichoides	CHRISTMAS FERN	DRYOPTERIDACEAE
Poncirus trifoliata	TRIFOLIATE ORANGE	RUTACEAE
Populus deltoides	COTTONWOOD	SALICACEAE
Portulaca oleracea	PURSLANE	PORTULACEAE
Portulaca pilosa	KISS ME QUICK	PORTULACEAE
Potamogeton diversifolius	COMMON PONDWEED	POTAMOGETONACEAE
Potamogeton nodosus	AMERICAN PONDWEED	POTAMOGETONACEAE
Potamogeton pulcher	HEARTLEAF PONDWEED	POTAMOGETONACEAE
Prenanthes barbata	RATTLESNAKE ROOT	ASTERACEAE
Proserpinaca palustris	MARSH MERMAIDWEED	HALORAGACEAE
Proserpinaca pectinata	COMBLEAF MERMAIDWEED	HALORAGACEAE
Prunella vulgaris	HEAL ALL	LAMIACEAE
Prunus americana	AMERICAN PLUM	ROSASCEAE
Prunus angustifolia	CHICKASAW PLUM	ROSASCEAE
Prunus caroliniana	CAROLINA LAUREL CHERRY	ROSASCEAE
Prunus mexicana	MEXICAN PLUM	ROSASCEAE
Prunus persica	PEACH	ROSASCEAE
Prunus serotina	BLACK CHERRY	ROSASCEAE
Prunus umbellata	HOG PLUM	ROSASCEAE
Psilocarya nitens	SHORTBEAK BALDSEDGE	CYPERACEAE
Ptelea trifoliata	HOP WAFER TREE	RUTACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Pteridium aquilinum	BRACKEN FERN	DENNSTAEDTIACEAE
Pteroglossaspis ecristata	WILD COCO	ORCHIDACEAE
Ptilimnium capillaceum	THREADLEAF MOCK BISHOP'S WEED	APIACEAE
Ptilimnium costatum	MOCK BISHOP'S WEED	APIACEAE
Ptilimnium nuttallii	NUTTALL'S MOCK BISHOP'S WEED	APIACEAE
Ptilimnium x texense	TEXAS MOCK BISHOP'S WEED	APIACEAE
Pueraria montana var. lobata	KUDZU	FABACEAE
Pycnanthemum albescens	MOUNTAIN MINT	LAMIACEAE
Pycnanthemum tenuifolium	NARROWLEAF MOUNTAIN MINT	LAMIACEAE
Pyracantha coccinea	SCARLET FIRETHORN	ROSACEAE
Pyrrhopappus carolinianus	FALSE DANDELION	ASTERACEAE
Pyrus communis	PEAR	ROSACEAE
Quercus alba	WHITE OAK	FAGACEAE
Quercus falcata var falcata	SOUTHERN RED OAK	FAGACEAE
Quercus hemisphaerica	DARLINGTON'S OAK	FAGACEAE
Quercus incana	SANDJACK OAK	FAGACEAE
Quercus laurifolia	LAUREL OAK	FAGACEAE
Quercus lyrata	OVERCUP OAK	FAGACEAE
Quercus margarettiae	RUNNER OAK	FAGACEAE
Quercus marilandica	BLACKJACK OAK	FAGACEAE
Quercus michauxii	COW OAK	FAGACEAE
Quercus muhlenbergii	CHINQUAPIN OAK	FAGACEAE
Quercus nigra	WATER OAK	FAGACEAE
Quercus pagoda	CHERRYBARK OAK	FAGACEAE
Quercus phellos	WILLOW OAK	FAGACEAE
Quercus shumardii	SHUMARD RED OAK	FAGACEAE
Quercus similis	DELTA POST OAK	FAGACEAE
Quercus stellata	POST OAK	FAGACEAE
Quercus velutina	BLACK OAK	FAGACEAE
Quercus virginiana	LIVE OAK	FAGACEAE
Ranunculus abortivus	LITTLELEAF BUTTERCUP	RANUNCULACEAE
Ranunculus fascicularis	EARLY BUTTERCUP	RANUNCULACEAE
Ranunculus marginatus	MARGINED BUTTERCUP	RANUNCULACEAE
Ranunculus muricatus	SPINYFRUIT BUTTERCUP	RANUNCULACEAE
Ranunculus parviflorus	SMALLFLOWER BUTTERCUP	RANUNCULACEAE
Ranunculus platensis	PRAIRIE BUTTERCUP	RANUNCULACEAE
Ranunculus pusillus	LOW SPEARWORT	RANUNCULACEAE
Ranunculus sardous	HAIRY BUTTERCUP	RANUNCULACEAE
Ranunculus scleratus	CELERYLEAF BUTTERCUP	RANUNCULACEAE
Ratibida pinnata	YELLOW CONEFLOWER	ASTERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Rhamnus caroliniana	CAROLINA BUCKTHORN	RHAMNACEAE
Rhexia alifanus	SAVANNAH MEADOWBEAUTY	MELASTOMATACEAE
Rhexia lutea	YELLOW MEADOWBEAUTY	MELASTOMATACEAE
Rhexia mariana	MARYLAND MEADOWBEAUTY	MELASTOMATACEAE
Rhexia petiolata	FRINGED MEADOWBEAUTY	MELASTOMATACEAE
Rhexia virginica	HANDSOME HARRY	MELASTOMATACEAE
Rhododendron canescens	SWEET AZALEA	ERICACEAE
Rhododendron coryi	WHITE AZALEA	ERICACEAE
Rhododendron oblongifolium	WHITE AZALEA	ERICACEAE
Rhododendron viscosum	LATE AZALEA	ERICACEAE
Rhus aromatica	AROMATIC SUMAC	ANACARDIACEAE
Rhus copallinum	WINGED SUMAC	ANACARDIACEAE
Rhynchosia difformis	DOUBLEFORM SNOUTBEAN	FABACEAE
Rhynchosia latifolia	PRAIRIE SNOUTBEAN	FABACEAE
Rhynchosia reniformis	DOLLARLEAF	FABACEAE
Rhynchosia tomentosa	TWINING SNOUTBEAN	FABACEAE
Rhynchospora caduca	ANGLESTEM BEAKSEDGE	CYPERACEAE
Rhynchospora capitellata	POINTBEAK BEAKSEDGE	CYPERACEAE
Rhynchospora cephalantha	BEAKSEDGE	CYPERACEAE
Rhynchospora chalarocephala	BEAKSEDGE	CYPERACEAE
Rhynchospora corniculata	HORNED BEAKSEDGE	CYPERACEAE
Rhynchospora debilis	BEAKSEDGE	CYPERACEAE
Rhynchospora elliottii	ELLIOTT'S BEAKSEDGE	CYPERACEAE
Rhynchospora fascicularis	STOUT BEAKSEDGE	CYPERACEAE
Rhynchospora filifolia	BRISTLELEAF BEAKSEDGE	CYPERACEAE
Rhynchospora globularis	GLOBE BEAKSEDGE	CYPERACEAE
Rhynchospora glomerata	CLUSTER BEAKSEDGE	CYPERACEAE
Rhynchospora gracilenta	SLENDER BEAKSEDGE	CYPERACEAE
Rhynchospora grayi	GRAY'S BEAKSEDGE	CYPERACEAE
Rhynchospora harveyi	HARVEY BEAKSEDGE	CYPERACEAE
Rhynchospora inexpansa	NODDING BEAKSEDGE	CYPERACEAE
Rhynchospora intermixta	BEAKSEDGE	CYPERACEAE
Rhynchospora macra	LARGE BEAKSEDGE	CYPERACEAE
Rhynchospora macrostachya	TALL BEAKSEDGE	CYPERACEAE
Rhynchospora microcarpa	SMALLFRUIT BEAKSEDGE	CYPERACEAE
Rhynchospora miliacea	BEAKSEDGE	CYPERACEAE
Rhynchospora mixta	BEAKSEDGE	CYPERACEAE
Rhynchospora oligantha	FEWFLOWER BEAKSEDGE	CYPERACEAE
Rhynchospora perplexa	BEAKSEDGE	CYPERACEAE
Rhynchospora plumosa	BEAKSEDGE	CYPERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Rhynchospora pusilla	LITTLE BEAKSEDGE	CYPERACEAE
Rhynchospora rariflora	THREAD BEAKSEDGE	CYPERACEAE
Richardia scabra	ROUGH MEXICAN CLOVER	RUBIACEAE
Robinia hispida	BRISTLY LOCUST	FABACEAE
Robinia pseudoacacia	BLACK LOCUST	FABACEAE
Rorippa sessiliflora	YELLOW CRESS	BRASSICACEAE
Rosa bracteata	MACARTNEY ROSE	ROSACEAE
Rosa laevigata	CHEROKEE ROSE	ROSACEAE
Rotala ramosior	ROTALA	LYTHRACEAE
Rubus aboriginum	GARDEN DEWBERRY	ROSACEAE
Rubus argutus	SAWTOOTH BLACKBERRY	ROSACEAE
Rubus flagellaris	NORTHERN DEWBERRY	ROSACEAE
Rubus trivialis	SOUTHERN DEWBERRY	ROSACEAE
Rudbeckia grandiflora	ROUGH CONEFLOWER	ASTERACEAE
Rudbeckia hirta	BLACK-EYED SUSAN	ASTERACEAE
Rudbeckia missouriensis	BROWN-EYED SUSAN	ASTERACEAE
Rudbeckia nitida	TEXAS BROWN-EYED SUSAN	ASTERACEAE
Rudbeckia scabrifolia	BOG BROWN-EYED SUSAN	ASTERACEAE
Rudbeckia subtomentosa	SWEET CONEFLOWER	ASTERACEAE
Ruellia caroliniensis	WILD PETUNIA	ACANTHACEAE
Ruellia humilis	PRAIRIE PETUNIA	ACANTHACEAE
Rumex crispus	CURLY DOCK	POLYGONACEAE
Rumex hastatulus	HEARTWING SORREL	POLYGONACEAE
Rumex pulcher	FIDDLE DOCK	POLYGONACEAE
Sabal minor	PALMETTO	ARECACEAE
Sabatia brachiata	NARROWLEAF ROSEGENTIAN	GENTIANACEAE
Sabatia campestris	TEXAS STAR	GENTIANACEAE
Sabatia gentianoides	PINEWOODS ROSEGENTIAN	GENTIANACEAE
Sabatia macrophylla	LARGELEAF ROSEGENTIAN	GENTIANACEAE
Sacciolepis indica	INDIAN CUPSCALE	POACEAE
Sagina decumbens	BIRDSEYE PEARLWORT	CARYOPHYLLACEAE
Sagittaria calycina	URUGUAY ARROWLEAF	ALISMATACEAE
Sagittaria graminea	NARROW-LEAVED BULL-TONGUE	ALISMATACEAE
Sagittaria latifolia	ARROWHEAD	ALISMATACEAE
Sagittaria papillosa	ARROWHEAD	ALISMATACEAE
Sagittaria platyphylla	DELTA DUCK POTATO	ALISMATACEAE
Salix exigua	SANDBAR WILLOW	SALICACEAE
Salix nigra	BLACK WILLOW	SALICACEAE
Salvia azurea	BLUE SAGE	LAMIACEAE
Salvia lyrata	LYRELEAF SAGE	LAMIACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Sambucus canadensis	ELDERBERRY	CAPRIFOLIACEAE
Samolus valerandi ssp. parviflorus	SEASIDE BROOKWEED	PRIMULACEAE
Sanicula canadensis	SANICLE	APIACEAE
Sapium sebiferum	CHINESE TALLOW TREE	EUPHORBIACEAE
Sarracenia alata	PITCHER PLANT	SARRACENIACEAE
Sassafras albidum	SASSAFRAS	LAURACEAE
Saururus cernuus	LIZARD'S TAIL	SAURURACEAE
Schizachyrium scoparium	LITTLE BLUESTEM	POACEAE
Schizachyrium tenerum	SLENDER BLUESTEM	POACEAE
Schoenolirion croceum	YELLOW SUNNYBELL	LILIACEAE
Scirpus atrovirens	PALE BULRUSH	CYPERACEAE
Scirpus cyperinus	WOOLY SEDGE	CYPERACEAE
Scirpus koilolepis	SANDBAR BULRUSH	CYPERACEAE
Scirpus lineatus	SWAMPWOODS BULRUSH	CYPERACEAE
Scirpus molestus	BULRUSH	CYPERACEAE
Scleria baldwinii	BALDWIN NUTSEDGE	CYPERACEAE
Scleria ciliata	FRINGED NUTSEDGE	CYPERACEAE
Scleria georgiana	GEORGIA NUTSEDGE	CYPERACEAE
Scleria oligantha	LITTLEHEAD NUTSEDGE	CYPERACEAE
Scleria pauciflora	FEWFLOWER NUTSEDGE	CYPERACEAE
Scleria reticularis	BOG NUTSEDGE	CYPERACEAE
Scleria triglomerata	WHIP NUTSEDGE	CYPERACEAE
Scoparia dulcis	LICORICE WEED	SCROPHULARIACEAE
Scutellaria cardiophylla	GULF SKULLCAP	LAMIACEAE
Scutellaria drummondii	DRUMMOND'S SKULLCAP	LAMIACEAE
Scutellaria elliptica	HAIRY SKULLCAP	LAMIACEAE
Scutellaria integrifolia	HELMET FLOWER	LAMIACEAE
Scutellaria ovata	HEARTLEAF SKULLCAP	LAMIACEAE
Scutellaria parvula	SMALL SKULLCAP	LAMIACEAE
Sebastiana fruticosa	CANDLEBERRY	EUPHORBIACEAE
Selaginella apoda	MEADOW SPIKE-MOSS	SELAGINELLACEAE
Selaginella arenicola	SAND SPIKE-MOSS	SELAGINELLACEAE
Senecio glabellus	YELLOWTOP	ASTERACEAE
Senecio plattensis	PRAIRIE RAGWORT	ASTERACEAE
Senecio tomentosus	WOOLY GOLDEN RAGWORT	ASTERACEAE
Sesbania exaltata	HEMP SESBANIA	FABACEAE
Sesbania punicea	RATTLEBOX	FABACEAE
Setaria geniculata	KNOTROOT BRISTLEGRASS	POACEAE
Setaria glauca	YELLOW BRISTLEGRASS	POACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Seymeria cassinoides	YAUPON BLACKSENNA	SCROPHULARIACEAE
Sherardia arvensis	BLUE FIELDMADDER	RUBIACEAE
Sida rhombifolia	CUBAN JUTE	MALVACEAE
Sida spinosa	PRICKLY FANPETALS	MALVACEAE
Silene antirrhina	SLEEPY CATCHFLY	CARYOPHYLLACEAE
Silene gallica	ENGLISH CATCHFLY	CARYOPHYLLACEAE
Silene stellata	STARRY CAMPION	CARYOPHYLLACEAE
Silene subciliata	SCARLET CATCHFLY	CARYOPHYLLACEAE
Silphium asteriscus	ROSINWEED	ASTERACEAE
Silphium gracile	SLENDER ROSINWEED	ASTERACEAE
Silphium integrifolium	WHOLELEAF ROSINWEED	ASTERACEAE
Silphium laciniatum	COMPASS PLANT	ASTERACEAE
Silphium radula	ROUGHSTEM ROSINWEED	ASTERACEAE
Sisyrinchium albidum	WHITE BLUEEYED GRASS	IRIDACEAE
Sisyrinchium angustifolium	NARROWLEAF BLUEEYED GRASS	IRIDACEAE
Sisyrinchium atlanticum	EASTERN BLUEEYED GRASS	IRIDACEAE
Sisyrinchium campestre	PRAIRIE BLUEEYED GRASS	IRIDACEAE
Sisyrinchium exile	SMALL YELLOW BLUEEYED GRASS	IRIDACEAE
Sisyrinchium langloisii	PALE BLUEEYED GRASS	IRIDACEAE
Sisyrinchium mucronatum	BLUEEYED GRASS	IRIDACEAE
Sisyrinchium rosulatum	SPREADING BLUEEYED GRASS	IRIDACEAE
Sisyrinchium sagittiferum	SPEAR-BRACTED BLUEEYED GRASS	IRIDACEAE
Smallanthus uvedalia	BEAR'S FOOT	ASTERACEAE
Smilax bona-nox	FIDDLELEAF GREENBRIAR	SMILACACEAE
Smilax glauca	SAWBRIAR	SMILACACEAE
Smilax herbacea	CARRION FLOWER	SMILACACEAE
Smilax hispida	HELLFETTER	SMILACACEAE
Smilax laurifolia	LOWLAND BAMBOO VINE	SMILACACEAE
Smilax pumila	SARSAPARILLA VINE	SMILACACEAE
Smilax rotundifolia	COMMON GREENBRIAR	SMILACACEAE
Smilax smallii	UPLAND BAMBOO VINE	SMILACACEAE
Smilax walteri	RED BERRY GREENBRIAR	SMILACACEAE
Solanum carolinense	HORSENETTLE	SOLANACEAE
Solanum elaeagnifolium	SILVERLEAF NIGHTSHADE	SOLANACEAE
Solanum ptycanthum	NIGHTSHADE	SOLANACEAE
Solanum rostratum	BUFFALOBUR NIGHTSHADE	SOLANACEAE
Solidago arguta var. boottii	BOOT'S CUT-LEAF GOLDENROD	ASTERACEAE
Solidago auriculata	CLASPING GOLDENROD	ASTERACEAE
Solidago caesia	BLUE GOLDENROD	ASTERACEAE
Solidago canadensis	COMMON GOLDENROD	ASTERACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Solidago ludoviciana	GOLDENROD	ASTERACEAE
Solidago nitida	FLAT-TOPPED GOLDENROD	ASTERACEAE
Solidago odora	SWEET GOLDENROD	ASTERACEAE
Solidago patula	ROUNDLEAF GOLDENROD	ASTERACEAE
Solidago patula var. strictula	BAY-GALL GOLDENROD	ASTERACEAE
Solidago petiolaris	NARROWLEAF GOLDENROD	ASTERACEAE
Solidago radula	ROUGH GOLDENROD	ASTERACEAE
Solidago rugosa ssp. aspera	ROUGH GOLDENROD	ASTERACEAE
Solidago rugosa ssp. rugosa	ROUGH GOLDENROD	ASTERACEAE
Solidago speciosa	NOBLE GOLDENROD	ASTERACEAE
Solidago tortifolia	TWISTED-LEAF GOLDENROD	ASTERACEAE
Solidago ulmifolia	ELM-LEAF GOLDENROD	ASTERACEAE
Soliva sessilis	STICKERS	ASTERACEAE
Sonchus asper	PRICKLY SOW-THISTLE	ASTERACEAE
Sonchus oleraceus	SMOOTH SOW-THISTLE	ASTERACEAE
Sorghastrum elliottii	SLENDER INDIANGRASS	POACEAE
Sorghastrum nutans	INDIANGRASS	POACEAE
Sorghum bicolor	BROOMCORN	POACEAE
Sorghum halepense	JOHNSONGRASS	POACEAE
Sparganium americanum	BUR-REED	SPARGANIACEAE
Spermolepis divaricata	FORKED SCALESEED	APIACEAE
Spermolepis echinata	BRISTLY SCALESEED	APIACEAE
Spermolepis inermis	SPREADING SCALESEED	APIACEAE
Sphenoclea zeylandica	SPHENOCLEA	SPHENOCLEACEAE
Sphenopholis filiformis	LONGLEAF WEDGESCALE	POACEAE
Sphenopholis longiflora	WEDGESCALE	POACEAE
Sphenopholis nitida	SHINY WEDGESCALE	POACEAE
Sphenopholis obtusata	PRAIRIE WEDGESCALE	POACEAE
Spigelia marilandica	INDIAN PINK	LOGANIACEAE
Spiranthes cernua	NODDING LADIES' TRESSES	ORCHIDACEAE
Spiranthes lacera	SLENDER LADIES' TRESSES	ORCHIDACEAE
Spiranthes laciniata	FRINGE-LIP LADIES' TRESSES	ORCHIDACEAE
Spiranthes longilabris	GIANT SPIRALORCHID	ORCHIDACEAE
Spiranthes odorata	FRAGRANT LADIES' TRESSES	ORCHIDACEAE
Spiranthes praecox	GRASS-LEAVED LADIES' TRESSES	ORCHIDACEAE
Spiranthes tuberosa	LEAST LADIES' TRESSES	ORCHIDACEAE
Spiranthes vernalis	UPLAND LADIES' TRESSES	ORCHIDACEAE
Sporobolus asper var. asper	TALL DROPSEED	POACEAE
Sporobolus clandestinus	HAIRY DROPSEED	POACEAE
Sporobolus indicus	SMUTGRASS	POACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Sporobolus junceus	PINEYWOODS DROPSEED	POACEAE
Sporobolus neglectus	PUFFSHEATH DROPSEED	POACEAE
Sporobolus vaginiflorus	POVERTY DROPSEED	POACEAE
Stachys agraria	MOUSEEAR	LAMIACEAE
Stellaria media	COMMON CHICKWEED	CARYOPHYLLACEAE
Stenanthium gramineum	FEATHERBELLS	LILIACEAE
Stenotaphrum secundatum	ST. AUGUSTINE GRASS	POACEAE
Stillingia sylvatica	QUEEN'S DELIGHT	EUPHORBIACEAE
Stipa avenacea	BLACKSEED NEEDLEGRASS	POACEAE
Strophostyles leiosperma	SLICKSEED FUZZYBEAN	FABACEAE
Strophostyles umbellata	PINK FUZZYBEAN	FABACEAE
Stylisma aquatica	STYLISMA	CONVOLVULACEAE
Stylisma humistrata	STYLISMA	CONVOLVULACEAE
Stylisma patens	STYLISMA	CONVOLVULACEAE
Stylisma pickeringii var. pattersonii	STYLISMA	CONVOLVULACEAE
Stylisma villosa	STYLISMA	CONVOLVULACEAE
Stylodon carneus	CAROLINA FALSE VERVAIN	VERBENACEAE
Stylosanthes biflora	PENCIL FLOWER	FABACEAE
Styrax americana	LITTLE SNOWBELL	STYRACACEAE
Styrax grandifolia	BIG SNOWBELL	STYRACACEAE
Symplocos tinctoria	HORSESUGAR	SYMPLOCACEAE
Talinum calycinum	LARGEFLOWER FAMEFLOWER	PORTULACEAE
Taxodium distichum	BALD CYPRESS	TAXODIACEAE
Tephrosia florida	FLORIDA HOARYPEA	FABACEAE
Tephrosia onobrychioides	MULTIBLOOM HOARYPEA	FABACEAE
Tephrosia virginiana	GOAT'S RUE	FABACEAE
Tetragonotheca ludoviciana	NERVERAY	ASTERACEAE
Teucrium canadense	GERMANDER	LAMIACEAE
Thalictrum dasycarpum	MEADOW RUE	RANUNCULACEAE
Thelypteris hexagonoptera	BROAD BEECH FERN	THELYPTERIDACEAE
Thelypteris kunthii	WIDESPREAD MAIDEN FERN	THELYPTERIDACEAE
Tilia americana var. americana	AMERICAN BASSWOOD	TILIACEAE
Tillandsia usneoides	SPANISH MOSS	BROMELLIACEAE
Tipularia discolor	CRANEFLY ORCHID	ORCHIDACEAE
Torilis arvensis	HEDGE PARSLEY	APIACEAE
Toxicodendron pubescens	POISON OAK	ANACARDIACEAE
Toxicodendron radicans	POISON IVY	ANACARDIACEAE
Toxicodendron vernix	POISON SUMAC	ANACARDIACEAE
Trachelospermum difforme	CLIMBING DOG BANE	APOCYNACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Tradescantia hirsutiflora	HAIRY SPIDERWORT	COMMELINACEAE
Tradescantia occidentalis	SMALL-FLOWERED SPIDERWORT	COMMELINACEAE
Tradescantia ohioensis	COMMON SPIDERWORT	COMMELINACEAE
Tradescantia paludosa	SPIDERWORT	COMMELINACEAE
Tradescantia reverchonii	DOWNY SPIDERWORT	COMMELINACEAE
Tragia betonicifolia	NOSEBURN	EUPHORBIACEAE
Tragia cordata	VINE NOSEBURN	EUPHORBIACEAE
Tragia smallii	SHORT NOSEBURN	EUPHORBIACEAE
Tragia urens	NARROW-LEAF NOSEBURN	EUPHORBIACEAE
Tragia urticifolia	COMMON NOSEBURN	EUPHORBIACEAE
Triadenum tubulosum	TURF ST. JOHN'S WORT	CLUSIACEAE
Triadenum virginicum	MARSH ST. JOHN'S WORT	CLUSIACEAE
Triadenum walteri	MARSH ST. JOHN'S WORT	CLUSIACEAE
Trichostema dichotomum	FORKED BLUECURLS	LAMIACEAE
Trichostema setaceum	NARROWLEAF BLUECURLS	LAMIACEAE
Tridens ambiguus	PINEBARREN TRIDENS	POACEAE
Tridens chapmanii	CHAPMAN PURPLETOP	POACEAE
Tridens flavus	PURPLETOP	POACEAE
Tridens strictus	LONGSPIKE TRIDENS	POACEAE
Trifolium campestre	FIELD CLOVER	FABACEAE
Trifolium carolinianum	CAROLINA CLOVER	FABACEAE
Trifolium dubium	SUCKLING CLOVER	FABACEAE
Trifolium incarnatum	CRIMSON CLOVER	FABACEAE
Trifolium lappaceum	BURDOCK CLOVER	FABACEAE
Trifolium pratense	RED CLOVER	FABACEAE
Trifolium repens	WHITE CLOVER	FABACEAE
Trifolium resupinatum	PERSIAN CLOVER	FABACEAE
Trifolium vesiculosum	ARROWLEAF CLOVER	FABACEAE
Trillium gracile	SOUTHWEST TRILLIUM	LILIACEAE
Trillium ludovicianum	COMMON TRILLIUM	LILIACEAE
Triodanis biflora	VENUS' LOOKING GLASS	CAMPANULACEAE
Triodanis perfoliata	VENUS' LOOKING GLASS	CAMPANULACEAE
Triplasis purpurea	PURPLE SANDGRASS	POACEAE
Tripsacum dactyloides	EASTERN GAMAGRASS	POACEAE
Trisetum interruptum	PRAIRIE TRISETUM	POACEAE
Triticum aestivum	WHEAT	POACEAE
Typha angustifolia	NARROWLEAF CATTAIL	TYPHACEAE
Typha domingensis	GIANT CATTAIL	TYPHACEAE
Typha latifolia	COMMON CATTAIL	TYPHACEAE
Ulmus alata	WINGED ELM	ULMACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Ulmus americana	AMERICAN ELM	ULMACEAE
Ulmus rubra	SLIPPERY ELM	ULMACEAE
Utricularia cornuta	HORNED BLADDERWORT	LENTIBULARIACEAE
Utricularia foliosa	LEAFY BLADDERWORT	LENTIBULARIACEAE
Utricularia gibba	HUMPED BLADDERWORT	LENTIBULARIACEAE
Utricularia inflata	SWOLLEN BLADDERWORT	LENTIBULARIACEAE
Utricularia juncea	SOUTHERN BLADDERWORT	LENTIBULARIACEAE
Utricularia radiata	LITTLE FLOATING BLADDERWORT	LENTIBULARIACEAE
Utricularia subulata	ZIZAG BLADDERWORT	LENTIBULARIACEAE
Uvularia sessilifolia	SESSILE-LEAVED BELLWORT	LILIACEAE
Vaccinium arboreum	TREE HUCKLEBERRY	ERICACEAE
Vaccinium corymbosum	BLUEBERRY	ERICACEAE
Vaccinium elliottii	ELLIOTT'S BLUEBERRY	ERICACEAE
Vaccinium fuscatum	BAYGALL BLUEBERRY	ERICACEAE
Vaccinium stamineum	DEERBERRY	ERICACEAE
Vaccinium virgatum	LARGE CLUSTER BLUEBERRY	ERICACEAE
Valerianella radiata	CORN SALAD	VALERIANACEAE
Verbascum thapsum	MULLEIN	VERBENACEAE
Verbena bonariensis	PURPLETOP VERVAIN	VERBENACEAE
Verbena brasiliensis	BRAZILIAN VERVAIN	VERBENACEAE
Verbena halei	TEXAS VERVAIN	VERBENACEAE
Verbena montevidensis	URUGUAYAN VERVAIN	VERBENACEAE
Verbena urticifolia	WHITE VERVAIN	VERBENACEAE
Verbena xutha	GULF VERVAIN	VERBENACEAE
Verbesina alternifolia	WING-STEM CROWN-BEARD	ASTERACEAE
Verbesina helianthoides	SUNFLOWER-LIKE CROWN-BEARD	ASTERACEAE
Verbesina virginica	WHITE CROWN-BEARD	ASTERACEAE
Verbesina walteri	WALTER'S CROWN-BEARD	ASTERACEAE
Vernicia fordii	TUNGOIL TREE	EUPHORBIACEAE
Vernonia baldwinii	BALDWIN IRONWEED	ASTERACEAE
Vernonia gigantea	TALL IRONWEED	ASTERACEAE
Vernonia missurica	MISSOURI IRONWEED	ASTERACEAE
Vernonia texana	TEXAS IRONWEED	ASTERACEAE
Vernonia x peralta	IRONWEED	ASTERACEAE
Veronica arvensis	CORN SPEEDWELL	SCROPHULARIACEAE
Veronica peregrina	NECKWEED	SCROPHULARIACEAE
Veronica persica	BIRDEYE SPEEDWELL	SCROPHULARIACEAE
Vetiveria zizanioides	VETIVER	POACEAE
Viburnum acerifolium	MAPLE-LEAF VIBURNUM	CAPRIFOLIACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Viburnum dentatum var. dentatum	ARROW-WOOD	CAPRIFOLIACEAE
Viburnum dentatum var. scabrellum	ARROW-WOOD	CAPRIFOLIACEAE
Viburnum nudum var. cassinoides	WITHE-ROD	CAPRIFOLIACEAE
Viburnum nudum var. nudum	POSSUM HAW	CAPRIFOLIACEAE
Viburnum prunifolium	BLACK HAW	CAPRIFOLIACEAE
Viburnum rufidulum	RUSTY BLACK HAW	CAPRIFOLIACEAE
Vicia caroliniana	CAROLINA VETCH	FABACEAE
Vicia ludoviciana	LOUISIANA VETCH	FABACEAE
Vicia minutiflora	PYGMYFLOWER VETCH	FABACEAE
Vicia sativa	COMMON VETCH	FABACEAE
Vicia villosa	WINTER VETCH	FABACEAE
Vinca major	PERIWINKLE	APOCYNACEAE
Viola bicolor	FIELD PANSY	VIOLACEAE
Viola esculenta	SALAD VIOLET	VIOLACEAE
Viola lanceolata	BOG WHITE VIOLET	VIOLACEAE
Viola langloisii	BAYOU VIOLET	VIOLACEAE
Viola palmata var. triloba	THREE-LOBED VIOLET	VIOLACEAE
Viola palmata var. palmata	EARLY BLUE VIOLET	VIOLACEAE
Viola pedata	BIRD-FOOT VIOLET	VIOLACEAE
Viola pratincola	BLUE PRAIRIE VIOLET	VIOLACEAE
Viola primulifolia	WHITE VIOLET	VIOLACEAE
Viola sororia	MEADOW VIOLET	VIOLACEAE
Viola walteri	STEMMED BLUE VIOLET	VIOLACEAE
Vitis aestivalis	SUMMER GRAPE	VITACEAE
Vitis cinera	GRAY GRAPE	VITACEAE
Vitis lincecunii	POST OAK GRAPE	VITACEAE
Vitis rotundifolia	MUSCADINE	VITACEAE
Vulpia myuros	RATTAIL SIXWEEKSGRASS	POACEAE
Vulpia octoflora	COMMON SIXWEEKSGRASS	POACEAE
Wahlenbergia marginata	WAHLENBERGIA	CAMPANULACEAE
Wisteria frutescens	AMERICAN WISTERIA	FABACEAE
Wisteria sinensis	CHINESE WISTERIA	FABACEAE
Woodwardia areolata	NETTED CHAIN FERN	BLECHNACEAE
Woodwardia virginica	VIRGINIA CHAIN FERN	BLECHNACEAE
Xanthium strumarium	COCKLEBUR	ASTERACEAE
Xanthorhiza simplicissima	YELLOW ROOT	RANUNCULACEAE

Table C1. Plant Species, with Common Name and Family, from the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Plant Species	Common Name	Family
Xyris ambigua	YELLOW-EYED GRASS	XYRIDACEAE
Xyris baldwiniana	YELLOW-EYED GRASS	XYRIDACEAE
Xyris caroliniana	CAROLINA YELLOW-EYED GRASS	XYRIDACEAE
Xyris difformis var. curtisii	YELLOW-EYED GRASS	XYRIDACEAE
Xyris difformis var. difformis	YELLOW-EYED GRASS	XYRIDACEAE
Xyris drummondii	SMALL YELLOW-EYED GRASS	XYRIDACEAE
Xyris jupicai	YELLOW-EYED GRASS	XYRIDACEAE
Xyris laxifolia var. iridifolia	IRISLEAF YELLOW-EYED GRASS	XYRIDACEAE
Xyris louisianica	KRAL'S YELLOW-EYED GRASS	XYRIDACEAE
Xyris platylepis	YELLOW-EYED GRASS	XYRIDACEAE
Xyris scabrifolia	YELLOW-EYED GRASS	XYRIDACEAE
Xyris stricta	PINELAND YELLOW-EYED GRASS	XYRIDACEAE
Xyris torta	TWISTED YELLOW-EYED GRASS	XYRIDACEAE
Youngia japonica	JAPANESE HAWKWEED	ASTERACEAE
Yucca aloifolia	SPANISH DAGGER	AGAVACEAE
Yucca louisianensis	LOUISIANA YUCCA	AGAVACEAE
Zanthoxylum clava-herculis	TOOTHACHE TREE	RUTACEAE
Zea mays	CORN	POACEAE
Zephyranthes candida	FALL CROCUS	LILIACEAE
Zigadenus densus	BLACK DEATHCAMAS	LILIACEAE
Zizaniopsis miliacea	SOUTHERN WILDRICE	POACEAE
Zizia aurea	GOLDEN ALEXANDERS	APIACEAE
Zornia bracteata	VIPERINA	FABACEAE

Table C2. Plant Species and vegetational type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana

[* = reported from Vernon Parish and in the LUA; ** = reported from Fort Polk and in the LUA.]

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Acacia angustissima	-	-	-	-	-	-	-	-	-	-	**
Acalypha gracilens	-	-	-	+	+	+	+	+	-	-	-
Acalypha rhomboidea	-	-	-	-	+	+	-	-	+	-	-
Acanthospermum australe	-	-	-	+	-	-	-	-	-	-	-
Acer barbatum	-	-	-	-	+	-	-	-	-	-	-
Acer negundo	-	-	-	-	-	-	-	-	-	-	*
Acer rubrum var drummondii	-	+	+	-	-	-	-	-	+	-	-
Acer rubrum var rubrum	-	-	-	+	+	+	+	-	-	-	-
Acer saccharinum	-	-	-	-	-	-	-	-	-	-	*
Acer saccharum	-	-	-	-	+	-	-	-	-	-	-
Achillea millefolium	-	-	-	-	-	-	-	+	-	-	-
Acmella oppositifolia var. repens	-	-	-	-	-	-	-	-	+	-	-
Aeschynomene indica	-	-	-	-	-	-	-	+	-	-	-
Aesculus pavia	-	-	-	-	+	+	-	-	-	-	-
Agalinis fasciculata	-	-	-	-	-	-	-	+	-	-	-
Agalinis oligophylla	+	+	+	+	+	+	+	-	-	-	-
Agalinis pinetorum	+	+	+	+	+	+	+	-	-	-	-
Agalinis purpurea	+	+	+	+	+	+	+	-	-	-	-
Agalinis tenuifolia	+	+	+	+	+	+	+	-	-	-	-
Agalinis viridis	+	+	+	+	+	+	+	-	-	-	-
Ageratina altissima	-	-	+	+	-	+	+	-	-	-	-
Agrimonia microcarpa	-	-	-	-	+	+	-	-	-	-	-
Agrostis elliottiana	-	-	-	-	-	-	-	+	-	-	-
Agrostis hyemalis	-	-	-	-	-	-	-	+	-	-	-
Agrostis perennans	-	-	-	-	+	-	-	-	-	-	-
Aira elegans	-	-	-	-	-	-	-	+	-	-	-
Albizia julibrissin	-	-	-	-	-	-	-	+	-	-	-
Aletris aurea	+	+	+	-	-	-	-	-	-	-	-
Aletris farinosa	+	+	+	-	-	-	-	-	-	-	-
Allium canadense var mobilense	-	-	-	+	+	+	+	+	-	-	-
Allium canadense var. canadense	-	-	-	-	-	-	-	+	-	-	-
Alnus serrulata	+	+	+	-	-	-	-	+	+	-	-
Alopecurus carolinianus	-	-	-	-	-	-	-	+	-	-	-
Alophia drummondii	-	-	-	+	-	+	+	-	-	-	-
Alternanthera caracasana	-	-	-	-	-	-	-	+	-	-	-
Amaranthus viridis	-	-	-	-	-	-	-	+	-	-	-
Ambrosia artemisiifolia	-	-	-	-	-	-	-	+	-	-	-
Ambrosia bidentata	-	-	-	-	-	-	-	+	-	-	-
Ambrosia psilostachya	-	-	-	+	-	+	+	+	-	-	-

Table C2. Plant Species and vegetational type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Ambrosia trifida	-	-	-	-	-	-	-	+	-	-	-
Amelanchier arborea	-	-	-	-	+	+	-	-	-	-	-
Ammannia coccinea	-	-	-	-	-	-	-	+	+	-	-
Amorpha paniculata	-	-	-	-	+	-	-	-	+	-	-
Ampelopsis arborea	-	-	-	-	-	-	-	+	+	-	-
Amsonia ludoviciana	-	-	-	-	-	-	-	-	-	-	*
Amsonia rigida	-	-	-	-	-	-	-	-	-	-	*
Amsonia tabernaemontana	-	-	-	-	-	-	-	-	-	-	*
Anagalis arvensis	-	-	-	-	-	-	-	+	-	-	-
Anagallis minima	-	-	-	-	+	+	-	+	-	-	-
Andropogon gerardii	-	-	+	+	-	+	+	-	-	-	-
Andropogon glomeratus	+	+	+	-	-	+	-	+	-	-	-
Andropogon gyrans	-	-	-	+	-	+	+	-	-	-	-
Andropogon liebmannii	+	-	+	-	-	-	-	-	-	-	-
Andropogon ternarius	-	-	-	+	-	+	+	-	-	-	-
Andropogon virginicus	-	-	-	+	+	+	+	-	-	-	-
Antennaria parlinii ssp. fallax	-	-	-	-	+	-	-	-	-	-	-
Anthaenantia villosa	+	+	+	+	-	-	+	-	-	-	-
Anthaenantia rufa	+	+	+	+	-	-	+	-	-	-	-
Apios americana	-	-	-	-	+	-	-	-	-	-	-
Apocynum cannabinum	-	-	-	-	-	-	-	-	-	-	**
Apteria aphylla	+	+	+	-	-	-	-	-	-	-	-
Aralia spinosa	-	-	-	-	+	+	+	-	-	-	-
Arisaema dracontium	-	+	-	-	+	+	-	-	-	-	-
Arisaema triphyllum	-	+	-	-	+	+	-	-	-	-	-
Arisaema triphyllum ssp. pusilla	-	+	-	-	+	+	-	-	-	-	-
Arisaema triphyllum ssp. quinatum -	+	-	-	+	+	-	-	-	-	-	
Aristida dichotoma	-	-	-	-	-	-	-	+	-	-	-
Aristida lanosa	-	-	+	+	+	+	+	-	-	-	-
Aristida longespica var. geniculata	-	-	-	+	+	+	+	-	-	-	-
Aristida longespica var. longespica	-	-	-	+	+	+	+	-	-	-	-
Aristida oligantha	-	-	-	-	-	-	-	+	-	-	-
Aristida palustris	+	+	+	-	-	-	-	-	-	-	-
Aristida purpurascens var. purpurascens	+	+	+	+	+	+	+	-	-	-	-
Aristida purpurascens var. virgata	+	+	+	+	+	+	+	-	-	-	-
Aristida ramosissima	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Aristolochia reticulata	-	-	-	+	-	+	+	-	-	-	-
Aristolochia serpentaria	-	-	-	-	+	+	-	-	-	-	-
Aristolochia tomentosa	-	-	-	-	-	-	-	-	-	-	*
Aronia arbutifolia	+	+	+	-	-	-	-	-	-	-	-
Arundinaria gigantea ssp gigantea -	-	-	-	+	+	-	-	-	-	-	
Asclepias amplexicaule	-	-	-	+	-	-	-	-	-	-	-
Asclepias longifolia	-	-	-	+	+	+	+	-	-	-	-
Asclepias obovata	-	-	-	+	+	+	+	-	-	-	-
Asclepias perennis	-	-	-	-	-	-	-	-	+	+	-
Asclepias rubra	+	+	+	-	-	-	-	-	-	-	-
Asclepias tuberosa	-	-	-	+	+	+	+	-	-	-	-
Asclepias variegata	-	-	-	-	+	+	-	-	-	-	-
Asclepias verticillata	-	-	-	-	-	+	+	-	-	-	-
Asclepias viridiflora	-	-	-	+	+	+	+	-	-	-	-
Asclepias viridis	-	-	-	+	+	+	+	-	-	-	-
Asimina parviflora	-	-	-	+	-	-	+	-	-	-	-
Asimina triloba	-	-	-	-	+	+	-	-	-	-	-
Asplenium platyneuron	-	-	-	-	+	+	-	-	-	-	-
Aster drummondii	-	-	-	-	+	+	-	-	-	-	-
Aster dumosus	-	+	+	+	+	+	+	-	-	-	-
Aster fragilis	-	-	-	+	-	+	+	-	-	-	-
Aster lanceolatus	-	-	-	+	-	+	+	-	-	-	-
Aster lateriflorus	-	-	-	-	+	+	-	-	-	-	-
Aster paludosus ssp. hemisphericus -	-	-	+	-	+	+	-	-	-	-	
Aster patens	-	-	+	+	+	+	+	-	-	-	-
Aster pilosus	-	-	+	+	-	+	+	-	-	-	-
Aster sericeus var. microphyllus	-	-	-	+	-	+	+	-	-	-	-
Aster subulatus	-	-	-	+	-	+	+	-	-	-	-
Aster subulatus var. ligulatus	-	-	-	-	-	-	-	+	-	-	-
Aster umbellatus var. latifolius	+	+	+	-	-	-	-	-	-	-	-
Athyrium felix-femina	-	+	+	-	+	+	-	-	-	-	-
Aureolaria flava	-	-	-	-	+	+	-	-	-	-	-
Aureolaria grandiflora	-	-	-	-	+	+	-	-	-	-	-
Aureolaria pectinata	-	-	-	+	-	-	+	-	-	-	-
Aureolaria virginica	-	-	-	-	+	+	-	-	-	-	-
Avena sativa	-	-	-	-	-	-	-	+	-	-	-
Axonopus affinis	+	+	+	+	+	+	+	+	+	-	-
Axonopus furcatus	-	-	-	-	-	-	-	-	+	-	-
Baccharis halimifolia	-	-	+	+	+	+	+	+	+	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Bacopa caroliniana	-	-	-	-	-	-	-	-	+	+	-
Baptisia alba var. macrophylla	-	-	-	-	-	-	-	-	-	-	**
Baptisia bracteata var. laevicaulis	-	-	+	+	+	+	+	-	-	-	-
Baptisia bracteata var. leucophaea	-	-	+	+	+	+	+	-	-	-	-
Baptisia nuttalliana	-	-	+	+	+	+	+	-	-	-	-
Bartonia paniculata	+	+	+	-	-	-	-	-	-	-	-
Berchemia scandens	-	-	-	+	+	+	+	+	+	-	-
Berlandiera pumila	-	-	-	+	-	-	+	-	-	-	-
Berlandiera x betonicifolia	-	-	-	+	-	-	+	-	-	-	-
Betula nigra	-	-	-	-	-	-	-	-	-	-	*
Bidens aristosa	-	-	-	-	+	+	-	+	-	-	-
Bidens bipinnata	-	-	-	-	-	-	-	-	+	-	-
Bidens discoidea	-	-	-	-	-	-	-	-	+	-	-
Bidens frondosa	-	-	-	-	+	+	-	+	-	-	-
Bigelowia nuttallii	-	-	-	+	-	+	+	-	-	-	-
Bignonia capreolata	-	+	+	+	+	+	+	-	-	-	-
Boehmeria cylindrica	+	+	-	-	+	+	-	-	+	-	-
Boerhaavia erecta	-	-	-	-	-	-	-	+	-	-	-
Boltonia diffusa	-	-	+	-	-	+	+	-	+	-	-
Bothriochloa ischaemum	-	-	-	-	-	-	-	+	-	-	-
Bothriochloa laguroides ssp. torreyana	-	-	-	-	-	-	-	+	-	-	-
Botrychium biternatum	-	+	-	-	+	+	-	-	-	-	-
Botrychium virginiana	-	-	-	-	+	+	-	-	-	-	-
Brachiaria platyphylla	-	-	-	-	-	-	-	+	-	-	-
Brachyelytrum erectum	-	-	-	-	+	-	-	-	-	-	-
Brasenia schreberi	-	-	-	-	-	-	-	-	+	+	-
Brassica juncea	-	-	-	-	-	-	-	+	-	-	-
Brickellia eupatorioides	-	-	+	+	-	+	+	-	-	-	-
Briza minor	-	-	-	-	-	-	-	+	-	-	-
Bromus japonicus	-	-	-	-	-	-	-	+	-	-	-
Bromus pubescens	-	-	-	-	+	-	-	-	-	-	-
Bromus racemosus	-	-	-	-	-	-	-	+	-	-	-
Bromus tectorum	-	-	-	-	-	-	-	+	-	-	-
Bromus unioloides	-	-	-	-	-	-	-	+	-	-	-
Brunnichia ovata	-	-	-	-	-	-	-	+	+	-	-
Buchnera americana	-	-	-	+	-	+	+	-	-	-	-
Bulbostylis barbata	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Bulbostylis capillaris	-	-	-	+	-	-	+	-	-	-	-
Bulbostylis ciliatifolia	-	-	-	+	-	-	+	-	-	-	-
Bumelia lanuginosa	-	-	-	+	+	+	+	-	-	-	-
Bumelia lycioides	-	-	-	-	-	-	-	-	-	-	*
Burmannia biflora	+	+	+	-	-	-	-	-	-	-	-
Burmannia capitata	+	+	+	-	-	-	-	-	-	-	-
Cabomba caroliniana	-	-	-	-	-	-	-	-	-	+	-
Cacalia ovata	+	+	+	-	-	+	+	-	+	-	-
Cacalia plantaginea	+	+	+	-	-	+	+	-	+	-	-
Callicarpa americana	-	-	+	+	+	+	+	-	-	-	-
Callirhoe papaver	-	-	-	+	-	+	+	-	-	-	-
Callitriche heterophylla	-	-	-	-	-	-	-	+	+	+	-
Callitriche nuttallii	-	-	-	-	-	-	-	+	+	-	-
Callitriche peploides	-	-	-	-	-	-	-	+	+	-	-
Calopogon barbatus	-	-	+	-	-	-	-	-	-	-	-
Calopogon pallidus	-	-	+	-	-	-	-	-	-	-	-
Calopogon tuberosus	+	+	+	-	-	-	-	-	-	-	-
Calyptocarpus vialis	-	-	-	-	-	-	-	+	-	-	-
Camelina microcarpa	-	-	-	-	-	-	-	+	-	-	-
Campsis radicans	-	-	-	-	+	+	-	+	+	-	-
Cardamine bulbosa	-	-	-	-	-	-	-	-	+	-	-
Cardamine hirsuta	-	-	-	-	-	-	-	+	-	-	-
Cardamine parviflora	-	-	-	-	-	-	-	+	-	-	-
Carex alata	-	-	-	-	+	+	-	+	+	-	-
Carex albolutescens	-	-	-	-	+	+	-	+	+	-	-
Carex amphibola	-	-	-	-	+	+	-	-	-	-	-
Carex atlantica	-	-	-	-	+	+	-	-	-	-	-
Carex caroliniana	-	-	+	-	+	+	-	-	-	-	-
Carex cephalophora	-	+	+	-	+	+	-	-	-	-	-
Carex cherokeensis	-	-	-	+	-	+	+	+	-	-	-
Carex comosa	+	+	+	-	-	-	-	-	-	-	-
Carex complanata	-	-	-	-	+	+	-	-	-	-	-
Carex corrugata	-	-	-	-	+	+	-	-	-	-	-
Carex crebriflora	-	-	-	-	+	+	-	-	-	-	-
Carex debilis	-	+	-	-	+	+	-	-	-	-	-
Carex digitalis	-	+	+	-	+	+	-	-	-	-	-
Carex flaccosperma	-	-	-	-	+	+	-	+	-	-	-
Carex folliculata	+	+	+	-	-	-	-	-	-	-	-
Carex frankii	+	+	+	-	-	-	-	-	+	-	-
Carex glaucescens	+	+	+	-	-	-	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Carex glaucodea	-	-	-	-	+	+	-	-	-	-	-
Carex howei	-	+	+	-	+	+	-	-	-	-	-
Carex intumescens	+	+	+	-	-	-	-	-	-	-	-
Carex joorii	+	+	+	-	-	-	-	-	+	-	-
Carex leptalea	+	+	+	-	-	-	-	-	-	-	-
Carex longii	+	+	+	-	-	-	-	-	-	-	-
Carex lurida	+	+	+	-	-	-	-	-	+	-	-
Carex microdonta	-	-	-	-	-	-	-	-	-	-	**
Carex muhlenbergii	-	-	-	-	+	+	-	-	-	-	-
Carex nigromarginata	-	-	-	-	+	+	-	-	-	-	-
Carex oxylepis	+	+	+	-	+	-	-	-	-	-	-
Carex rosea	+	+	+	-	+	-	-	-	-	-	-
Carex tenax	-	-	-	-	+	+	-	-	-	-	-
Carex tribuloides	-	-	-	-	-	-	-	+	-	-	-
Carex verrucosa	-	-	-	-	-	-	-	+	-	-	-
Carpinus caroliniana	-	-	-	-	+	+	-	-	+	-	-
Carya alba	-	-	-	+	+	+	+	-	-	-	-
Carya aquatica	-	-	-	-	-	-	-	-	+	+	-
Carya cordiformis	-	-	-	-	+	+	-	-	-	-	-
Carya glabra	-	-	-	-	+	+	-	-	-	-	-
Carya glabra var. hirsuta	-	-	-	-	+	+	-	-	-	-	-
Carya illinoensis	-	-	-	-	-	-	-	-	+	-	-
Carya myristicaeformis	-	-	-	-	-	-	-	-	-	-	**
Carya ovata	-	-	-	-	+	+	-	-	-	-	-
Carya texana	-	-	-	+	-	-	+	-	-	-	-
Cassia fasciculata	-	-	-	+	-	+	+	+	-	-	-
Cassia marilandica	-	-	-	-	-	-	-	-	-	-	**
Cassia nictitans	-	-	-	+	-	-	+	-	-	-	-
Cassia occidentalis	-	-	-	-	-	-	-	+	-	-	-
Castanea pumila	-	-	-	+	+	+	+	-	-	-	-
Catalpa bignonioides	-	-	-	-	+	-	-	-	+	-	-
Ceanothus americanus	-	-	-	+	+	+	+	-	-	-	-
Celtis laevigata	-	-	-	-	-	-	-	+	-	-	-
Celtis laevigata var. reticulata	-	-	-	-	-	-	-	-	-	-	*
Celtis tenuifolia	-	-	-	-	-	-	-	-	-	-	*
Cenchrus incertus	-	-	-	-	-	-	-	+	-	-	-
Centella erecta	+	+	+	-	-	-	-	-	+	-	-
Centrosema virginiana	-	-	-	+	+	+	+	-	-	-	-
Cephalanthus occidentalis	+	+	+	-	-	-	-	+	+	-	-
Cerastium glomeratum	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Ceratophyllum demersum	-	-	-	-	-	-	-	-	-	+	-
Cercis canadensis	-	-	-	-	+	+	-	-	-	-	-
Chaerophyllum tainturieri	-	-	-	-	-	-	-	+	-	-	-
Chamaesyce cordifolia	-	-	-	+	-	-	-	-	-	-	-
Chamaesyce maculata	-	-	-	-	-	-	-	+	-	-	-
Chamaesyce nutans	-	-	-	-	-	-	-	+	-	-	-
Chamaesyce serpens	-	-	-	-	-	-	-	+	-	-	-
Chaptalia tomentosa	+	+	+	-	-	-	-	-	-	-	-
Chasmanthium latifolium	-	-	-	-	+	-	-	-	-	-	-
Chasmanthium laxum	+	+	+	-	+	-	-	-	+	-	-
Chasmanthium sessiliflorum	-	-	-	+	+	+	+	-	-	-	-
Chenopodium ambrosioides	-	-	-	-	-	-	-	+	-	-	-
Chionanthus virginica	-	+	+	+	+	+	+	-	-	-	-
Chloris virgata	-	-	-	-	-	-	-	+	-	-	-
Chrysopsis graminifolia	-	-	-	+	+	+	+	-	-	-	-
Chrysopsis mariana	-	-	-	+	+	+	+	-	-	-	-
Chrysopsis pilosa	-	-	-	+	+	+	+	-	-	-	-
Ciclospermum leptophyllum	-	-	-	-	-	-	-	+	-	-	-
Cirsium caroliniana	-	+	-	-	+	-	-	-	-	-	-
Cirsium horridulum	-	-	-	-	-	-	-	+	-	-	-
Claytonia virginica	-	-	-	-	-	-	-	-	-	-	*
Cleistes divaricata	-	-	-	-	-	-	-	-	-	-	*
Clematis crispa	-	-	-	-	-	-	-	-	-	-	*
Clematis reticulata	-	-	-	+	-	-	+	-	-	-	-
Clematis terniflora	-	-	-	-	-	-	-	+	-	-	-
Clematis virginiana	-	-	-	-	+	+	-	-	-	-	-
Cleome hassleriana	-	-	-	-	-	-	-	+	-	-	-
Clitoria mariana	-	-	-	+	-	-	+	-	-	-	-
Cnidoscolus texanus	-	-	-	+	-	-	+	-	-	-	-
Cocculus carolina	-	-	-	+	+	+	-	-	-	-	-
Coelorachis cylindrica	-	-	-	-	-	+	+	-	-	-	-
Coelorachis rugosa	+	+	+	-	-	-	-	-	-	-	-
Colocasia antiquorum	-	-	-	-	-	-	-	+	+	-	-
Commelina communis	-	-	-	-	-	-	-	+	-	-	-
Commelina diffusa	-	-	-	-	-	-	-	+	-	-	-
Commelina erecta	-	-	-	-	-	-	-	+	-	-	-
Commelina virginica	-	-	-	-	+	-	-	-	+	-	-
Conyza bonariensis	-	-	-	-	-	-	-	+	-	-	-
Conyza canadensis var. canadense	-	-	-	-	-	-	-	+	-	-	-
Conyza canadensis var. pusilla	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Coreopsis gladiata	+	+	+	-	-	-	-	-	-	-	-
Coreopsis lanceolata	-	-	-	+	-	+	+	-	-	-	-
Coreopsis linifolia	+	+	+	-	-	-	-	-	-	-	-
Coreopsis pubescens	-	-	-	+	-	+	+	-	-	-	-
Coreopsis tinctoria	-	-	-	-	-	-	-	+	-	-	-
Coreopsis tripteris	+	+	+	-	-	-	-	-	-	-	-
Cornus drummondii	-	+	+	-	-	-	-	-	+	-	-
Cornus florida	-	-	-	+	+	+	+	-	-	-	-
Cornus foemina	-	+	+	-	-	-	-	-	+	-	-
Coronopus didymus	-	-	-	-	-	-	-	+	-	-	-
Cortaderia dioica	-	-	-	-	-	-	-	+	-	-	-
Crataegus berberifolia	-	-	-	-	-	-	-	-	-	-	**
Crataegus brachyacantha	-	-	-	-	-	-	-	-	-	-	**
Crataegus crus-gallii	-	-	-	+	+	+	+	-	-	-	-
Crataegus marshallii	-	-	-	+	+	+	+	-	-	-	-
Crataegus opaca	-	-	-	-	-	-	-	-	+	-	-
Crataegus spathulata	-	-	-	+	+	+	+	-	-	-	-
Crataegus uniflora	-	-	-	+	+	+	+	-	-	-	-
Crataegus viridis	-	-	+	-	-	-	-	-	+	-	-
Croptilon divaricatum	-	-	-	+	-	-	-	-	-	-	-
Crotalaria lanceolata	-	-	-	-	-	-	-	+	-	-	-
Crotalaria sagittalis	-	-	-	+	-	+	+	-	-	-	-
Croton argyranthemus	-	-	-	-	-	-	-	-	-	-	*
Croton capitatus	-	-	-	-	-	-	-	+	-	-	-
Croton glandulosus	-	-	-	-	-	-	-	+	-	-	-
Croton michauxii	-	-	-	+	-	+	+	-	-	-	-
Croton monanthogynus	-	-	-	+	-	-	+	+	-	-	-
Croton willdenowii	-	-	-	+	-	-	-	-	-	-	-
Ctenium aromaticum	+	+	+	-	-	-	-	-	-	-	-
Cuphea carthagenensis	-	-	-	-	-	-	-	+	-	-	-
Cuscuta compacta	+	+	+	-	+	+	+	+	-	-	-
Cynodon dactylon	-	-	-	-	-	-	-	+	-	-	-
Cynoglossum virginianum	-	-	-	-	+	-	-	-	-	-	-
Cyperus acuminatus	-	-	-	-	-	-	-	+	-	-	-
Cyperus albomarginatus	-	-	-	-	-	-	-	+	-	-	-
Cyperus brevifolius	-	-	-	-	-	-	-	+	-	-	-
Cyperus compressus	-	-	-	-	-	-	-	+	-	-	-
Cyperus erythrorhizos	-	-	-	-	-	-	-	+	-	-	-
Cyperus flavescens	-	-	-	-	-	-	-	+	-	-	-
Cyperus globulosus	-	-	+	+	+	+	+	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Cyperus grayioides	-	-	-	+	-	-	-	-	-	-	-
Cyperus haspan	-	-	-	-	-	-	-	+	-	-	-
Cyperus iria	-	-	-	-	-	-	-	+	-	-	-
Cyperus odoratus	-	-	-	-	-	-	-	+	-	-	-
Cyperus ovularis	-	-	-	+	-	+	+	-	-	-	-
Cyperus polystachyos var. polystachyos	-	-	-	-	-	-	-	+	-	-	-
Cyperus polystachyos var. texana	-	-	-	-	-	-	-	+	-	-	-
Cyperus pseudovegetus	-	-	-	-	-	-	-	+	-	-	-
Cyperus reflexus	-	-	-	-	-	-	-	+	-	-	-
Cyperus retrofractus	-	-	-	+	-	-	+	-	-	-	-
Cyperus retrorsus	-	-	-	-	-	-	-	+	-	-	-
Cyperus rotundus	-	-	-	-	-	-	-	+	-	-	-
Cyperus sesquiflorus	-	-	-	-	-	-	-	+	-	-	-
Cyperus strigosus	-	-	-	-	-	-	-	+	-	-	-
Cyperus surinamensis	-	-	-	-	-	-	-	+	-	-	-
Cyperus tenuifolius	-	-	-	-	-	-	-	+	-	-	-
Cyperus uniflorus	-	-	-	-	-	-	-	+	-	-	-
Cyperus virens	-	-	-	-	-	-	-	+	-	-	-
Cypripedium kentuckiense	-	-	-	-	-	-	-	-	-	-	**
Cyrilla racemiflora	+	+	+	-	-	-	-	-	-	-	-
Dactylis glomerata	-	-	-	-	-	-	-	+	-	-	-
Dalea candida	-	-	-	+	-	+	+	-	-	-	-
Dalea purpurea	-	-	-	-	-	-	-	-	-	-	**
Danthonia spicata	-	-	-	-	+	-	-	-	-	-	-
Datura stramonium	-	-	-	-	-	-	-	+	-	-	-
Daucus pusillus	-	-	-	-	-	-	-	+	-	-	-
Delphenium vimineum	-	-	-	+	-	+	+	-	-	-	-
Delphinium carolinianum	-	-	-	+	-	+	+	-	-	-	-
Desmanthus illinoiensis	-	-	-	-	-	-	-	-	-	-	**
Desmodium ciliare	-	-	+	+	+	+	+	+	-	-	-
Desmodium glabellum	-	-	+	+	+	+	+	+	-	-	-
Desmodium glutinosum	-	-	+	+	+	+	+	+	-	-	-
Desmodium laevigatum	-	-	+	+	+	+	+	+	-	-	-
Desmodium lineatum	-	-	+	+	+	+	+	+	-	-	-
Desmodium nudiflorum	-	-	-	-	+	-	-	-	-	-	-
Desmodium obtusum	-	-	+	+	+	+	+	+	-	-	-
Desmodium paniculatum	-	-	+	+	+	+	+	+	-	-	-
Desmodium pauciflorum	-	-	-	-	+	-	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Desmodium rotundifolium	-	-	-	-	+	+	-	-	-	-	-
Desmodium strictum	-	-	+	+	+	+	+	+	-	-	-
Desmodium viridiflorum	-	-	+	+	+	+	+	+	-	-	-
Dichondra carolinensis	-	-	+	-	+	-	-	+	-	-	-
Dichromena colorata	-	-	+	-	-	-	-	-	-	-	-
Dichromena latifolia	+	+	+	-	-	-	-	-	-	-	-
Dicliptera brachiata	-	-	-	-	+	-	-	-	-	-	-
Digitaria ciliaris	-	-	-	-	-	-	-	+	-	-	-
Digitaria filiformis	-	-	-	+	-	+	+	-	-	-	-
Digitaria ischaemum	-	-	-	+	-	-	-	+	-	-	-
Digitaria sanguinalis	-	-	-	-	-	-	-	+	-	-	-
Digitaria villosa	-	-	-	+	-	+	+	-	-	-	-
Digitaria violascens	-	-	-	+	-	+	+	-	-	-	-
Diodia teres	-	-	-	+	-	+	+	+	-	-	-
Diodia virginiana	+	+	+	-	-	-	-	+	+	-	-
Dioscorea villosa	-	-	-	-	+	+	-	-	-	-	-
Diospyros virginiana	-	-	-	+	+	+	+	+	+	-	-
Draba brachycarpa	-	-	-	-	-	-	-	+	-	-	-
Dracopsis amplexicaulis	-	-	-	-	-	-	-	+	-	-	-
Drosera brevifolia	+	+	+	-	-	-	-	-	-	-	-
Drosera capillaris	+	+	+	-	-	-	-	-	-	-	-
Drymaria cordata	-	-	-	-	-	-	-	+	-	-	-
Duchesnea indica	-	-	-	-	-	-	-	+	-	-	-
Echinacea angustifolia	-	-	-	+	-	+	+	-	-	-	-
Echinacea pallida	-	-	-	+	-	+	+	-	-	-	-
Echinacea purpurea	-	-	-	-	-	-	-	-	-	-	**
Echinacea sanguinea	-	-	-	+	-	+	+	-	-	-	-
Echinochloa colona	-	-	-	-	-	-	-	+	-	-	-
Echinochloa crus-galli	-	-	-	-	-	-	-	+	-	-	-
Echinochloa walteri	-	-	-	-	-	-	-	+	-	-	-
Echinodorus cordifolius	-	-	-	-	-	-	-	-	+	+	-
Eclipta prostrata	-	-	-	-	-	-	-	+	-	-	-
Egeria densa	-	-	-	-	-	-	-	-	-	+	-
Eichhornia crassipes	-	-	-	-	-	-	-	-	-	+	-
Eleocharis baldwinii	-	-	-	-	-	-	-	-	+	-	-
Eleocharis elliptica	-	-	-	-	-	-	-	-	+	-	-
Eleocharis equisetoides	-	-	-	-	-	-	-	-	+	-	-
Eleocharis flavescens	-	-	-	-	-	-	-	-	+	-	-
Eleocharis microcarpa	-	-	-	-	-	-	-	-	+	-	-
Eleocharis obtusa	+	+	+	-	-	-	-	+	+	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Eleocharis quadrangulata	-	-	-	-	-	-	-	-	+	-	-
Eleocharis tortilis	+	+	+	-	-	-	-	-	-	-	-
Eleocharis tuberculosa	+	+	+	-	-	-	-	+	+	-	-
Elephantopus carolinianus	-	-	-	+	+	+	+	-	-	-	-
Elephantopus nudatus	+	+	+	-	+	-	-	-	-	-	-
Elephantopus tomentosus	+	+	+	-	+	-	-	-	-	-	-
Eleusine indica	-	-	-	-	-	-	-	+	-	-	-
Elymus virginicus	-	-	-	-	+	+	-	+	-	-	-
Epifagus virginiana	-	-	-	-	+	+	-	-	-	-	-
Eragrostis cilianensis	-	-	-	-	-	-	-	+	-	-	-
Eragrostis ciliaris	-	-	-	-	-	-	-	-	-	-	*
Eragrostis curvula	-	-	-	-	-	-	-	+	-	-	-
Eragrostis elliottii	+	+	+	-	-	-	-	-	-	-	-
Eragrostis glomerata	-	-	-	-	-	-	-	-	+	-	-
Eragrostis hypnoides	-	-	-	-	-	-	-	-	+	-	-
Eragrostis lugens	-	-	-	+	-	+	+	-	-	-	-
Eragrostis pectinacea	-	-	-	-	-	-	-	+	-	-	-
Eragrostis pilosa	-	-	-	-	-	-	-	+	-	-	-
Eragrostis refracta	+	+	+	+	-	+	+	-	-	-	-
Eragrostis secundiflora	-	-	-	+	-	-	-	+	-	-	-
Eragrostis spectabilis	+	+	+	+	+	+	+	-	-	-	-
Erechtites hieracifolia	-	-	-	-	-	-	-	+	-	-	-
Eremochloa ophiuroides	-	-	-	-	-	-	-	+	-	-	-
Erianthus contortus	+	+	+	-	-	-	-	-	-	-	-
Erianthus giganteus	+	+	+	-	-	+	+	-	+	-	-
Erianthus strictus	+	+	+	-	-	-	-	-	+	-	-
Erigeron annuus	-	-	-	+	+	+	-	+	-	-	-
Erigeron philadelphicus	-	-	-	-	-	-	-	+	-	-	-
Erigeron pulchellus	-	-	-	-	+	+	-	-	-	-	-
Erigeron strigosus	-	-	-	+	-	+	+	+	-	-	-
Erigeron tenuis	+	+	+	-	-	-	-	-	-	-	-
Eriocaulon cinereum	+	+	+	-	-	-	-	-	-	-	-
Eriocaulon compressum	+	+	+	-	-	-	-	-	-	-	-
Eriocaulon decangulare	+	+	+	-	-	-	-	-	-	-	-
Eriocaulon texense	+	+	+	-	-	-	-	-	-	-	-
Eriogonum longifolium	-	-	-	-	-	-	-	-	-	-	*
Eryngium integrifolium	-	+	+	+	-	+	+	-	-	-	-
Eryngium prostratum	-	-	-	-	+	+	-	+	+	-	-
Eryngium yuccifolium	-	+	+	+	-	+	+	-	-	-	-
Erythrina herbacea	-	-	-	+	-	-	+	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Euonymus americanus	-	-	-	-	+	+	-	-	-	-	-
Eupatorium album	-	-	+	+	-	+	+	-	-	-	-
Eupatorium capillifolium	-	-	+	+	+	+	+	+	-	-	-
Eupatorium coelestinum	-	-	-	-	+	+	+	-	-	-	-
Eupatorium compositifolium	-	-	-	+	-	+	+	-	-	-	-
Eupatorium fistulosum	+	+	+	-	-	-	-	-	-	-	-
Eupatorium glaucescens	-	-	-	+	-	+	+	-	-	-	-
Eupatorium hyssopifolium	-	-	-	+	-	+	+	-	-	-	-
Eupatorium lancifolium	-	-	+	+	-	+	+	-	-	-	-
Eupatorium leucolepis	+	+	+	-	-	-	-	-	-	-	-
Eupatorium perfoliatum	+	+	+	-	-	+	+	-	-	-	-
Eupatorium pinnatifidum	-	-	-	+	-	+	+	-	-	-	-
Eupatorium rotundifolium var. rotundifolium	-	-	+	+	-	+	+	-	-	-	-
Eupatorium rotundifolium var. scabridum	-	-	+	+	-	+	+	-	-	-	-
Eupatorium semiserratum	-	-	+	+	-	+	+	-	-	-	-
Eupatorium serotinum	-	+	+	+	+	+	+	+	+	-	-
Euphorbia bicolor	-	-	-	-	-	-	-	-	-	-	**
Euphorbia corollata	-	-	-	+	+	+	+	-	-	-	-
Euphorbia heterophylla	-	-	-	-	-	-	-	+	-	-	-
Euphorbia marginata	-	-	-	-	-	-	-	+	-	-	-
Euphorbia spathulata	-	-	-	-	-	-	-	+	-	-	-
Euthamia gymnospermoides	-	+	+	+	-	-	-	-	-	-	-
Euthamia leptocephala	-	+	+	+	+	+	+	+	+	-	-
Facelis retusa	-	-	-	-	-	-	-	+	-	-	-
Fagus grandifolia	-	-	-	-	+	+	-	-	-	-	-
Festuca arundinacea	-	-	-	-	-	-	-	+	-	-	-
Ficus carica	-	-	-	-	-	-	-	+	-	-	-
Fimbristylis autumnalis	-	-	-	-	-	-	-	+	+	-	-
Fimbristylis castanea	-	+	+	-	-	+	+	-	-	-	-
Fimbristylis miliacea	-	-	-	-	-	-	-	+	+	-	-
Fimbristylis tomentosa	-	-	-	-	-	-	-	+	+	-	-
Fimbristylis vahlii	-	-	-	-	-	-	-	+	-	-	-
Fragaria virginiana	-	-	-	-	-	-	-	+	-	-	-
Fraxinus americana	-	-	-	-	+	+	-	-	-	-	-
Fraxinus caroliniana	-	-	-	-	-	-	-	-	+	-	-
Fraxinus pennsylvanica	-	-	-	-	-	-	-	-	+	-	-
Froelichia floridana	-	-	-	+	-	-	-	-	-	-	-
Froelichia gracilis	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Fuirena bushii	+	+	+	-	-	-	-	-	-	-	-
Fuirena pumila	+	+	+	-	-	-	-	-	-	-	-
Fuirena simplex	+	+	+	-	-	-	-	-	-	-	-
Fuirena squarrosa	+	+	+	-	-	-	-	-	-	-	-
Gaillardia aestivalis var. aestivalis	-	-	-	+	-	+	+	-	-	-	-
Gaillardia aestivalis var. flavovirens	-	-	-	+	-	+	+	-	-	-	-
Gaillardia pulchella	-	-	-	-	-	-	-	+	-	-	-
Galactia erecta	-	-	-	+	-	+	+	-	-	-	-
Galactia regularis	-	-	-	+	+	+	+	-	-	-	-
Galactia volubilis	-	-	-	+	+	+	+	-	-	-	-
Galium aparine	-	-	-	-	-	-	-	+	-	-	-
Galium circaezans	-	-	-	-	+	+	-	-	-	-	-
Galium obtusum	-	-	-	-	-	-	-	+	-	-	-
Galium pilosum	-	-	-	+	+	+	+	-	-	-	-
Galium tinctorium	-	-	-	-	-	-	-	+	-	-	-
Galium uniflorum	-	-	-	-	+	+	-	-	-	-	-
Galium virgatum	-	-	-	-	-	-	-	-	-	-	**
Gamochaeta pensylvanica	-	-	-	-	+	+	-	+	-	-	-
Gamochaeta purpurea	-	-	-	-	+	+	-	+	-	-	-
Gaura lindheimeri	-	-	-	+	+	-	+	-	-	-	-
Gaura longiflora	-	-	-	+	+	-	+	+	-	-	-
Gelsemium sempervirens	-	+	+	+	+	+	+	-	-	-	-
Gentiana saponaria	+	+	+	-	-	-	-	-	-	-	-
Geranium carolinianum	-	-	-	-	-	-	-	+	-	-	-
Geranium dissectum	-	-	-	-	-	-	-	+	-	-	-
Geum canadense	-	-	-	-	+	+	-	-	-	-	-
Gillenia stipulacea	-	-	-	-	-	-	-	-	-	-	**
Glandularia canadensis	-	-	-	-	-	-	-	+	-	-	-
Glandularia pulchella	-	-	-	-	-	-	-	+	-	-	-
Glandularia tenuisecta	-	-	-	-	-	-	-	+	-	-	-
Gleditsia aquatica	-	-	-	-	-	-	-	-	-	-	*
Gleditsia triacanthos	-	-	-	-	-	-	-	-	-	-	**
Glottidium vesicarium	-	-	-	-	-	-	-	+	-	-	-
Glyceria declinata	-	-	-	-	-	-	-	-	-	-	*
Gnaphalium helleri	-	-	+	+	-	+	+	+	-	-	-
Gnaphalium obtusifolium	-	-	+	+	-	+	+	+	-	-	-
Gratiola brevifolia	+	+	+	-	-	-	-	-	+	-	-
Gratiola neglecta	+	+	+	-	-	-	-	-	+	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Gratiola pilosa	+	+	+	-	-	-	-	-	-	-	-
Gratiola virginiana	-	-	-	-	-	-	-	-	+	+	-
Gymnopogon ambiguus	-	-	+	+	-	+	+	-	-	-	-
Gymnopogon brevifolius	-	-	+	+	-	+	+	-	-	-	-
Habenaria repens	-	-	-	-	-	-	-	-	-	+	-
Halesia diptera	-	-	-	-	+	+	-	-	-	-	-
Hamamelis virginiana	-	-	-	+	+	+	+	-	-	-	-
Hedeoma hispida	-	-	-	+	-	+	+	-	-	-	-
Hedera helix	-	-	-	-	-	-	-	+	-	-	-
Hedyotis nigricans	-	-	+	+	-	+	+	-	-	-	-
Helenium amarum	-	-	-	-	-	-	-	+	-	-	-
Helenium autumnale	-	-	-	-	-	-	-	-	-	-	**
Helenium drummondii	+	+	+	-	-	-	-	-	-	-	-
Helenium flexuosum	-	-	+	-	-	+	+	-	-	-	-
Helenium vernale	+	+	+	-	-	-	-	-	-	-	-
Helianthemum carolinianum	-	-	-	+	-	+	+	-	-	-	-
Helianthemum georgianum	-	-	-	+	-	-	-	-	-	-	-
Helianthus angustifolius	-	+	+	+	-	+	+	-	-	-	-
Helianthus debilis	-	+	+	+	-	-	-	-	-	-	-
Helianthus hirsutus	-	-	-	+	-	+	+	-	-	-	-
Heliopsis gracilis	-	-	-	-	-	-	-	-	-	-	**
Heliopsis helianthoides	-	-	-	-	-	-	-	-	-	-	**
Heliotropium indicum	-	-	-	-	-	-	-	+	-	-	-
Heliotropium tenellum	-	-	-	-	-	-	-	-	-	-	**
Herbertia lahue	-	-	-	-	-	-	-	-	-	-	**
Heterotheca subaxillaris	-	-	-	+	-	+	+	+	-	-	-
Hibiscus moschuetos ssp. lasiocarpus	-	-	-	-	-	-	-	-	+	+	-
Hibiscus moschuetos ssp. moschuetos	-	-	-	-	-	-	-	-	+	+	-
Hieracium gronovii	-	-	-	+	-	+	+	-	-	-	-
Holcus lanatus	-	-	-	-	-	-	-	+	-	-	-
Hordeum pusillum	-	-	-	-	-	-	-	+	-	-	-
Houstonia micrantha	-	-	+	+	+	+	+	+	-	-	-
Houstonia purpurea var. purpurea	-	-	-	-	+	+	-	-	-	-	-
Houstonia pusilla	-	-	+	+	+	+	+	+	-	-	-
Houstonia rosea	-	-	+	+	+	+	+	+	-	-	-
Hydrocotyle ranunculoides	+	+	+	+	+	-	-	-	+	-	-
Hydrocotyle umbellata	+	+	+	+	+	-	-	-	+	-	-
Hydrocotyle verticillata	+	+	+	+	+	-	-	-	+	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Hydrolea ovata	-	-	-	-	-	-	-	-	+	+	-
Hydrolea uniflora	-	-	-	-	-	-	-	-	+	+	-
Hymenocallis eulae	-	-	-	-	+	-	-	-	+	-	-
Hymenopappus artemisiifolius	-	-	-	+	-	+	+	-	-	-	-
Hymenopappus scabiosaeus	-	-	-	+	-	+	+	-	-	-	-
Hypericum crux-andreae	+	+	+	-	+	+	-	-	-	-	-
Hypericum densiflorum	+	+	+	-	-	-	-	-	-	-	-
Hypericum drummondii	-	-	-	-	-	-	-	+	-	-	-
Hypericum fasciculatum	+	+	+	-	-	-	-	-	-	-	-
Hypericum frondosum	+	+	+	-	-	-	-	-	-	-	-
Hypericum galioides	+	+	+	-	-	-	-	-	-	-	-
Hypericum gentianoides	-	-	-	-	-	-	-	+	-	-	-
Hypericum gymnanthum	+	+	+	-	-	-	-	-	+	-	-
Hypericum hypericoides ssp. hypericoides	-	-	-	+	+	+	+	-	-	-	-
Hypericum hypericoides ssp. multicaulis	-	-	-	+	+	+	+	-	-	-	-
Hypericum mutilum	+	+	+	-	-	-	-	-	+	-	-
Hypericum nudiflorum	-	-	-	-	-	+	+	-	-	-	-
Hypericum prolificum	-	-	-	-	+	+	-	-	-	-	-
Hypericum setosum	-	-	-	+	+	+	+	-	-	-	-
Hypochoeris glabra	-	-	-	-	-	-	-	-	-	-	*
Hypochoeris microcephala	-	-	-	-	-	-	-	-	-	-	*
Hypochoeris radicata	-	-	-	-	-	-	-	-	-	-	*
Hypoxis hirsuta	+	+	+	-	-	+	+	-	-	-	-
Hypoxis juncea	+	+	+	-	-	+	+	-	-	-	-
Hypoxis micrantha	+	+	+	-	-	+	+	-	-	-	-
Hypoxis rigida	+	+	+	-	-	+	+	-	-	-	-
Hypoxis sessilis	+	+	+	-	-	+	+	-	-	-	-
Hyptis alata	+	+	+	-	-	-	-	-	+	-	-
Ilex ambigua	-	-	-	-	+	-	-	-	-	-	-
Ilex coriacea	+	+	+	-	-	-	-	-	-	-	-
Ilex decidua	-	-	-	-	+	+	-	-	+	-	-
Ilex longipes	-	-	-	-	+	+	-	-	-	-	-
Ilex opaca	-	-	-	+	+	+	+	-	-	-	-
Ilex vomitoria	-	-	-	+	+	+	+	-	-	-	-
Indigofera miniata var. leptosephala	-	-	-	-	-	-	-	-	-	-	*
Ionactis linariifolius	-	-	-	+	-	-	+	-	-	-	-
Ipomoea cordatotriloba	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Ipomoea lacunosa	-	-	-	-	-	-	-	+	-	-	-
Ipomoea nil	-	-	-	-	-	-	-	+	-	-	-
Ipomoea pandurata	-	-	-	+	-	+	+	-	-	-	-
Iris virginica	-	-	-	-	-	-	-	-	+	+	-
Isoetes melanopoda	-	-	-	-	-	-	-	-	+	+	-
Isotria verticillata	-	+	-	-	-	-	-	-	-	-	-
Itea virginica	+	+	+	-	-	-	-	-	+	-	-
Iva annua	-	-	-	-	-	-	-	+	-	-	-
Jacquemontia tamnifolia	-	-	-	-	-	-	-	+	-	-	-
Juglans nigra	-	-	-	-	-	-	-	+	-	-	-
Juncus acuminatus	-	-	-	-	-	-	-	+	+	-	-
Juncus biflorus	-	-	-	-	-	-	-	+	+	-	-
Juncus brachycarpus	-	-	-	-	-	-	-	+	+	-	-
Juncus bufonius	-	-	-	-	-	-	-	+	-	-	-
Juncus capitatus	-	-	-	-	-	-	-	+	-	-	-
Juncus coriaceus	-	-	-	-	-	-	-	+	+	+	-
Juncus dichotomus	-	-	-	-	-	-	-	+	-	-	-
Juncus diffusissimus	-	-	-	-	-	-	-	+	+	-	-
Juncus effusus	-	-	-	-	-	-	-	+	+	-	-
Juncus elliottii	+	+	+	-	-	-	-	-	-	-	-
Juncus marginatus	+	+	+	-	-	-	-	+	-	-	-
Juncus nodatus	-	-	-	-	-	-	-	+	+	-	-
Juncus polycephalus	+	+	+	-	-	-	-	+	+	+	-
Juncus repens	-	-	-	-	-	-	-	-	+	+	-
Juncus scirpoides	-	-	-	-	-	-	-	-	+	+	-
Juncus tenuis	-	-	-	-	-	-	-	+	-	-	-
Juncus trigonocarpus	-	-	-	-	-	-	-	+	+	+	-
Juncus validus	-	-	-	-	-	-	-	+	+	-	-
Juniperus virginiana	-	-	-	+	+	+	+	+	-	-	-
Justicia ovata	-	-	-	-	+	-	-	-	+	+	-
Koeleria gerardii	-	-	-	-	-	-	-	+	-	-	-
Krigia cespitosa	-	-	-	-	-	-	-	+	-	-	-
Krigia dandelion	-	-	-	-	-	+	+	+	-	-	-
Krigia virginica	-	-	-	+	-	-	+	-	-	-	-
Lachnocaulon anceps	+	+	+	-	-	-	-	-	-	-	-
Lachnocaulon digynum	+	+	+	-	-	-	-	-	-	-	-
Lactuca canadensis	-	-	-	+	-	+	+	+	-	-	-
Lactuca floridana	-	-	-	+	-	+	+	+	-	-	-
Lactuca ludoviciana	-	-	-	+	-	+	+	+	-	-	-
Lactuca serriola	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Lagenaria siceraria	-	-	-	-	-	-	-	+	-	-	-
Lagerstroemia indica	-	-	-	-	-	-	-	+	-	-	-
Lamium amplexicaule	-	-	-	-	-	-	-	+	-	-	-
Lantana camara	-	-	-	-	-	-	-	+	-	-	-
Lathyrus hirsutus	-	-	-	-	-	-	-	+	-	-	-
Lathyrus pusillus	-	-	-	-	-	-	-	+	-	-	-
Lechea mucronata	-	-	-	+	-	+	+	-	-	-	-
Lechea tenuifolia	-	-	-	+	-	+	+	-	-	-	-
Leersia oryzoides	-	+	+	-	-	-	-	-	-	-	-
Leersia virginica	-	+	+	-	+	+	-	-	-	-	-
Lemna aequinoctialis	-	-	-	-	-	-	-	-	+	-	-
Lemna minor	-	-	-	-	-	-	-	-	+	-	-
Lemna obscura	-	-	-	-	-	-	-	-	+	-	-
Lepidium virginicum	-	-	-	-	-	-	-	+	-	-	-
Leptochloa fascicularis	-	-	-	-	-	-	-	+	-	-	-
Leptochloa scabra	-	-	-	-	-	-	-	+	-	-	-
Leptoloma cognatum	-	-	-	+	-	-	+	-	-	-	-
Lepurapetalon spathulatum	-	-	-	-	-	-	-	+	-	-	-
Lespedeza capitata	-	-	-	+	-	+	+	-	-	-	-
Lespedeza cuneata	-	-	-	+	-	+	+	-	-	-	-
Lespedeza hirta	-	-	-	+	-	+	+	-	-	-	-
Lespedeza procumbens	-	-	-	+	-	+	+	-	-	-	-
Lespedeza repens	-	-	-	+	-	+	+	-	-	-	-
Lespedeza striata	-	-	-	+	-	+	+	-	-	-	-
Lespedeza stuevei	-	-	-	+	-	+	+	-	-	-	-
Lespedeza virginica	-	-	-	+	-	+	+	-	-	-	-
Leucospora multifida	-	-	-	-	-	-	-	+	-	-	-
Liatris acidota	+	+	+	+	-	+	+	-	-	-	-
Liatris aspera	+	+	+	+	-	+	+	-	-	-	-
Liatris elegans	+	+	+	+	-	+	+	-	-	-	-
Liatris pycnostachya	+	+	+	+	-	+	+	-	-	-	-
Liatris spicata	+	+	+	+	-	+	+	-	-	-	-
Liatris squarrulosa	+	+	+	+	-	+	+	-	-	-	-
Liatris squarrosa var. squarrosa	+	+	+	+	-	+	+	-	-	-	-
Ligustrum lucidum	-	-	-	-	-	-	-	+	-	-	-
Ligustrum sinense	-	-	-	-	-	-	-	+	-	-	-
Lilium michauxii	-	-	-	-	+	+	-	-	-	-	-
Limnodea arkansana	-	-	-	-	-	-	-	+	-	-	-
Limnosciadium pumilum	-	-	-	-	-	-	-	-	+	-	-
Lindera benzoin	-	-	-	-	-	-	-	-	-	-	*

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Lindernia anagallidea	-	-	-	-	-	-	-	+	+	-	-
Lindernia dubia	-	-	-	-	-	-	-	+	+	-	-
Linum floridanum var. floridana	+	+	+	+	-	+	+	-	-	-	-
Linum medium	+	+	+	+	-	+	+	-	-	-	-
Linum striatum	+	+	+	+	-	+	+	-	-	-	-
Liquidambar styraciflua	-	-	-	+	+	+	+	-	-	-	-
Liriodendron styraciflua	-	-	-	-	-	-	-	-	-	-	*
Listera australis	-	-	-	-	+	-	-	-	-	-	-
Lithospermum caroliniense	-	-	-	+	-	+	-	-	-	-	-
Lithospermum tuberosum	-	-	-	-	+	-	-	-	-	-	-
Lobelia appendiculata	-	-	+	+	-	+	+	-	-	-	-
Lobelia cardinalis	-	-	-	-	-	-	-	-	+	-	-
Lobelia flaccidifolia	-	-	-	+	-	+	+	-	-	-	-
Lobelia puberula	-	-	-	+	-	+	+	-	-	-	-
Lobelia reverchonii	+	+	+	-	-	-	-	-	-	-	-
Lolium perenne	-	-	-	-	-	-	-	+	-	-	-
Lonicera japonica	-	+	+	+	+	+	+	+	+	-	-
Lonicera sempervirens	-	-	-	-	+	+	-	-	-	-	-
Ludwigia alternifolia	+	+	+	-	-	-	-	+	+	-	-
Ludwigia decurrens	+	+	+	-	-	-	-	+	+	-	-
Ludwigia glandulosa	+	+	+	-	-	-	-	+	+	-	-
Ludwigia hirtella	+	+	+	-	-	-	-	+	+	-	-
Ludwigia leptocarpa	+	+	+	-	-	-	-	+	+	-	-
Ludwigia linearis	+	+	+	-	-	-	-	+	+	-	-
Ludwigia palustris	+	+	+	-	-	-	-	+	+	-	-
Ludwigia peploides ssp. peploides +	+	+	-	-	-	-	+	+	-	-	
Ludwigia pilosa	+	+	+	-	-	-	-	+	+	-	-
Ludwigia uruguayensis	-	-	-	-	-	-	-	+	+	-	-
Lupinus texensis	-	-	-	-	-	-	-	+	-	-	-
Luzula bulbosa	-	-	-	-	+	-	-	-	-	-	-
Luzula campestris	-	-	-	-	+	-	-	-	-	-	-
Luzula echinata	-	-	-	-	+	-	-	-	-	-	-
Lycopodium alopecuroides	+	+	+	-	-	-	-	-	-	-	-
Lycopodium appressum	+	+	+	-	-	-	-	-	-	-	-
Lycopodium carolinianum	+	+	+	-	-	-	-	-	-	-	-
Lycopodium prostratum	+	+	+	-	-	-	-	-	-	-	-
Lycopus rubellus	-	+	+	-	-	-	-	-	+	-	-
Lycopus virginicus	-	+	+	-	-	-	-	-	+	-	-
Lygodium japonicum	-	-	+	+	+	+	+	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Lyonia ligustrina	+	+	+	-	-	-	-	-	-	-	-
Lyonia lucida	+	+	+	-	+	-	-	-	-	-	-
Lysimachia radicans	-	-	+	-	+	-	-	-	+	-	-
Lythrum alatum var. lanceolatum	+	+	+	-	-	-	-	-	+	-	-
Lythrum lineare	+	+	+	-	-	-	-	-	+	-	-
Magnolia grandiflora	-	+	+	+	+	+	+	-	-	-	-
Magnolia virginiana	+	+	+	-	-	-	-	-	+	-	-
Malaxis unifolia	-	-	-	-	+	-	-	-	-	-	-
Malus angustifolia	-	-	-	+	+	+	+	-	-	-	-
Manfreda virginica	-	-	-	+	-	+	+	-	-	-	-
Marshallia caespitosa var. caespitosa	+	+	+	-	-	-	-	-	-	-	-
Marshallia graminifolia var. cynanthera	+	+	+	-	-	-	-	-	-	-	-
Marshallia trinervia	-	-	-	-	+	-	-	-	-	-	-
Matelea carolinensis	-	-	-	+	+	+	+	-	-	-	-
Matelea decipiens	-	-	-	+	+	+	+	-	-	-	-
Matelea gonocarpos	-	-	-	+	+	+	+	-	-	-	-
Mazus pumilus	-	-	-	-	-	-	-	+	-	-	-
Mecardonia acuminata	-	-	+	-	-	+	-	+	+	-	-
Medicago lupulina	-	-	-	-	-	-	-	+	-	-	-
Medicago polymorpha	-	-	-	-	-	-	-	+	-	-	-
Medicago sativa	-	-	-	-	-	-	-	+	-	-	-
Melanthium virginicum	+	+	+	-	-	-	-	-	-	-	-
Melia azedarach	-	-	-	-	-	-	-	+	-	-	-
Melica mutica	-	-	-	-	+	+	-	-	-	-	-
Melilotus alba	-	-	-	-	-	-	-	+	-	-	-
Melilotus indica	-	-	-	-	-	-	-	+	-	-	-
Melilotus officinalis	-	-	-	-	-	-	-	+	-	-	-
Melochia corchorifolia	-	-	-	-	-	-	-	+	-	-	-
Melothria pendula	-	-	-	-	-	-	-	+	-	-	-
Micranthemum umbrosum	-	-	+	-	-	-	-	+	+	+	-
Mikania cordifolia	-	-	+	-	+	+	-	+	-	-	-
Mikania scandens	-	-	+	-	+	+	-	+	-	-	-
Mimosa quadrivalvis var. angustata	-	-	-	+	-	+	+	-	-	-	-
Mimosa quadrivalvis var. hystricina	-	-	-	+	-	+	+	-	-	-	-
Mimosa quadrivalvis var. nuttallii	-	-	-	+	-	+	+	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Mimosa strigillosa	-	-	-	-	-	-	-	+	-	-	-
Mimulus alatus	-	-	-	-	+	-	-	-	+	-	-
Miscanthus sinensis	-	-	-	-	-	-	-	+	-	-	-
Mitchella repens	-	-	-	-	+	+	-	-	-	-	-
Mitreola petiolata	+	+	+	-	-	-	-	-	+	-	-
Mitreola sessilifolia	+	+	+	-	-	-	-	-	+	-	-
Modiola caroliniana	-	-	-	-	-	-	-	+	-	-	-
Mollugo verticillata	-	-	-	-	-	-	-	+	-	-	-
Monarda fistulosa	-	-	-	+	-	+	+	-	-	-	-
Monarda punctata	-	-	-	+	-	+	+	+	-	-	-
Monotropa uniflora	-	-	-	-	+	+	-	-	-	-	-
Morus alba	-	-	-	-	-	-	-	+	-	-	-
Morus rubra	-	-	-	-	+	+	-	-	+	-	-
Muhlenbergia capillaris	+	+	+	+	-	+	+	-	-	-	-
Muhlenbergia schreberi	-	-	-	-	+	+	-	+	-	-	-
Myosotis verna	-	-	-	-	-	-	-	+	-	-	-
Myosurus minimus	-	-	-	-	-	-	-	+	+	-	-
Myrica cerifera	+	+	+	+	+	+	+	-	+	-	-
Myrica heterophylla	+	+	+	-	-	-	-	-	-	-	-
Myriophyllum aquaticum	-	-	-	-	-	-	-	-	+	+	-
Myriophyllum heterophyllum	-	-	-	-	-	-	-	-	+	+	-
Najas guadalupensis	-	-	-	-	-	-	-	-	-	+	-
Narcissus jonquilla	-	-	-	-	-	-	-	+	-	-	-
Neptunia lutea	-	-	-	-	-	-	-	-	-	+	-
Nothoscordum bivalve	-	-	+	+	+	+	+	+	-	-	-
Nuphar lutea ssp. advena	-	-	-	-	-	-	-	-	-	+	-
Nuttallanthus canadensis	-	-	-	-	-	-	+	+	-	-	-
Nuttallanthus texanus	-	-	-	-	-	-	+	+	-	-	-
Nymphaea odorata	-	-	-	-	-	-	-	-	-	+	-
Nyssa aquatica	-	-	-	-	-	-	-	-	+	+	-
Nyssa sylvatica var biflora	+	+	+	-	-	-	-	-	+	+	-
Nyssa sylvatica var sylvatica	-	-	-	-	+	+	+	-	-	-	-
Oenothera biennis	-	-	-	-	-	-	-	+	-	-	-
Oenothera heterophylla	-	-	-	+	-	-	-	-	-	-	-
Oenothera laciniata	-	-	-	-	-	-	-	+	-	-	-
Oenothera linifolia	-	-	-	+	-	+	+	+	-	-	-
Oenothera speciosa	-	-	-	-	-	-	-	+	-	-	-
Oldenlandia boscii	-	-	-	-	-	-	-	+	+	-	-
Oldenlandia uniflora	-	+	+	-	-	+	+	+	+	-	-
Onoclea sensibilis	+	+	+	-	-	-	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Onosmodium virginianum	-	-	-	+	-	+	+	-	-	-	-
Ophioglossum crotalophoroides	-	-	-	-	-	-	-	+	-	-	-
Ophioglossum engelmannii	-	-	-	-	-	-	-	+	-	-	-
Ophioglossum nudicaule	-	-	-	-	-	-	-	+	-	-	-
Oplismenus setarius	-	-	-	-	+	+	-	-	-	-	-
Opuntia humifusa var. humifusa	-	-	-	-	-	-	-	+	-	-	-
Opuntia macrorhiza	-	-	-	-	-	-	-	+	-	-	-
Orbexilium simplex	-	-	+	+	-	+	+	-	-	-	-
Orbexilum pedunculatum	-	-	+	+	-	+	+	-	-	-	-
Orobanche uniflora	-	-	-	-	-	-	+	-	-	-	-
Oryza sativa	-	-	-	-	-	-	-	+	-	-	-
Osmunda cinnamomea	+	+	+	-	-	-	-	-	-	-	-
Osmunda regalis var. spectabilis	+	+	+	-	-	-	-	-	-	-	-
Ostrya virginiana	-	-	-	-	+	+	-	-	-	-	-
Oxalis corniculata	-	-	-	+	+	+	+	-	-	-	-
Oxalis corymbosa	-	-	-	+	+	+	+	-	-	-	-
Oxalis dillenii	-	-	-	+	+	+	+	-	-	-	-
Oxalis priceae	-	-	-	+	+	+	+	-	-	-	-
Oxalis stricta	-	-	-	+	+	+	+	-	-	-	-
Oxalis violacea	-	-	-	+	+	+	+	-	-	-	-
Oxypolis filiformis	+	+	+	-	-	-	-	-	-	-	-
Oxypolis rigidior	+	+	+	-	-	-	-	-	-	-	-
Panicum aciculare	-	-	+	+	-	+	+	-	-	-	-
Panicum acuminatum var. acuminatum	-	-	+	+	-	+	+	-	-	-	-
Panicum acuminatum var. leucothrix	-	-	+	+	-	+	+	-	-	-	-
Panicum acuminatum var. lindheimeri	-	-	+	+	-	+	+	-	-	-	-
Panicum acuminatum var. longiligulatum	+	+	+	-	-	-	-	-	-	-	-
Panicum anceps	-	-	+	+	+	+	+	-	-	-	-
Panicum angustifolium	-	-	+	+	-	+	+	-	-	-	-
Panicum boscii	-	-	-	-	+	+	-	-	-	-	-
Panicum brachyanthum	+	+	+	+	-	+	+	-	-	-	-
Panicum commutatum	-	-	+	+	+	+	+	-	-	-	-
Panicum consanguineum	-	-	-	+	-	-	+	-	-	-	-
Panicum depauperatum	-	-	-	+	-	-	+	-	-	-	-
Panicum dichotomiflorum	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Panicum dichotomum var. dichotomum	-	-	+	+	+	+	+	-	-	-	-
Panicum dichotomum var. lucidum	+	+	+	-	-	-	-	-	-	-	-
Panicum dichotomum var. nitidum	-	-	+	+	+	+	+	-	-	-	-
Panicum dichotomum var. ramulosum	-	-	+	+	+	+	+	-	-	-	-
Panicum ensifolium var. curtifolium	+	+	+	-	-	-	-	-	-	-	-
Panicum flexile	-	-	-	-	-	-	-	-	-	-	**
Panicum gymnocarpon	-	-	-	-	-	-	-	-	+	-	-
Panicum hemitomon	-	-	-	-	-	-	-	-	+	-	-
Panicum hians	-	-	+	-	-	-	-	+	+	-	-
Panicum laxiflorum	-	-	+	+	+	+	+	-	-	-	-
Panicum oligosanthes var. oligosanthes	-	-	+	+	+	+	+	-	-	-	-
Panicum oligosanthes var. scribnerianum	-	-	+	+	+	+	+	-	-	-	-
Panicum ovale	-	-	+	+	+	+	+	-	-	-	-
Panicum polyanthes	-	-	+	+	+	+	+	-	-	-	-
Panicum ramosum	-	-	-	-	-	-	-	+	-	-	-
Panicum ravenelii	-	-	-	+	-	-	+	-	-	-	-
Panicum rigidulum var. pubescens	+	+	+	-	-	-	-	-	-	-	-
Panicum rigidulum var. rigidulum	-	-	+	-	-	-	-	+	+	-	-
Panicum scabriusculum	+	+	+	-	-	-	-	-	-	-	-
Panicum scoparium	+	+	+	+	+	+	+	-	-	-	-
Panicum sphaerocarpon	-	-	+	+	+	+	+	-	-	-	-
Panicum strigosum var. glabrescens	+	+	+	-	-	-	-	-	-	-	-
Panicum strigosum var. strigosum	+	+	+	-	-	-	-	-	-	-	-
Panicum tenerum	+	+	+	-	-	-	-	-	-	-	-
Panicum tenue	+	+	+	-	-	-	-	-	-	-	-
Panicum texanum	-	-	-	-	-	-	-	+	-	-	-
Panicum verrucosum	+	+	+	-	-	-	-	-	+	-	-
Panicum virgatum	+	+	+	+	-	+	+	-	-	-	-
Parthenocissus quinquefolia	-	-	-	-	+	+	+	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Paspalum bifidum	-	-	-	+	-	-	+	-	-	-	-
Paspalum dilatatum	-	-	-	-	-	-	-	+	-	-	-
Paspalum floridanum	+	+	+	+	+	+	+	-	-	-	-
Paspalum laeve	-	-	-	+	+	+	+	-	-	-	-
Paspalum notatum var. saurae	-	-	-	-	-	-	-	+	-	-	-
Paspalum plicatulum	-	-	-	-	-	-	-	+	-	-	-
Paspalum praecox	+	+	+	-	-	-	-	-	-	-	-
Paspalum pubiflorum	-	-	-	-	-	-	-	-	-	-	**
Paspalum setaceum var ciliatifolium	-	-	+	+	+	+	+	-	-	-	-
Paspalum setaceum var muhlenbergii	-	-	+	+	+	+	+	-	-	-	-
Paspalum setaceum var setaceum	-	-	+	+	+	+	+	-	-	-	-
Paspalum setaceum var stramineum	-	-	+	+	+	+	+	-	-	-	-
Paspalum setaceum var supinum	-	-	+	+	+	+	+	-	-	-	-
Paspalum urvillei	-	-	-	-	-	-	-	+	-	-	-
Passiflora incarnata	-	-	-	-	+	+	-	+	-	-	-
Passiflora lutea	-	-	-	-	+	+	-	-	-	-	-
Pedicularis canadensis	-	-	-	-	+	+	-	-	-	-	-
Peltandra virginica	-	-	-	-	-	-	-	-	+	+	-
Penstemon digitalis	-	-	-	+	+	+	+	-	-	-	-
Penstemon laxiflorus	-	-	-	+	+	+	+	-	-	-	-
Penstemon tubaeflorus	-	-	-	-	-	-	-	-	-	-	**
Penthorum sedoides	-	-	+	-	-	-	-	-	+	-	-
Perilla frutescens	-	-	+	+	+	+	+	+	+	-	-
Persea palustris	+	+	+	-	-	-	-	-	+	-	-
Phalaris angusta	-	-	-	-	-	-	-	+	-	-	-
Phalaris caroliniana	-	-	-	-	-	-	-	+	-	-	-
Phlox divaricata	-	-	-	-	+	+	-	-	-	-	-
Phlox drummondii	-	-	+	+	+	+	+	-	-	-	-
Phlox pilosa	-	-	+	+	+	+	+	-	-	-	-
Phoradendron tomentosum	+	+	+	+	+	+	+	+	+	+	**
Phryma leptostachya	-	-	-	-	+	+	-	-	-	-	-
Phyla cuneifolia	-	-	-	-	-	-	-	+	-	-	-
Phyla lanceolata	-	-	-	-	-	-	-	+	-	-	-
Phyla nodiflora	-	-	-	-	-	-	-	+	-	-	-
Phyla x intermedia	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Phyllanthus caroliniensis	-	-	+	-	+	+	-	+	+	-	-
Physalis angulata	-	-	-	-	-	-	-	+	-	-	-
Physalis hederifolia	-	-	-	+	-	-	-	-	-	-	-
Physalis heterophylla	-	-	+	+	+	+	+	-	-	-	-
Physalis pumila	-	-	+	+	+	+	+	-	-	-	-
Physalis virginiana	-	-	+	+	+	+	+	-	-	-	-
Physostegia digitalis	-	-	+	-	-	+	+	-	-	-	-
Physostegia virginiana	-	-	+	-	-	+	+	-	-	-	-
Phytolacca americana	-	-	-	-	-	-	-	+	-	-	-
Pilea pumila	-	-	-	-	-	-	-	-	+	-	-
Pinguicula pumila	+	+	+	-	-	-	-	-	-	-	-
Pinus echinata	-	-	-	+	+	+	+	-	-	-	-
Pinus elliottii	-	-	+	-	-	-	-	+	-	-	-
Pinus glabra	-	-	-	-	-	-	-	+	-	-	-
Pinus palustris	-	+	+	+	+	+	+	-	-	-	-
Pinus taeda	-	+	+	+	+	+	+	-	-	-	-
Planera aquatica	-	-	-	-	-	-	-	-	+	+	-
Plantago aristata	-	-	-	-	-	-	-	+	-	-	-
Plantago heterophylla	-	-	-	-	-	-	-	+	-	-	-
Plantago lanceolata	-	-	-	-	-	-	-	+	-	-	-
Plantago virginica	-	-	+	+	+	+	+	+	-	-	-
Plantago wrightiana	-	-	-	-	-	-	-	+	-	-	-
Platanthera blephariglottis	+	+	+	-	-	-	-	-	-	-	-
Platanthera ciliaris	+	+	+	-	-	-	-	-	-	-	-
Platanthera clavellata	-	+	+	-	-	-	-	-	-	-	-
Platanthera cristata	+	+	+	-	-	-	-	-	-	-	-
Platanthera flava	-	+	+	-	-	-	-	-	-	-	-
Platanthera integra	+	+	+	-	-	-	-	-	-	-	-
Platanthera nivea	+	+	+	-	-	-	-	-	-	-	-
Platanus occidentalis	-	-	-	-	+	+	-	+	-	-	-
Pluchea camphorata	-	-	-	-	+	+	-	+	+	-	-
Pluchea foetida	+	+	+	-	-	-	-	-	-	-	-
Pluchea rosea	+	+	+	-	-	-	-	-	-	-	-
Poa annua	-	-	-	-	-	-	-	+	-	-	-
Poa autumnalis	-	-	-	-	+	+	-	-	-	-	-
Poa chapmaniana	-	-	-	-	-	-	-	+	-	-	-
Podophyllum peltatum	-	-	-	-	+	+	-	-	-	-	-
Pogonia ophioglossoides	+	+	+	-	-	-	-	-	-	-	-
Polygala cruciata	+	+	+	-	-	-	-	-	-	-	-
Polygala cymosa	+	+	+	-	-	-	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Polygala incarnata	-	-	+	+	-	+	+	-	-	-	-
Polygala leptocaulis	+	+	+	-	-	-	-	-	-	-	-
Polygala mariana	+	+	+	+	-	+	+	-	-	-	-
Polygala nana	+	+	+	+	-	+	+	-	-	-	-
Polygala polygama	-	-	-	+	-	-	+	-	-	-	-
Polygala ramosa	+	+	+	-	-	-	-	-	-	-	-
Polygala verticillata	-	-	+	+	+	+	+	-	-	-	-
Polygonatum biflorum	-	-	-	-	+	+	-	-	-	-	-
Polygonum densiflorum	-	-	-	-	-	-	-	+	+	-	-
Polygonum hydropiperoides	-	-	-	-	-	-	-	+	+	-	-
Polygonum lapathifolium	-	-	-	-	-	-	-	+	+	-	-
Polygonum pensylvanicum	-	-	-	-	-	-	-	+	+	-	-
Polygonum persicaria	-	-	-	-	-	-	-	+	+	-	-
Polygonum punctatum	-	-	-	-	-	-	-	+	+	-	-
Polygonum setaceum	-	-	-	-	-	-	-	+	+	-	-
Polygonum virginianum	-	-	-	-	+	+	-	-	-	-	-
Polypodium polypodioides	-	+	+	+	+	+	+	-	+	+	-
Polypogon monspeliensis	-	-	-	-	-	-	-	+	-	-	-
Polypremum procumbens	-	-	+	+	+	+	+	+	-	-	-
Polystichum acrostichoides	-	-	-	-	+	+	-	-	-	-	-
Poncirus trifoliata	-	-	-	-	-	-	-	+	-	-	-
Populus deltoides	-	-	-	-	-	-	-	+	-	-	-
Portulaca oleracea	-	-	-	-	-	-	-	+	-	-	-
Portulaca pilosa	-	-	-	-	-	-	-	+	-	-	-
Potamogeton diversifolius	-	-	-	-	-	-	-	-	-	+	-
Potamogeton nodosus	-	-	-	-	-	-	-	-	-	+	-
Potamogeton pulcher	-	-	-	-	-	-	-	-	-	+	-
Prenanthes barbata	-	-	-	-	+	+	-	-	-	-	-
Proserpinaca palustris	+	+	+	-	-	-	-	-	+	-	-
Proserpinaca pectinata	+	+	+	-	-	-	-	-	-	-	-
Prunella vulgaris	-	-	-	-	-	-	-	+	-	-	-
Prunus americana	-	-	-	+	+	+	+	-	-	-	-
Prunus angustifolia	-	-	-	-	-	-	-	+	-	-	-
Prunus caroliniana	-	-	-	-	+	-	-	-	-	-	-
Prunus mexicana	-	-	-	+	+	+	+	-	-	-	-
Prunus persica	-	-	-	-	-	-	-	+	-	-	-
Prunus serotina	-	-	-	+	+	+	+	-	-	-	-
Prunus umbellata	-	-	+	+	-	-	-	-	-	-	-
Psilocarya nitens	-	-	+	-	-	-	-	-	+	-	-
Ptelea trifoliata	-	-	-	-	+	-	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Pteridium aquilinum	-	-	+	+	-	+	+	-	-	-	-
Pteroglossaspis ecristata	-	-	-	-	-	-	-	-	-	-	*
Ptilimnium capillaceum	+	+	+	-	-	-	-	-	+	-	-
Ptilimnium costatum	+	+	+	-	-	-	-	-	-	-	-
Ptilimnium nuttallii	+	+	+	-	-	-	-	-	-	-	-
Ptilimnium x texense	+	+	+	-	-	-	-	-	-	-	-
Pueraria montana var. lobata	-	-	-	-	-	-	-	+	-	-	-
Pycnanthemum albescens	-	-	+	+	+	+	+	-	-	-	-
Pycnanthemum tenuifolium	-	-	+	+	+	+	+	-	-	-	-
Pyracantha coccinea	-	-	-	-	-	-	-	+	-	-	-
Pyrrhopappus carolinianus	-	-	+	+	+	+	+	+	-	-	-
Pyrus communis	-	-	-	-	-	-	-	+	-	-	-
Quercus alba	-	-	-	+	+	+	+	-	-	-	-
Quercus falcata var falcata	-	-	-	+	+	+	+	-	-	-	-
Quercus hemisphaerica	-	-	-	-	+	+	+	-	-	-	-
Quercus incana	-	-	-	+	-	-	+	-	-	-	-
Quercus laurifolia	+	+	+	-	-	-	-	-	+	-	-
Quercus lyrata	-	-	-	-	-	-	-	-	+	-	-
Quercus margarettiae	-	-	-	+	-	-	-	-	-	-	-
Quercus marilandica	-	-	+	+	-	-	+	-	-	-	-
Quercus michauxii	-	-	-	-	+	+	-	-	-	-	-
Quercus muhlenbergii	-	-	-	-	-	-	-	-	-	-	**
Quercus nigra	-	+	+	+	+	+	+	-	+	-	-
Quercus pagoda	-	-	-	-	+	-	-	-	+	-	-
Quercus phellos	-	-	-	-	+	+	-	-	+	-	-
Quercus shumardii	-	-	-	-	+	+	-	-	-	-	-
Quercus similis	-	-	-	-	-	-	-	-	+	-	-
Quercus stellata	-	-	-	+	+	+	+	-	-	-	-
Quercus velutina	-	-	-	-	+	+	-	-	-	-	-
Quercus virginiana	-	-	-	-	-	-	-	+	-	-	-
Ranunculus abortivus	-	-	-	-	-	-	-	+	+	-	-
Ranunculus fascicularis	-	-	+	-	-	-	+	+	+	-	-
Ranunculus marginatus	-	-	-	-	-	-	-	+	+	-	-
Ranunculus muricatus	-	-	-	-	-	-	-	+	+	-	-
Ranunculus parviflorus	-	-	-	-	+	+	-	-	-	-	-
Ranunculus platensis	-	-	-	-	-	-	-	+	+	-	-
Ranunculus pusillus	-	-	-	-	-	-	-	+	+	-	-
Ranunculus sardous	-	-	-	-	-	-	-	+	+	-	-
Ranunculus scleratus	-	-	-	-	-	-	-	+	+	-	-
Ratibida pinnata	-	-	-	-	-	-	-	-	-	-	**

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Rhamnus caroliniana	-	-	-	-	+	+	-	-	-	-	-
Rhexia alifanus	+	+	+	-	-	-	-	-	-	-	-
Rhexia lutea	+	+	+	-	-	-	-	-	-	-	-
Rhexia mariana	+	+	+	-	-	+	+	-	+	-	-
Rhexia petiolata	+	+	+	-	-	-	-	-	-	-	-
Rhexia virginica	+	+	+	-	-	-	-	-	+	-	-
Rhododendron canescens	+	+	+	-	+	+	-	-	-	-	-
Rhododendron coryi	+	+	+	-	-	-	-	-	-	-	-
Rhododendron oblongifolium	+	+	+	-	-	-	-	-	-	-	-
Rhododendron viscosum	+	+	+	-	-	-	-	-	-	-	-
Rhus aromatica	-	-	-	-	-	-	-	-	-	-	*
Rhus copallinum	-	-	+	+	+	+	+	-	-	-	-
Rhynchosia difformis	-	-	+	+	-	+	+	-	-	-	-
Rhynchosia latifolia	-	-	+	+	-	+	+	-	-	-	-
Rhynchosia reniformis	-	-	+	+	-	+	+	-	-	-	-
Rhynchosia tomentosa	-	-	+	+	-	+	+	-	-	-	-
Rhynchospora caduca	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora capitellata	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora cephalantha	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora chalarocephala	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora corniculata	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora debilis	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora elliottii	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora fascicularis	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora filifolia	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora globularis	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora glomerata	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora gracilenta	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora grayi	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora harveyi	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora inexpansa	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora intermixta	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora macra	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora macrostachya	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora microcarpa	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora miliacea	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora mixta	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora oligantha	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora perplexa	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora plumosa	+	+	+	-	-	+	+	+	+	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Rhynchospora pusilla	+	+	+	-	-	+	+	+	+	-	-
Rhynchospora rariflora	+	+	+	-	-	+	+	+	+	-	-
Richardia scabra	-	-	-	-	-	-	-	+	-	-	-
Robinia hispida	-	-	-	-	-	-	-	+	-	-	-
Robinia pseudoacacia	-	-	-	-	-	-	-	+	-	-	-
Rorippa sessiliflora	-	-	-	-	-	-	-	+	+	-	-
Rosa bracteata	-	-	-	-	-	-	-	+	-	-	-
Rosa laevigata	-	-	-	-	-	-	-	+	-	-	-
Rotala ramosior	-	-	-	-	-	-	-	+	+	-	-
Rubus aboriginum	+	+	+	+	+	+	+	+	+	-	-
Rubus argutus	+	+	+	+	+	+	+	+	+	-	-
Rubus flagellaris	+	+	+	+	+	+	+	+	+	-	-
Rubus trivialis	+	+	+	+	+	+	+	+	+	-	-
Rudbeckia grandiflora	-	-	+	+	-	+	+	-	-	-	-
Rudbeckia hirta	-	-	+	+	-	+	+	-	-	-	-
Rudbeckia missouriensis	-	-	-	-	-	-	-	-	-	-	**
Rudbeckia nitida	-	-	-	-	-	-	-	-	+	-	-
Rudbeckia scabrifolia	+	+	+	-	-	-	-	-	-	-	-
Rudbeckia subtomentosa	-	-	+	-	+	+	-	-	-	-	-
Ruellia caroliniensis	-	-	+	+	+	+	+	-	-	-	-
Ruellia humilis	-	-	+	+	-	+	+	-	-	-	-
Rumex crispus	-	-	-	-	-	-	-	+	-	-	-
Rumex hastatulus	-	-	-	-	-	-	-	+	-	-	-
Rumex pulcher	-	-	-	-	-	-	-	+	-	-	-
Sabal minor	-	-	-	-	-	-	-	-	+	-	-
Sabatia brachiata	-	-	+	+	+	+	+	-	-	-	-
Sabatia campestris	-	-	+	+	+	+	+	-	-	-	-
Sabatia gentianoides	+	+	+	-	-	-	-	-	-	-	-
Sabatia macrophylla	+	+	+	-	-	-	-	-	-	-	-
Sacciolepis indica	-	-	-	-	-	-	-	+	-	-	-
Sagina decumbens	-	-	-	-	-	-	-	+	-	-	-
Sagittaria calycina	-	-	-	-	-	-	-	+	+	-	-
Sagittaria graminea	-	-	+	-	-	-	-	+	+	-	-
Sagittaria latifolia	-	-	+	-	-	-	-	+	+	-	-
Sagittaria papillosa	-	-	-	-	-	-	-	+	+	-	-
Sagittaria platyphylla	-	-	-	-	-	-	-	+	+	-	-
Salix exigua	-	-	-	-	-	-	-	+	+	-	-
Salix nigra	-	-	-	-	-	-	-	+	+	-	-
Salvia azurea	-	-	+	+	-	+	+	-	-	-	-
Salvia lyrata	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Sambucus canadensis	-	-	-	-	+	+	-	+	+	-	-
Samolus valerandi ssp. parviflorus	-	-	+	-	+	+	-	+	+	-	-
Sanicula canadensis	-	-	-	-	+	+	-	-	-	-	-
Sapium sebiferum	-	-	-	-	-	-	-	+	-	-	-
Sarracenia alata	+	+	+	-	-	-	-	-	-	-	-
Sassafras albidum	-	-	-	+	+	+	+	-	-	-	-
Saururus cernuus	-	-	-	-	-	-	-	-	+	+	-
Schizachyrium scoparium	+	-	+	+	+	+	+	-	-	-	-
Schizachyrium tenerum	+	-	+	+	-	+	+	-	-	-	-
Schoenolirion croceum	+	+	+	-	-	-	-	-	-	-	-
Scirpus atrovirens	+	+	+	-	-	-	-	-	-	-	-
Scirpus cyperinus	+	+	+	-	-	-	-	-	-	-	-
Scirpus koilolepis	-	-	-	-	-	-	-	+	-	-	-
Scirpus lineatus	+	+	+	-	-	-	-	-	-	-	-
Scirpus molestus	+	+	+	-	-	-	-	-	-	-	-
Scleria baldwinii	+	+	+	-	-	-	-	-	-	-	-
Scleria ciliata	+	+	+	-	-	-	-	-	-	-	-
Scleria georgiana	+	+	+	-	-	-	-	-	-	-	-
Scleria oligantha	+	+	+	+	+	+	+	-	-	-	-
Scleria pauciflora	+	+	+	-	-	-	-	-	-	-	-
Scleria reticularis	+	+	+	-	-	-	-	-	-	-	-
Scleria triglomerata	+	+	+	+	+	+	+	-	-	-	-
Scoparia dulcis	-	-	-	-	-	-	-	+	-	-	-
Scutellaria cardiophylla	-	-	+	+	+	+	+	-	-	-	-
Scutellaria drummondii	-	-	+	+	-	+	+	-	-	-	-
Scutellaria elliptica	-	-	+	+	+	+	+	-	-	-	-
Scutellaria integrifolia	-	-	+	+	+	+	+	-	-	-	-
Scutellaria ovata	-	-	+	+	+	+	+	-	-	-	-
Scutellaria parvula	-	-	+	+	-	+	+	-	-	-	-
Sebastiana fruticosa	-	-	-	-	+	-	-	-	-	-	-
Selaginella apoda	-	-	-	-	-	-	-	-	+	-	-
Selaginella arenicola	-	-	-	-	-	-	-	-	-	-	*
Senecio glabellus	-	-	-	-	-	-	-	+	-	-	-
Senecio plattensis	-	-	+	+	-	+	+	-	-	-	-
Senecio tomentosus	-	-	+	+	-	+	+	-	-	-	-
Sesbania exaltata	-	-	-	-	-	-	-	+	-	-	-
Sesbania punicea	-	-	-	-	-	-	-	+	-	-	-
Setaria geniculata	-	-	-	-	-	-	-	+	-	-	-
Setaria glauca	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Seymeria cassinoides	-	-	-	+	-	+	+	-	-	-	-
Sherardia arvensis	-	-	-	-	-	-	-	+	-	-	-
Sida rhombifolia	-	-	-	-	-	-	-	+	-	-	-
Sida spinosa	-	-	-	-	-	-	-	+	-	-	-
Silene antirrhina	-	-	-	-	-	-	-	+	-	-	-
Silene gallica	-	-	-	-	-	-	-	-	-	-	*
Silene stellata	-	-	-	-	-	-	-	-	-	-	*
Silene subciliata	-	-	-	-	-	-	-	-	-	-	*
Silphium asteriscus	-	-	+	+	-	+	+	-	-	-	-
Silphium gracile	-	-	+	+	-	+	+	-	-	-	-
Silphium integrifolium	-	-	+	+	-	+	+	-	-	-	-
Silphium laciniatum	-	-	-	-	-	-	-	-	-	-	**
Silphium radula	+	+	+	-	-	-	-	-	-	-	-
Sisyrinchium albidum	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium angustifolium	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium atlanticum	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium campestre	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium exile	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium langloisii	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium mucronatum	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium rosulatum	-	-	+	+	+	+	+	+	-	-	-
Sisyrinchium sagittiferum	-	-	+	+	+	+	+	+	-	-	-
Smallanthus uvedalia	-	-	-	-	+	+	-	-	-	-	-
Smilax bona-nox	+	+	+	+	+	+	+	-	-	-	-
Smilax glauca	+	+	+	+	+	+	+	-	-	-	-
Smilax herbacea	-	-	-	-	-	-	-	-	-	-	**
Smilax hispida	-	-	-	-	+	+	-	-	-	-	-
Smilax laurifolia	+	+	+	-	-	-	-	-	-	-	-
Smilax pumila	-	-	-	-	+	+	-	-	-	-	-
Smilax rotundifolia	-	+	+	+	+	+	+	-	+	-	-
Smilax smallii	-	+	+	+	+	+	+	-	+	-	-
Smilax walteri	-	-	-	-	-	-	-	-	+	+	-
Solanum carolinense	-	-	-	-	-	-	-	+	-	-	-
Solanum elaeagnifolium	-	-	-	-	-	-	-	+	-	-	-
Solanum ptycanthum	-	-	-	-	-	-	-	+	-	-	-
Solanum rostratum	-	-	-	-	-	-	-	+	-	-	-
Solidago arguta var. boottii	+	+	+	-	-	-	-	-	-	-	-
Solidago auriculata	-	-	-	-	-	-	-	-	-	-	**
Solidago caesia	-	-	-	-	+	+	-	-	-	-	-
Solidago canadensis	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Solidago ludoviciana	+	+	+	-	-	-	-	-	-	-	-
Solidago nitida	-	-	+	+	-	+	+	-	-	-	-
Solidago odora	-	-	+	+	-	+	+	-	-	-	-
Solidago patula	-	-	+	+	-	+	+	-	-	-	-
Solidago patula var. strictula	+	+	+	+	-	-	-	-	-	-	-
Solidago petiolaris	-	-	+	+	-	+	+	-	-	-	-
Solidago radula	-	-	+	+	-	+	+	-	-	-	-
Solidago rugosa ssp. aspera	-	-	+	+	-	+	+	-	-	-	-
Solidago rugosa ssp. rugosa	-	-	+	+	-	+	+	-	-	-	-
Solidago speciosa	-	-	+	+	-	+	+	-	-	-	-
Solidago tortifolia	-	-	+	+	-	+	+	-	-	-	-
Solidago ulmifolia	-	-	+	+	-	+	+	-	-	-	-
Soliva sessilis	-	-	-	-	-	-	-	+	-	-	-
Sonchus asper	-	-	-	-	-	-	-	+	-	-	-
Sonchus oleraceus	-	-	-	-	-	-	-	+	-	-	-
Sorghastrum elliottii	-	-	-	+	-	+	+	-	-	-	-
Sorghastrum nutans	-	-	+	+	-	+	+	-	-	-	-
Sorghum bicolor	-	-	-	-	-	-	-	+	-	-	-
Sorghum halepense	-	-	-	-	-	-	-	+	-	-	-
Sparganium americanum	-	-	-	-	-	-	-	-	-	+	-
Spermolepis divaricata	-	-	-	-	-	-	-	+	-	-	-
Spermolepis echinata	-	-	-	-	-	-	-	+	-	-	-
Spermolepis inermis	-	-	-	-	-	-	-	+	-	-	-
Sphenoclea zeylandica	-	-	-	-	-	-	-	+	-	-	-
Sphenopholis filiformis	-	-	-	+	-	-	+	-	-	-	-
Sphenopholis longiflora	-	-	+	+	+	+	+	-	-	-	-
Sphenopholis nitida	-	-	+	+	+	+	+	-	-	-	-
Sphenopholis obtusata	-	-	+	+	+	+	+	+	-	-	-
Spigelia marilandica	-	-	-	-	+	-	-	-	-	-	-
Spiranthes cernua	-	-	+	+	+	+	+	-	-	-	-
Spiranthes lacera	-	-	+	+	+	+	+	-	-	-	-
Spiranthes laciniata	-	-	+	+	+	+	+	-	-	-	-
Spiranthes longilabris	-	-	+	+	+	+	+	-	-	-	-
Spiranthes odorata	-	-	+	+	+	+	+	-	+	-	-
Spiranthes praecox	-	-	+	+	+	+	+	-	-	-	-
Spiranthes tuberosa	-	-	+	+	+	+	+	-	-	-	-
Spiranthes vernalis	-	-	+	+	+	+	+	-	-	-	-
Sporobolus asper	-	-	-	+	-	+	+	-	-	-	-
Sporobolus clandestinus	-	-	-	+	-	+	+	-	-	-	-
Sporobolus indicus	-	-	-	-	-	-	-	+	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Sporobolus junceus	-	-	+	+	-	+	+	-	-	-	-
Sporobolus neglectus	-	-	-	-	-	-	-	-	-	-	*
Sporobolus vaginiflorus	-	-	-	-	-	-	-	+	-	-	-
Stachys agraria	-	-	-	-	-	-	-	+	-	-	-
Stellaria media	-	-	-	-	-	-	-	+	-	-	-
Stenanthium gramineum	-	-	+	+	-	+	+	-	-	-	-
Stenotaphrum secundatum	-	-	-	-	-	-	-	+	-	-	-
Stillingia sylvatica	-	-	-	+	-	+	+	-	-	-	-
Stipa avenacea	-	-	-	-	+	+	-	-	-	-	-
Strophostyles leiosperma	-	-	-	+	-	-	+	-	-	-	-
Strophostyles umbellata	-	-	+	+	+	+	+	-	-	-	-
Stylisma aquatica	-	-	-	-	-	-	-	-	-	-	*
Stylisma humistrata	-	-	-	+	-	+	+	-	-	-	-
Stylisma patens	-	-	-	-	-	-	-	-	-	-	*
Stylisma pickeringii var. pattersonii	-	-	-	-	-	-	-	-	-	-	*
Stylisma villosa	-	-	-	-	-	-	-	-	-	-	*
Stylodon carneus	-	-	-	+	-	+	+	+	-	-	-
Stylosanthes biflora	-	-	+	+	-	+	+	-	-	-	-
Styrax americana	-	-	-	-	-	-	-	-	+	-	-
Styrax grandifolia	-	-	-	-	+	+	-	-	-	-	-
Symplocos tinctoria	-	-	-	+	+	+	+	-	-	-	-
Talinum calycinum	-	-	-	-	-	-	-	-	-	-	*
Taxodium distichum	-	+	-	-	-	-	-	-	+	-	-
Tephrosia florida	-	-	+	+	-	+	+	-	-	-	-
Tephrosia onobrychioides	-	-	+	+	-	+	+	-	-	-	-
Tephrosia virginiana	-	-	-	+	-	-	+	-	-	-	-
Tetragonotheca ludoviciana	-	-	-	-	-	-	-	-	-	-	*
Teucrium canadense	-	-	+	-	+	+	-	+	-	-	-
Thalictrum dasycarpum	-	-	-	-	+	-	-	-	-	-	-
Thelypteris hexagonoptera	-	-	-	-	+	+	-	-	-	-	-
Thelypteris kunthii	-	-	+	+	+	+	+	-	-	-	-
Tilia americana var. americana	-	-	-	-	+	+	-	-	-	-	-
Tillandsia usneoides	+	+	+	+	+	+	+	+	+	+	-
Tipularia discolor	-	-	-	-	+	+	-	-	-	-	-
Torilis arvensis	-	-	-	-	-	-	-	-	-	-	*
Toxicodendron pubescens	-	-	-	+	-	-	+	-	-	-	-
Toxicodendron radicans	+	+	+	+	+	+	+	+	+	-	-
Toxicodendron vernix	+	+	+	-	-	-	-	-	-	-	-
Trachelospermum difforme	-	-	-	-	+	-	-	-	+	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Tradescantia hirsutiflora	-	-	+	+	+	+	+	-	-	-	-
Tradescantia occidentalis	-	-	+	+	+	+	+	-	-	-	-
Tradescantia ohioensis	-	-	+	+	+	+	+	-	-	-	-
Tradescantia paludosa	-	-	+	+	+	+	+	-	-	-	-
Tradescantia reverchonii	-	-	+	+	+	+	+	-	-	-	-
Tragia betonicifolia	-	-	-	+	-	+	+	-	-	-	-
Tragia cordata	-	-	-	-	+	-	-	-	-	-	-
Tragia smallii	-	-	-	+	-	+	+	-	-	-	-
Tragia urens	-	-	-	+	-	+	+	-	-	-	-
Tragia urticifolia	-	-	-	+	-	+	+	-	-	-	-
Triadenum tubulosum	+	+	+	-	-	-	-	-	-	-	-
Triadenum virginicum	-	+	+	-	+	-	-	-	+	-	-
Triadenum walteri	-	+	+	-	+	-	-	-	+	-	-
Trichostema dichotomum	-	-	-	+	-	+	+	-	-	-	-
Trichostema setaceum	-	-	-	+	-	+	+	-	-	-	-
Tridens ambiguus	+	+	+	-	-	-	-	-	-	-	-
Tridens chapmanii	-	-	-	+	-	-	+	-	-	-	-
Tridens flavus	-	-	+	+	+	+	+	-	-	-	-
Tridens strictus	-	-	+	-	+	+	-	-	-	-	-
Trifolium campestre	-	-	-	-	-	-	-	+	-	-	-
Trifolium carolinianum	-	-	-	-	-	-	-	+	-	-	-
Trifolium dubium	-	-	-	-	-	-	-	+	-	-	-
Trifolium incarnatum	-	-	-	-	-	-	-	+	-	-	-
Trifolium lappaceum	-	-	-	-	-	-	-	+	-	-	-
Trifolium pratense	-	-	-	-	-	-	-	+	-	-	-
Trifolium repens	-	-	-	-	-	-	-	+	-	-	-
Trifolium resupinatum	-	-	-	-	-	-	-	+	-	-	-
Trifolium vesiculosum	-	-	-	-	-	-	-	+	-	-	-
Trillium gracile	-	-	-	-	+	-	-	-	-	-	-
Trillium ludovicianum	-	-	-	-	+	-	-	-	-	-	-
Triodanis biflora	-	-	-	-	+	+	-	+	-	-	-
Triodanis perfoliata	-	-	-	-	+	+	-	+	-	-	-
Triplasis purpurea	-	-	-	+	-	-	-	-	-	-	-
Tripsacum dactyloides	-	-	-	-	-	-	-	-	-	-	**
Trisetum interruptum	-	-	-	-	-	-	-	+	-	-	-
Triticum aestivum	-	-	-	-	-	-	-	+	-	-	-
Typha angustifolia	-	-	-	-	-	-	-	-	+	+	-
Typha domingensis	-	-	-	-	-	-	-	-	+	+	-
Typha latifolia	-	-	-	-	-	-	-	-	+	+	-
Ulmus alata	-	-	-	+	+	+	+	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Ulmus americana	-	-	-	-	+	+	-	-	-	-	-
Ulmus rubra	-	-	-	-	+	+	-	-	-	-	-
Utricularia cornuta	+	+	+	-	-	-	-	-	-	-	-
Utricularia foliosa	-	-	-	-	-	-	-	-	-	+	-
Utricularia gibba	-	-	-	-	-	-	-	-	-	+	-
Utricularia inflata	-	-	-	-	-	-	-	-	-	+	-
Utricularia juncea	+	+	+	-	-	-	-	-	-	-	-
Utricularia radiata	-	-	-	-	-	-	-	-	-	+	-
Utricularia subulata	+	+	+	-	-	-	-	-	-	-	-
Uvularia sessilifolia	-	-	-	-	-	-	-	-	-	-	**
Vaccinium arboreum	-	+	+	+	+	+	+	-	-	-	-
Vaccinium corymbosum	-	+	+	+	+	+	+	-	-	-	-
Vaccinium elliottii	-	+	+	+	+	+	+	-	-	-	-
Vaccinium fuscatum	+	+	+	-	-	-	-	-	-	-	-
Vaccinium stamineum	-	-	-	+	-	+	+	-	-	-	-
Vaccinium virgatum	-	+	+	+	+	+	+	-	-	-	-
Valerianella radiata	-	-	-	-	-	-	-	+	-	-	-
Verbascum thapsum	-	-	-	-	-	-	-	+	-	-	-
Verbena bonariensis	-	-	-	-	-	-	-	+	-	-	-
Verbena brasiliensis	-	-	-	-	-	-	-	+	-	-	-
Verbena halei	-	-	-	-	-	-	-	+	-	-	-
Verbena montevidensis	-	-	-	-	-	-	-	+	-	-	-
Verbena urticifolia	-	-	-	-	-	-	-	+	-	-	-
Verbena xutha	-	-	-	-	-	-	-	+	-	-	-
Verbesina alternifolia	-	-	+	+	+	+	+	-	-	-	-
Verbesina helianthoides	-	-	+	+	+	+	+	-	-	-	-
Verbesina virginica	-	-	+	+	+	+	+	-	-	-	-
Verbesina walteri	-	-	+	+	+	+	+	-	-	-	-
Vernicia fordii	-	-	-	-	-	-	-	+	-	-	-
Vernonia baldwinii	-	-	-	+	+	+	+	-	-	-	-
Vernonia gigantea	-	-	-	-	+	-	-	-	+	-	-
Vernonia missurica	-	-	+	+	-	+	+	-	-	-	-
Vernonia texana	-	-	+	+	-	+	+	-	-	-	-
Vernonia x peralta	-	-	+	+	-	+	+	-	-	-	-
Veronica arvensis	-	-	-	-	-	-	-	+	-	-	-
Veronica peregrina	-	-	-	-	-	-	-	+	-	-	-
Veronica persica	-	-	-	-	-	-	-	+	-	-	-
Vetiveria zizanioides	-	-	-	-	-	-	-	+	-	-	-
Viburnum acerifolium	-	-	-	-	+	+	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Viburnum dentatum var. dentatum	-	+	+	+	+	+	+	-	+	-	-
Viburnum dentatum var. scabrellum	-	+	+	+	+	+	+	-	+	-	-
Viburnum nudum var. cassinoides	-	+	+	-	-	-	-	-	-	-	-
Viburnum nudum var. nudum	+	+	+	-	-	-	-	-	+	-	-
Viburnum prunifolium	-	-	-	+	-	+	+	-	-	-	-
Viburnum rufidulum	-	-	-	+	-	+	+	-	-	-	-
Vicia caroliniana	-	-	-	-	-	-	-	+	-	-	-
Vicia ludoviciana	-	-	-	-	-	-	-	+	-	-	-
Vicia minutiflora	-	-	-	-	-	-	-	+	-	-	-
Vicia sativa	-	-	-	-	-	-	-	+	-	-	-
Vicia villosa	-	-	-	-	-	-	-	+	-	-	-
Vinca major	-	-	-	-	-	-	-	+	-	-	-
Viola bicolor	-	-	-	-	-	-	-	+	-	-	-
Viola esculenta	-	-	-	-	+	+	-	-	-	-	-
Viola lanceolata	-	-	-	-	+	+	-	-	+	-	-
Viola langloisii	-	-	-	-	+	+	-	-	-	-	-
Viola palmata var. palmata	-	-	-	-	+	+	-	-	-	-	-
Viola palmata var. triloba	-	-	-	-	+	+	-	-	-	-	-
Viola pedata	-	-	-	+	-	+	+	-	-	-	-
Viola pratincola	-	-	-	-	+	+	-	-	-	-	-
Viola primulifolia	-	-	+	+	+	+	+	-	+	-	-
Viola sororia	-	-	-	-	+	+	-	-	-	-	-
Viola walteri	-	-	-	-	+	+	-	-	-	-	-
Vitis aestivalis	-	-	-	-	+	+	-	-	-	-	-
Vitis cinera	-	-	-	-	+	+	-	-	-	-	-
Vitis lincecunii	-	-	-	+	-	-	+	-	-	-	-
Vitis rotundifolia	-	+	+	+	+	+	+	-	+	-	-
Vulpia myuros	-	-	-	-	-	-	-	+	-	-	-
Vulpia octoflora	-	-	-	-	-	-	-	+	-	-	-
Wahlenbergia marginata	-	-	-	-	-	-	-	+	-	-	-
Wisteria frutescens	-	-	-	-	+	+	-	-	+	-	-
Wisteria sinensis	-	-	-	-	+	+	-	-	+	-	-
Woodwardia areolata	+	+	+	-	-	-	-	-	+	-	-
Woodwardia virginica	+	+	+	-	-	-	-	-	+	-	-
Xanthium strumarium	-	-	-	-	-	-	-	+	-	-	-
Xanthorhiza simplicissima	-	+	-	-	+	-	-	-	-	-	-

Table C2. Plant Species and vegetation type(s) where found in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisiana--Continued

Species	bog	baygall	savan	sandy	riparian	mix	longleaf	dist	swamp	water	Notes
Xyris ambigua	+	+	+	-	-	-	-	-	+	-	-
Xyris baldwiniana	+	+	+	-	-	-	-	-	+	-	-
Xyris caroliniana	+	+	+	-	-	-	-	-	+	-	-
Xyris difformis											
var curtisii+	+	+	-	-	-	-	-	+	-	-	
Xyris difformis											
var difformis+	+	+	-	-	-	-	-	+	-	-	
Xyris drummondii	+	+	+	-	-	-	-	-	+	-	-
Xyris jupicai	+	+	+	-	-	-	-	-	+	-	-
Xyris laxifolia											
var. iridifolia+	+	+	-	-	-	-	-	+	-	-	
Xyris louisianica	+	+	+	-	-	-	-	-	+	-	-
Xyris platylepis	+	+	+	-	-	-	-	-	+	-	-
Xyris scabrifolia	+	+	+	-	-	-	-	-	+	-	-
Xyris stricta	+	+	+	-	-	-	-	-	-	-	-
Xyris torta	+	+	+	-	-	-	-	-	+	-	-
Youngia japonica	-	-	-	-	-	-	-	+	-	-	-
Yucca aloifolia	-	-	-	-	-	-	-	+	-	-	-
Yucca louisianensis	-	-	-	+	-	+	+	-	-	-	-
Zanthoxylum											
clava-herculis	-	-	-	-	-	-	-	-	-	-	**
Zea mays	-	-	-	-	-	-	-	+	-	-	-
Zephyranthes candida	-	-	-	-	-	-	-	+	-	-	-
Zigadenus densus	+	+	+	-	-	-	-	-	-	-	-
Zizaniopsis miliacea	-	-	-	-	-	-	-	-	+	+	-
Zizia aurea	-	-	-	-	+	+	-	-	-	-	-
Zornia bracteata	=	=	=	=	=	=	=	±	=	=	=

Table C3. Rare and Endangered Species, with State and Global Ranking, from Limited Use Area, Vernon Ranger District, Kisatchie National Forest, LA (K), or Fort Polk (F), or Vernon Parish (V)

Scientific name	STATE	GLOBAL	LOCATION
AMSONIA LUDOVICIANA	S3	G3	V
BURMANNIA BIFLORA	S2	G4G5	K
CALOPOGON BARBATUS	S1	G5?	K
CALOPOGON PALLIDUS	S1S2	G4G5	K
CAREX MICRODONTA	S2	G4	F
CAREX TENAX	S2	G5	V
CROTON ARGYRANTHEMUS	S2	G5	V
CYPERUS GRAYIOIDES	S2	G3G4	F
CYPRIPEDIUM KENTUCKIENSE	S1	G3	F
ECHINACEA PURPUREA	S1S2	G4	F
ERIOGONUM LONGIFOLIUM	S2	G4	V
GALIUM VIRGATUM	S1	G5	F
HELIOTROPIUM TENELLUM	S2	G5	F
INDIGOFERA MINIATA VAR. LEPTOSEPHALA	S1	G5	V
LACHNOCAULON DIGYNUM	S3	G3	K
MARSHALLIA TRINERVIA	S1	G3	F
OROBANCHE UNIFLORA	S1	G5	F
PANICUM FLEXILE	S1?	G4G5	F
PANICUM TENERUM	S1	G4	K
PLATANTHERA BLEPHARIGLOTTIS	S1	G4G5	F
PLATANTHERA INTEGRA	S2S3	G4	K
PRENANTHES BARBATA	S2	G2G3	V
PSILOCARYA NITENS	S2S3	G4	V
RHYNCHOSPORA MACRA	S2	G3G4	K
RHYNCHOSPORA MILIACEA	S2	G5	F
RUDBECKIA MISSOURIENSIS	S1S2	G4G5	F
RUDBECKIA SCABRIFOLIA	S2	G2	K
SABATIA MACROPHYLLA	S2S3	G4G5	K
SCUTELLARIA CARDIOPHYLLA	S2	G3G4	V
SELAGINELLA ARENICOLA	S2	G4T4	V
SILENE SUBCILIATA	S1	G3	V
TETRAGONOTHECA LUDOVICIANA	S2	G4	F
UVULARIA SESSILIFOLIA	S2	G5	F
XANTHORHIZA SIMPLICISSIMA	S1	G5	F
XYRIS DRUMMONDII	S3	G3	K
XYRIS SCABRIFOLIA	S2	G3	K
XYRIS STRICTA	S1	G3G4	K
ZIGADENUS DENSUS	S2	G5	K
ZORNIA BRACTEATA	S2	G5	V

Table C3. Rare and Endangered Species, with State and Global Ranking, from Limited Use Area, Vernon Ranger District, Kisatchie National Forest, LA (K), or Fort Polk (F), or Vernon Parish (V)--Continued

EXPLANTION OF CODES

State (Louisiana) Rankings

S1 = Critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation.

S2 = Imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation.

S3 = Rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations.

Global Rankings

G2 = Imperiled globally because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single physiographic region) or because of other factors making it vulnerable to extinction throughout its range (21 to 100 known extant populations).

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery (100-1000 known extant populations).

G5 = Demonstrably secure globally, although it may be quite rare in parts of its range, especially at the periphery (1000+ known extant populations).

Location

K = Kisatchie National Forest Limited Use Area.

F = Fort Polk.

V = Vernon Parish.

Table C4. Plant Species reported only from Riparian Vegetation in the Limited Use Area, Vernon Ranger District, Kisatchie National Forest, Louisina, including Scenic Streams (Whiskey Chitto and Sixmile Creeks)

Species

Acer barbatum
Acer saccharum
Agrostis perennans
Antennaria parlinii ssp. fallax
Apios americana
Brachyelytrum erectum
Bromus pubescens
Chasmanthium latifolium
Cynoglossum virginianum
Danthonia spicata
Desmodium nudiflorum
Desmodium pauciflorum
Dicliptera brachiata
Ilex ambigua
Listera australis
Lithospermum tuberosum
Luzula bulbosa
Luzula campestris
Luzula echinata
Malaxis unifolia
Marshallia trinervia
Prunus caroliniana
Ptelea trifoliata
Sebastiana fruticosa
Spigelia marilandica
Thalictrum dasycarpum
Tragia cordata
Trillium gracile
Trillium ludovicianum