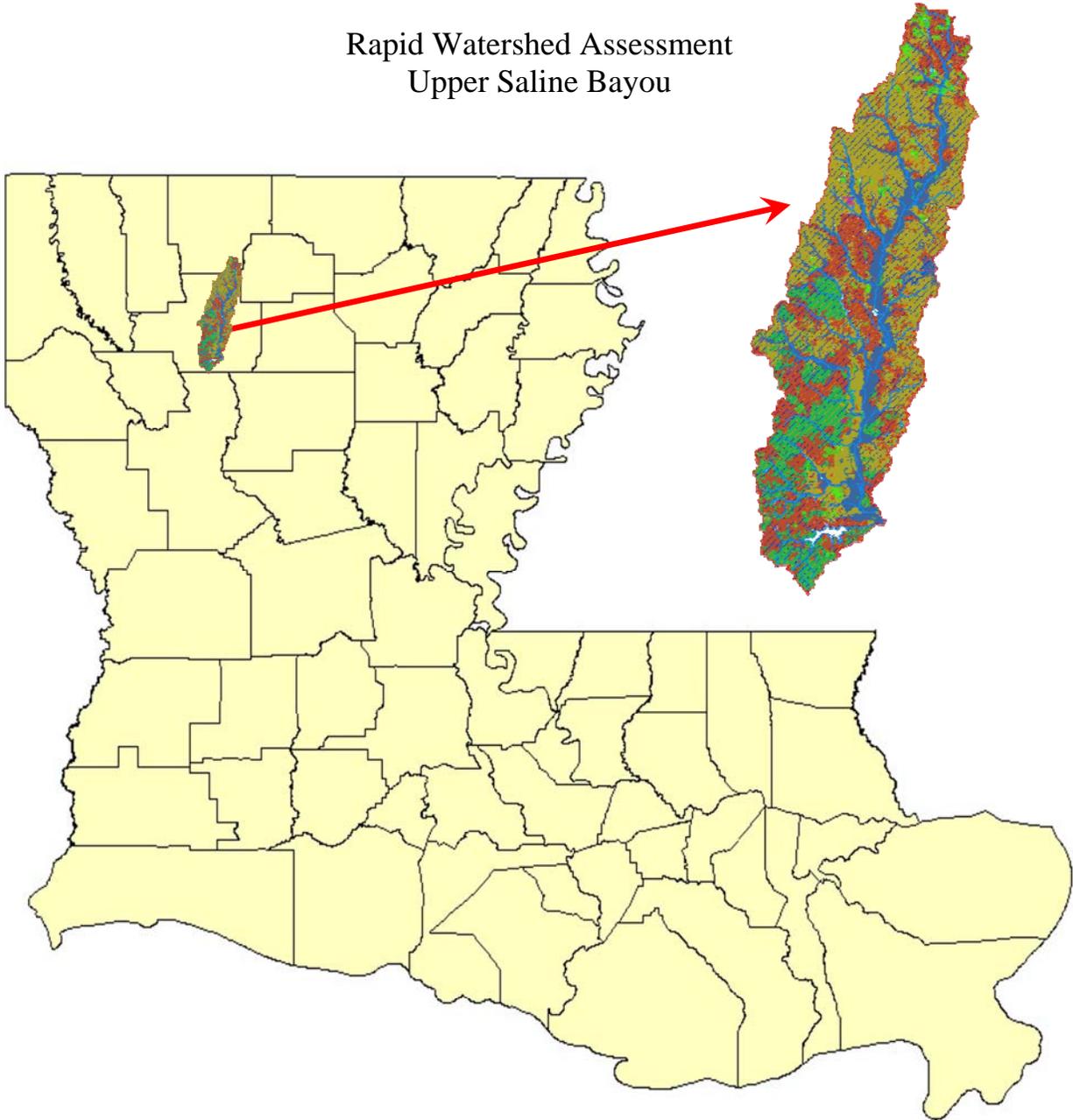




Natural Resources Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

UPPER SALINE BAYOU WATERSHED
RAPID WATERSHED ASSESSMENT
HUC: 11140208010
LOUISIANA

Rapid Watershed Assessment
Upper Saline Bayou



Rapid watershed assessments provide initial estimates of where conservation investments would best address the concerns of landowners, stakeholders, conservation districts, and other community organizations. These assessments help landowners and local leaders set priorities and determine the best actions to achieve their goals.

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Upper Saline Bayou Watershed HUC - 11140208010

Purpose

This rapid watershed assessment (RWA) organizes resource information into one document that local conservationists, units of government, and others can use to identify existing resource conditions and conservation opportunities. This will enable the user to direct technical and financial resources to the local needs in the watershed. This RWA provides a brief description of the Upper Saline Bayou Watershed's natural resources, resource concerns, conservation needs, and ability to resolve natural resource issues and concerns.

Introduction

The Upper Saline Bayou Eleven - Digit Hydrologic Unit Code (HUC) 11140208010 sub-basin is comprised of 134,000 acres in northwest Louisiana.

Physical Description

This area is in the West Gulf Coastal Plain Section of the Coastal Plain Province of the Atlantic Plain. It consists of level to steep uplands that are intricately dissected by streams. Broad flood plains and terraces are along some streams. Elevations range from 80 to 525 feet increasing gradually from southeast to northwest.

Soils

For the purpose of this assessment the soils will be categorized by series. Series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition and arrangement in a soil profile.

The common soil series found in this watershed are Ruston, Malbis, Wrightsville, Calhoun, Grenada, Gilbert, Frizzell, Bussy, Moreland, Latanier, Roxanna, Caspiana, Severn, and Gallion.

Biology

This area supports pine-hardwood vegetation. The dominant trees are loblolly pine, shortleaf pine, sweetgum, southern red oak, white oak, flowering dogwood, and post oak. American beautyberry, greenbrier, hawthorns, and berry vines are included in the woody understory. Little bluestem and pinhole bluestem are the dominant herbaceous species. Other major grasses include beaked panicum, longleaf uniola, spike uniola, and yellow Indiangrass. The plant community has many species of low-growing panicums and paspalums and perennial forbs.

The major wildlife species in this area include white-tailed deer, coyote, beaver, raccoon, skunk, opossum, muskrat, mink, cottontail, squirrel, weasel, armadillo, and mourning dove.

Climate

The average annual precipitation in the watershed is 39 to 63 inches. Most of the rainfall occurs as frontal storms in spring and early summer. High-intensity, convective thunderstorms occur in late summer and in fall along with some heavy rains occurring during the winter months. The average annual temperature is 61 to 68 degrees Fahrenheit. The freeze-free period averages 270 days.

Land Use

The dominate land cover and land use in the watershed include forestland, pine plantation, pasture, truck crops, hayland and some urban concentrations. (See Figure 1) For natural vegetation in the relatively flat to undulating terraces, areas of the watershed, a high diversity of natural communities, include oak-hickory forests; shortleaf pine-oak-hickory forest, hardwood flatwoods and calcareous forest and prairies with many rare plant species: bald cypress, and water tupelo in wetter sites.

For the broad, level to nearly level floodplain and low terraces, areas of the watershed include natural vegetation that consists of bottomland, including oaks (willows, overcup, water, cherrybark, Nuttall, swamp chestnut), sweetgum, blackgum, American elm, red maple, green ash, honey locust, water locust, bald cypress, and water tupelo.

Legend

	Water
	Urban/Developed
	Barren
	Forest
	Scrub
	Crops
	Marsh

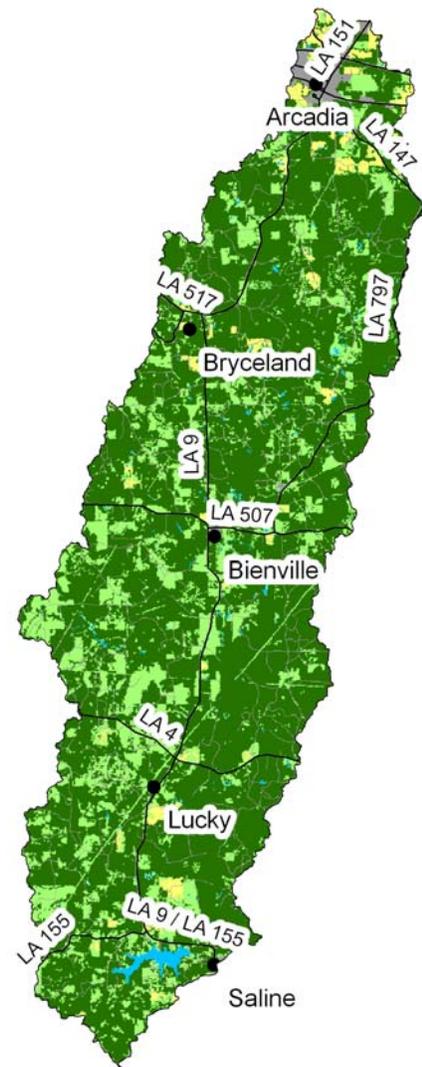


Figure 1: Land Use

Ecoregions

Ecoregions are regions with similar ecological characteristics. Ecoregions are delineated based on characteristics such as climate, land surface form, soils, vegetation, land use and hydrographic modifications (levee systems) to form management units with similar biological, chemical and physical features (Omernik, 1987). A Roman numeral hierarchial scheme has been adopted for different levels of ecological regions. The Upper Saline Bayou Watershed is situated in the South Central Plains ecoregion. For the purpose of this assessment, Level IV designation will be used which consist of the Pleistocene Fluvial Terraces and the Red River Bottomlands located in northwestern Louisiana. The Pleistocene Fluvial Terraces are characterized as relatively flat to undulating terraces with increasing dissection and relief with age. The Red River Bottomlands are broad, level to nearly level floodplain and low terraces with oxbow lakes, meander scars, backswamps, natural and artificial levees and drainage ditches.

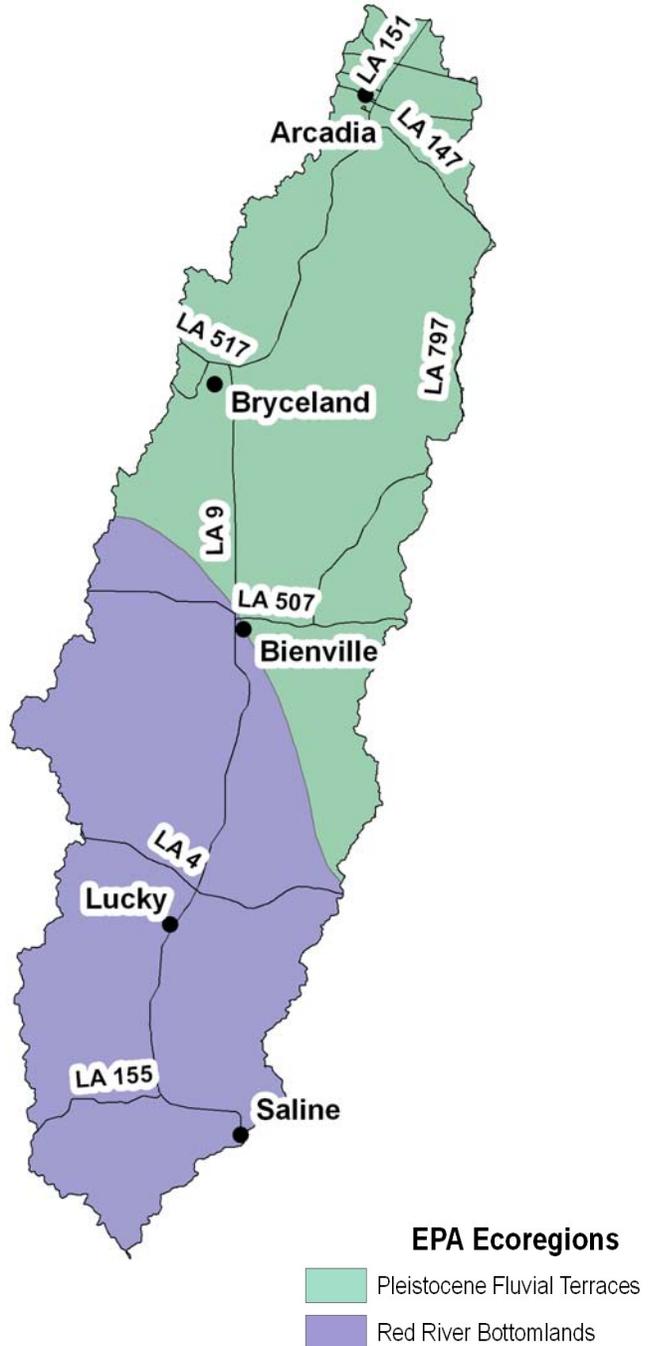


Figure 2: Ecoregions

Gaging Stations

Gaging stations are facilities used by hydrologists to automatically monitor streams, wells, canals, reservoirs and or other water bodies. Instruments at these stations collect information on water height, discharge, water chemistry and water temperature. These stations collect information about the stream and transmit it to the USGS via a satellite communications system. The data is then processed and delivered to the public via the internet. The USGS gaging station in the Upper Saline Bayou Watershed is identified as station number 07352000 and is located in the Saline Bayou near Lucky, Louisiana. The drainage area for this gage is 154 square miles.

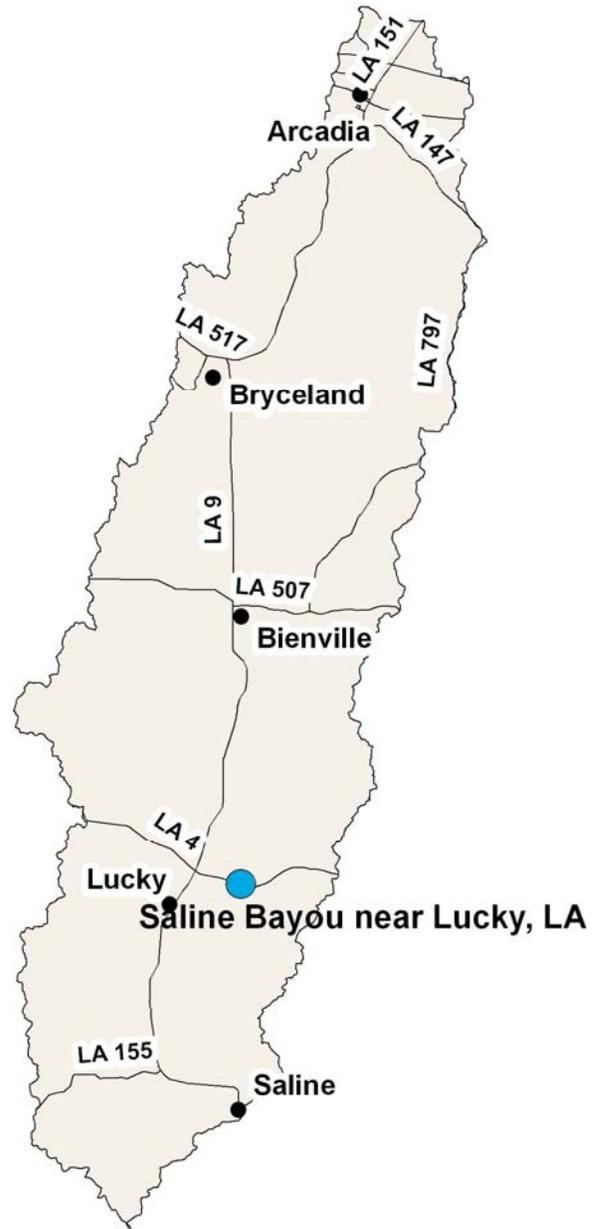
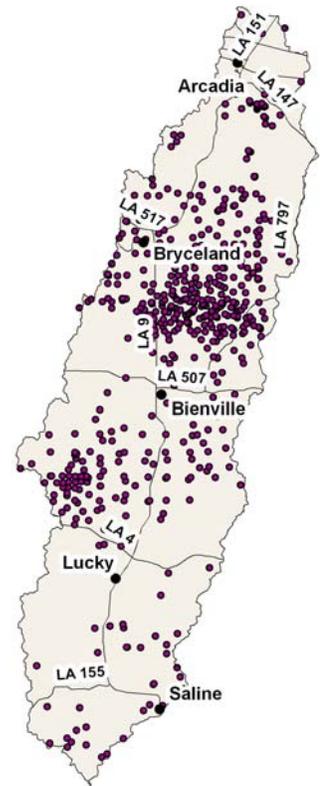


Figure 3: Gaging Stations

Gas and Oil Wells

Louisiana ranks fourth in the nation in crude oil production behind Texas, Alaska, and California (excluding Federal offshore areas, which produces more than any single state). Louisiana ranks second in the nation in natural gas production. Driven by the industrial and electricity generation sectors, Louisiana's natural gas consumption is high, ranking third among all states. Nearly one-half of Louisiana households use natural gas as their primary energy source for home heating. Within Bienville Parish, of which Upper Saline Bayou Watershed is a part of, there were over 9,400 oil and gas wells producing an excess of 311,000 barrels of oil and 82,000,000 million cubic feet of gas during the January 2007 – December 2007 time period.



Gas Pipeline

The pipeline industry is a vital part of the oil and gas industry in Louisiana. Louisiana has an extensive pipeline network. Pipelines transport crude oil and natural gas from the wellhead to the processing plants and refineries. Pipelines transport natural gas from producing states such as Louisiana to utility companies, chemical companies and other users throughout the nation. Pipelines are also used to transport chemical products. There is an estimated 25,000 miles of pipe moving natural gas through interstate pipelines. There are 7,600 miles of pipe that carry natural gas through intrastate pipelines to users within the state's boundaries while another 3,450 miles of pipelines in Louisiana transport crude oil and crude oil products. The pipeline industry employs 4,855 persons in Louisiana with an annual payroll of more than \$250 million. Some of the pipeline companies crossing through the watershed include Southern Natural Gas, Bear Creek Storage, Southern Natural Gas/Bear Creek, and Southern Natural Gas/Bienville.

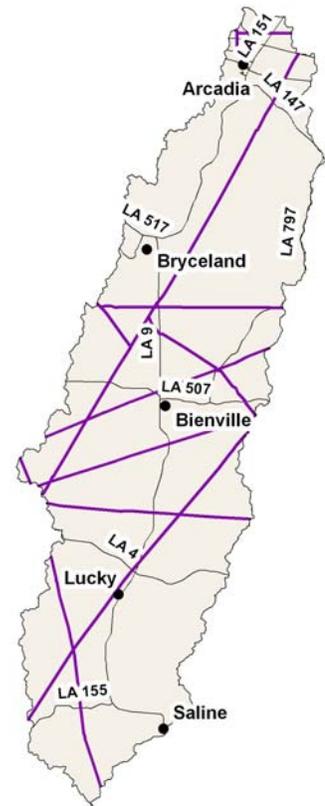


Figure 4: Gas Pipelines and Oil Wells

Income

The income reflected on the map and the map legend is the average income dollars per family per census block group.

Legend

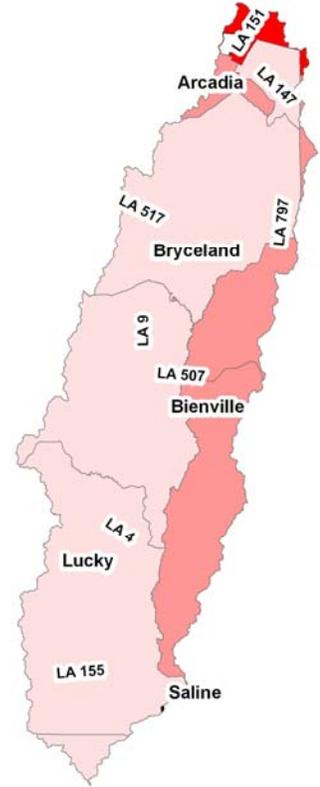
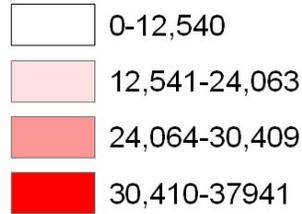


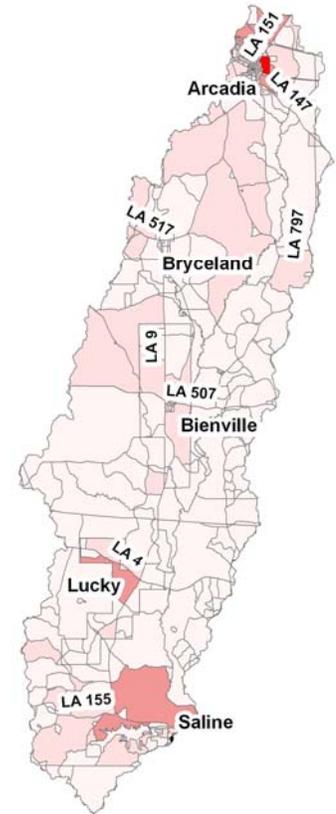
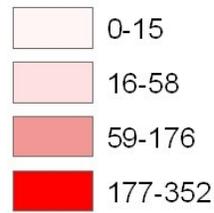
Figure 5: Income and Demographics

Demographics

The population map and legend reflects the number of people per census block in the watershed area. Each polygon on the map is a census block.

Population Density

Legend



State Political Area

The Louisiana House of Representatives is the lower chamber in the Louisiana State Legislature. The House is composed of 105 Representatives, each of whom represents approximately 42,500 people.



Figure 6: Political Area

Towns and Villages in the Watershed

Arcadia

The town of Arcadia is the parish seat of Bienville Parish. According to the Applied Geographic Solutions Report, Arcadia had a 2006 population of 3,730 with 38.7% of the population being White, 59.7% Black, 0.2% American Indian, 0.3% Asian, 0.2% other, 0.8% multi-race, and 2.4% Hispanic. The median income for a household in Arcadia was \$21,661, and the median income for a family was \$26,250. The major employer is House of Raeford with 627 employees.

Bryceland

Bryceland is a village which has a population of 114 according to the 2000 census. The racial makeup of Bryceland is 82.46% White and 17.54% Black. The median income for a household in the village was \$26,750, and the median income for a family was \$33,700.

Bienville

Bienville is a village which has a population of 262 according to the 2000 census. The racial makeup of Bienville was 56.94% White, 43.13% Black, and 0.38% from two or more races. The median income for a household in the village was \$20,227, and the median income for a family was \$20,909.

Lucky

Lucky is a village which has a population of 355 according to the 2000 census. The median income for a household in Lucky was \$15,625, and the median income for a family was \$17,500.

Saline

Saline is a village which has a population of 296 according to the 2000 census. The median income for a household in Saline was \$26,500, and the median income for a family was \$31,250.



Figure 7: Towns and Villages in Upper Saline Bayou

Threatened and Endangered Species Status

The Endangered Species Act provides protection to animals that are experiencing a decline in population, or nearing extinction. The table below lists the species of concern and their designation.

Table 1: Threatened and Endangered Species

<u>Watershed</u>	<u>Threatened and Endangered Species</u>	<u>Status</u>	<u>Critical Habitat</u>
Upper Saline Bayou	Louisiana Pine Snake (<i>Pituophis ruthveni</i>)	Candidate Species	No

The Louisiana pine snake (*Pituophis ruthveni*) is a candidate species for federal listing as a threatened or endangered species, and historically occurred in portions of west central Louisiana and extreme east-central Texas. Candidate species are those which the U.S. Fish & Wildlife Service (USFWS) has on file sufficient information regarding biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions. According to USFWS data, in Louisiana, the pine snake is known to occur in Bienville, Sabine, Natchitoches, and Vernon Parishes. Pine snakes inhabit areas of longleaf pine with sandy, well-drained soils, substantial herbaceous ground cover, and little midstory (e.g., longleaf pine savannah).

The pine snake is highly associated with the pocket gopher (*Geomys-breviceps*), a major food source, which is dependent on the same habitat type. Pinesnakes are most frequently found near pocket gopher burrow systems and move from one burrow system to another. Threats to this species include the sharp decline in quality and quantity of longleaf pine habitat due to logging, suppression of fire, and short-rotation silviculture, as well as vehicle-related mortality on roads and off-road trails. Although the proposed project would be located within an area that may be inhabited by the Louisiana pine snake, there is currently no requirement under the Endangered Species Act for consultation regarding project impacts on that species. In the interest of conserving the Louisiana pine snake, we encourage you to avoid project activities that would adversely affect that species or its habitat. Should it be federally listed as threatened or endangered in the future, however, further consultation on possible project impacts to that species could then be required.

Water Quality Conditions

The Louisiana Department of Environmental Quality (LDEQ) is responsible for monitoring water quality conditions in the state of Louisiana. LDEQ data shows that about 77 percent of the water bodies in the state fail to meet at least one, and sometimes more, of their intended uses. As of 2004, 318 water body sub-segments did not meet the state's "fishable" use and 111 sub-segments did not meet the state's "swimmable" use. The LDEQ subsegment designated numbers for this watershed are 100801 and 100804.

Designated Uses

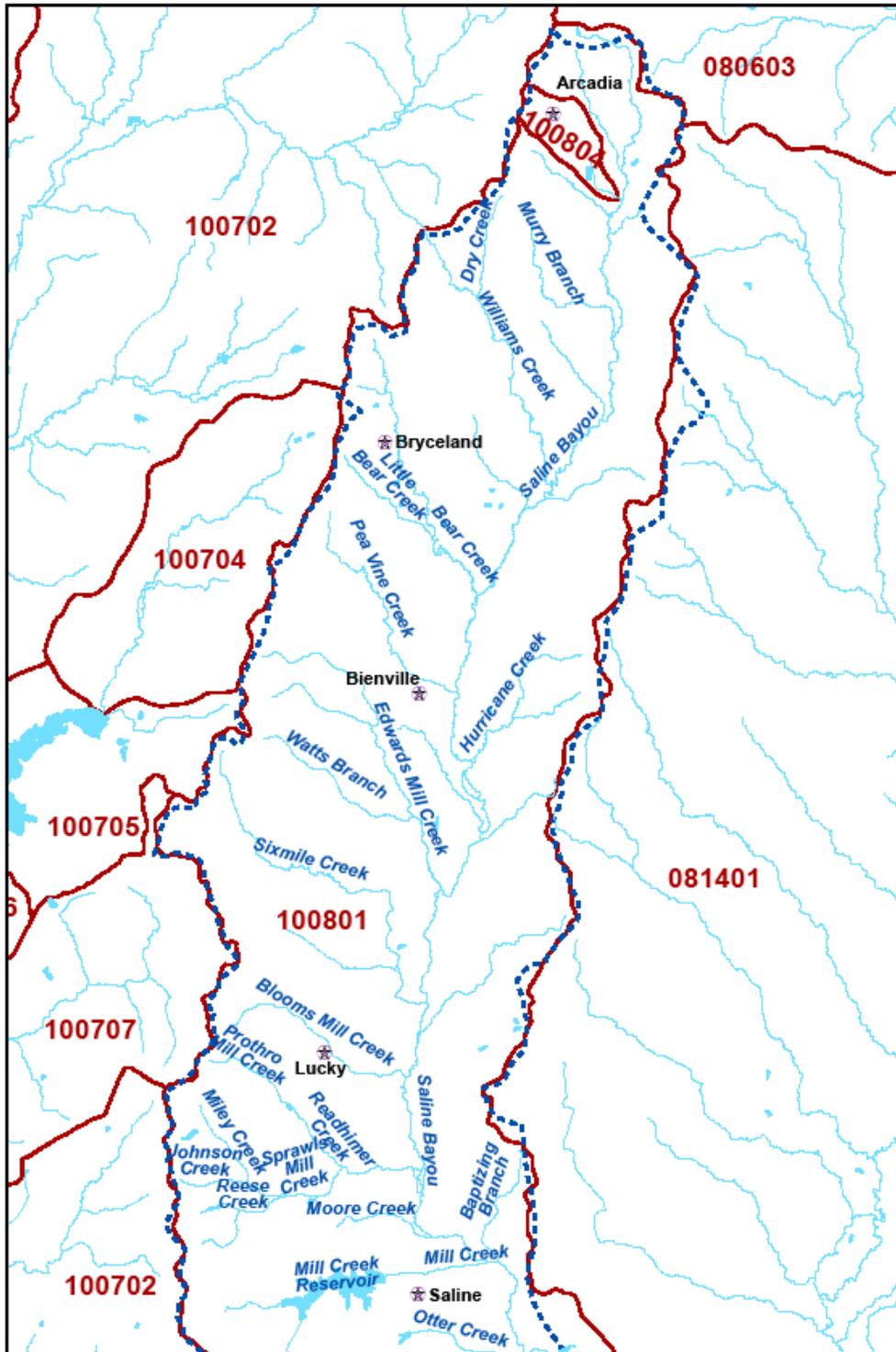
Saline bayou flows for 54 miles from its origin near the Town of Arcadia in Bienville Parish southward as indicated on the map on page 12. It defines the border of Natchitoches and Winn Parishes ending at Louisiana Highway 156. There is a water quality monitoring station at Saline Bayou East of Bienville, Louisiana. According to LDEQ, the designated uses for streams and rivers in this watershed include: Primary Contact Recreation (PCR) - Swimming, Secondary Contact Recreation (SCR), Fish and Wildlife Propagation (FWP) – Fishing, Drinking Water Supply (DWS), Outstanding Natural Resource (ONR), Oyster Propagation (OYS), Agricultural Use (AGR), and Limited Aquatic and Wildlife (LAL). The table on page 13 lists the stream subsegments within the watershed including all the ambient parameters such as organics, pesticides, metals, etc., for all WQN sites for the past five years. Data indicates this stream has an overall rating of partially supporting for water uses. For fish and wildlife propagation the stream is supportive. The suspected causes of impairment can be found on the table as well.

Total Maximum Daily Loads

A Total Maximum Daily Load (TMDL) is a pollution budget for a specific water body (river, lake, stream, etc.) It is the maximum amount of a pollutant (sum of allowable pollutant loads from point and nonpoint sources) that can be released into a water body without causing the water body to become impaired and or violate state water quality standards. Louisiana must establish TMDLs for all water bodies in the state according to the priority and schedule of the 303(d) list. Within the watershed, a Saline tributary designated as subsegment 100804, as depicted in the map below, had a deadline of 2007 to develop TMDLs. This Saline tributary TMDL had a high priority designation which relates to the magnitude of the impairment relative to applicable water quality standards.

Figure 8: Upper Saline Watershed Boundary

Upper Saline Bayou Watershed Boundary Map



Louisiana Department of Environmental Quality
Water Quality Assessment Division
Standards, Assessment and Nonpoint
Map No. 200702025, November 5, 2007
Base Map: 1:100k DLG
Projection: UTM Zone 15, NAD 83



The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of accuracy. Therefore LDEQ cannot guarantee the accuracy of this map or data set, and does not accept responsibility for the consequences of its use. If the map is altered, LDEQ cannot guarantee its accuracy.

Table 2: Upper Saline Water Quality Conditions

F = Fully supporting their designated use

N = Not supporting their designated use

		PCR	SCR	FWP	DWS	ONR	OYS	AGR	LAL	Impaired Use for Suspected Cause	Suspected Causes of Impairment	IR Category for Suspected Causes	TMDL Due Date	TMDL Priority	Suspected Sources of Impairment
Upper Saline Rapid Watershed Assessment															
100801	Saline Bayou	F	F	N		F		F		FWP	Nitrate/Nitrite (Nitrite + Nitrate as N)	IRC 4c	N/A		Natural Conditions - Water Quality Standards Use Attainability Analyses Needed
		F	F	N		F		F		FWP	Oxygen, Dissolved	IRC 4c	N/A		Natural Conditions - Water Quality Standards Use Attainability Analyses Needed
		F	F	N		F		F		FWP	Phosphorus (Total)	IRC 4c	N/A		Natural Conditions - Water Quality Standards Use Attainability Analyses Needed
100804	Saline Bayou tributary		F	N						FWP	Sulfates	IRC 5	2007	H	Municipal Point Source Discharges
			F	N						FWP	Total Dissolved Solids	IRC 5	2007	H	Municipal Point Source Discharges

Resource Concerns

Resource concerns are issues related to the natural environment. Natural resources include soil, water, air, plants, animals, and humans. A public meeting was held in the watershed to obtain input on the resource concerns from the general public. Some of those resource concerns are found below. The remainder of the concerns can be found in Appendix A.

Water

- **Water Availability/Supply** – A concern by many of the constituents in the project area is the dwindling freshwater supply and the declining and threatened Sparta Aquifer. The falling water levels of the Sparta Aquifer threaten disastrous consequences for 30,000 people in a two parish region. Recent data compiled by the U.S. Geological Survey states that most areas of the Sparta are dropping at the rate of about two feet per year. Competition for water in the Sparta Aquifer from both public and industrial entities is increasing while the quantity and the quality of the aquifer is decreasing. Alternative sources of potable water are needed in the project area to alleviate the excessive usage of the Sparta groundwater.
- **Sewerage Treatment** – There are homes in the watershed with inadequate secondary sewer treatment. Many of these homes discharge directly into a public ditch with no secondary treatment of sewage. A failing septic system can discharge more than 75,000 gallons of untreated wastewater into ground and surface waters each year.

Animals

- Louisiana serves as a permanent or temporary home to over 900 species of vertebrate animals and an unknown number of invertebrates. Through the Comprehensive Wildlife Conservation Strategy (CWCS), there has been 240 species identified as a concern and warrant specific conservation attention.
- Residents in the watershed are concerned about infestation of wild hogs and beaver problems in the area. Wild hogs can damage levees, wildlife habitat, ruin private food plots for deer and turkey and contaminate farm ponds and livestock watering holes. They also carry diseases that can affect wildlife, pets, livestock and people. Nationwide the wild hog population is estimated at more than 4 million and growing.

Plants

- Kudzu was introduced for erosion control in Southern landscapes that had been denuded as a result of railroad expansion in the late 19th century. Now kudzu engulfs almost anything in its vicinity, growing as much as a foot a day under the right conditions. The southeastern US has near-perfect conditions for kudzu to grow out of control – hot, humid summers, frequent rainfall, temperate winters with few hard freezes and no natural predators. Kudzu has been found as far northeast as Paterson, New Jersey and as far south as Key West, Florida. Kudzu has naturalized into about 20,000 to 30,000 square kilometers of land in the United States and costs around \$500 million annually in lost cropland and control costs.
- Invasive plant species is a concern for residents in the project area. In Louisiana the top two invasive plants are Chinese privet, also so know as ligustrum , and Chinese tallow

tree, often called popcorn or chicken trees. Chinese privet is particularly bad in forest service corridors for power lines, pipelines and access roads. Chinese privet is the worst forest invader.

- The Chinese tallow tree can transform woodland ecology, change the hydrology and even affect the microclimate where they grow.

Humans

- The human factor is a part of NRCS's resource concerns as well. Residents in the watershed expressed numerous human related concerns. One concern in particular related to the labor force in the watershed. There are employment opportunities in the project area, but there is a lack of a skilled and educated labor force. Additionally drug use impacts the labor pool as well.
- Economic Development is a concern in the watershed. Bienville Parish community leaders have been meeting to look at the strengths, weaknesses, and opportunities for tourism in the parish. LSU AgCenter is providing assistance with two programs – “first Impressions” and “Customer Relations.”

Estimated Soil Loss

Soil loss through wind and water erosion is critical to consider in dealing with air and water quality issues. As airborne particulate, soil particles are a major contributor to air quality concerns. Soil loss through water erosion causes water quality impairments, as pollutants are attached to soil colloids and are transported into the stream systems. Erosion by water has been identified as a concern in this watershed.

- Controlling erosion not only sustains the long-term productivity of the land, but it also affects the amount of soil, pesticides, fertilizer, and other substances that move into the nation's waters.
- Through NRCS programs, many farmers and ranchers have applied conservation practices to reduce the effects of erosion by water.

Aquifers

Within the Upper Saline Bayou Watershed lies the Sparta Aquifer. The Sparta Aquifer is an important source of groundwater for southeastern Arkansas and northern Louisiana. The Sparta is recharged through direct infiltration of rainfall, the movement of water through overlying terrace and alluvial deposits, and leakage from the Cockfield and Carrizo-Wilcox Aquifer. The recharge of the Sparta Aquifer is 53 million gallons per day, but 70.7 million gallons per day are being withdrawn which means that about 17-18 million gallons per day used is ancient groundwater according to an Engineering Consulting firm. Based on information compiled by the United States Geological Survey (USGS), most of the Sparta Aquifer is dropping at the rate of about two feet per year. With the decline in water quantity of the Sparta Aquifer, water quality is also an issue. Salt-water is likely the largest issue facing consumers of the Sparta Aquifer. The falling water levels of the Sparta Aquifer threaten disastrous consequences for 30,000 people in a two-parish region if ineffective conservation measures continue. Alternative sources of potable water are needed in the project area to alleviate the excessive usage of the Sparta Groundwater.

Legend

	ALLUVIAL
	CARRIZO-WILCOX
	CHICOT/TERRACES
	COCKFIELD
	SPARTA
	no recharge

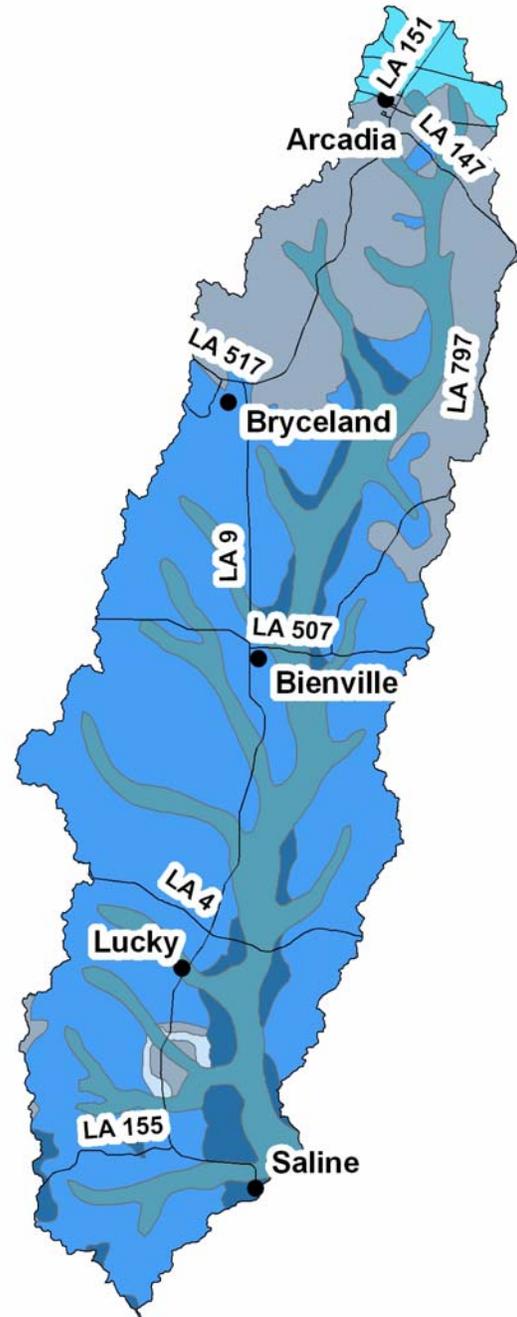
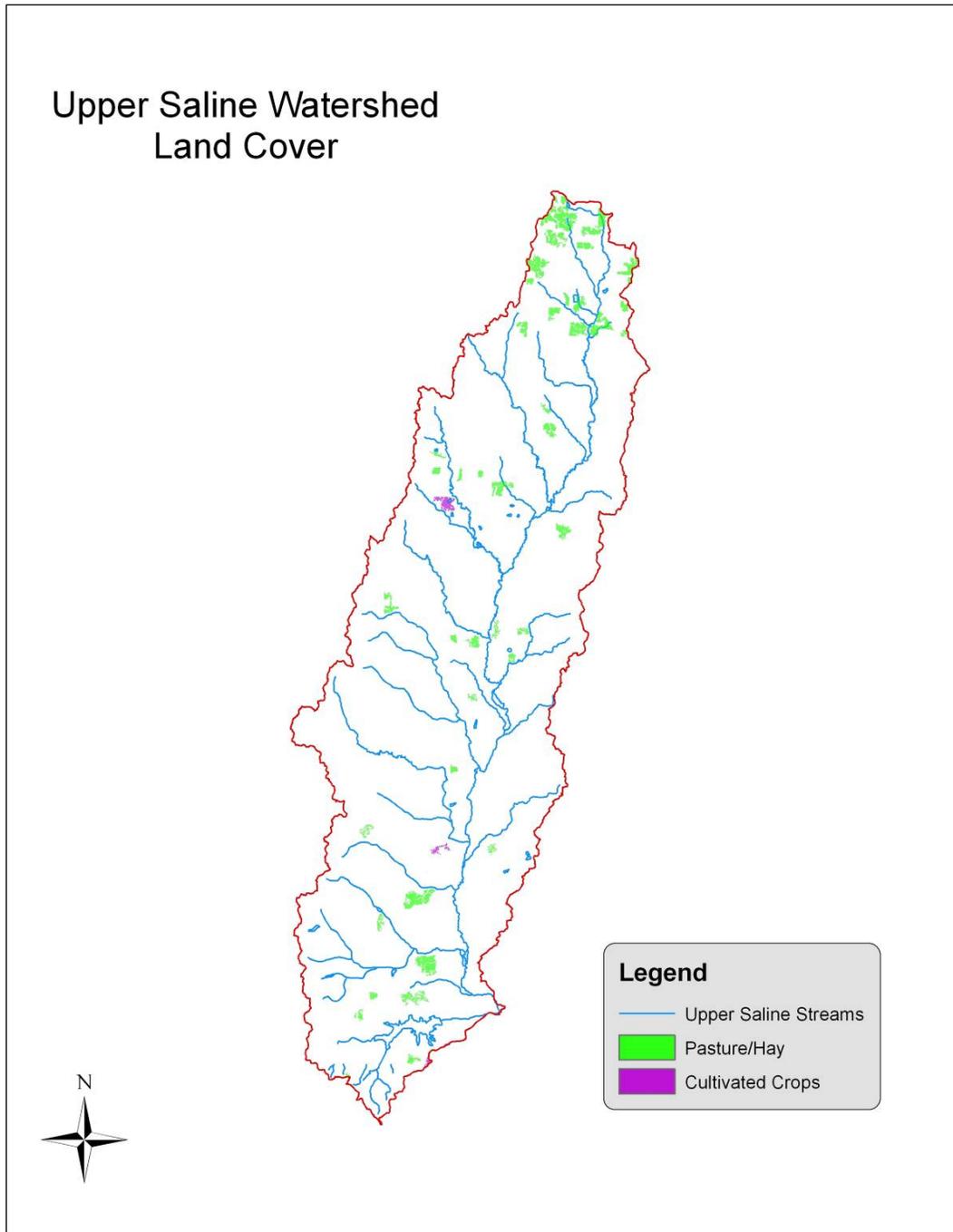


Figure 9: Aquifer designations

Land Cover Map

One of the resource concerns identified by stakeholders was organic enrichment of surface waters. The goal of the risk matrix analysis was to identify areas of risk related to movement of sediment and nutrients. Poultry production facilities were of particular concern related to nutrients. The cultural and resource characteristics identified by local NRCS planning specialists to be considered during the risk assessment included: land cover, land slopes, soil hydrologic groups, and stream proximity. The land use distribution is depicted in the following map.

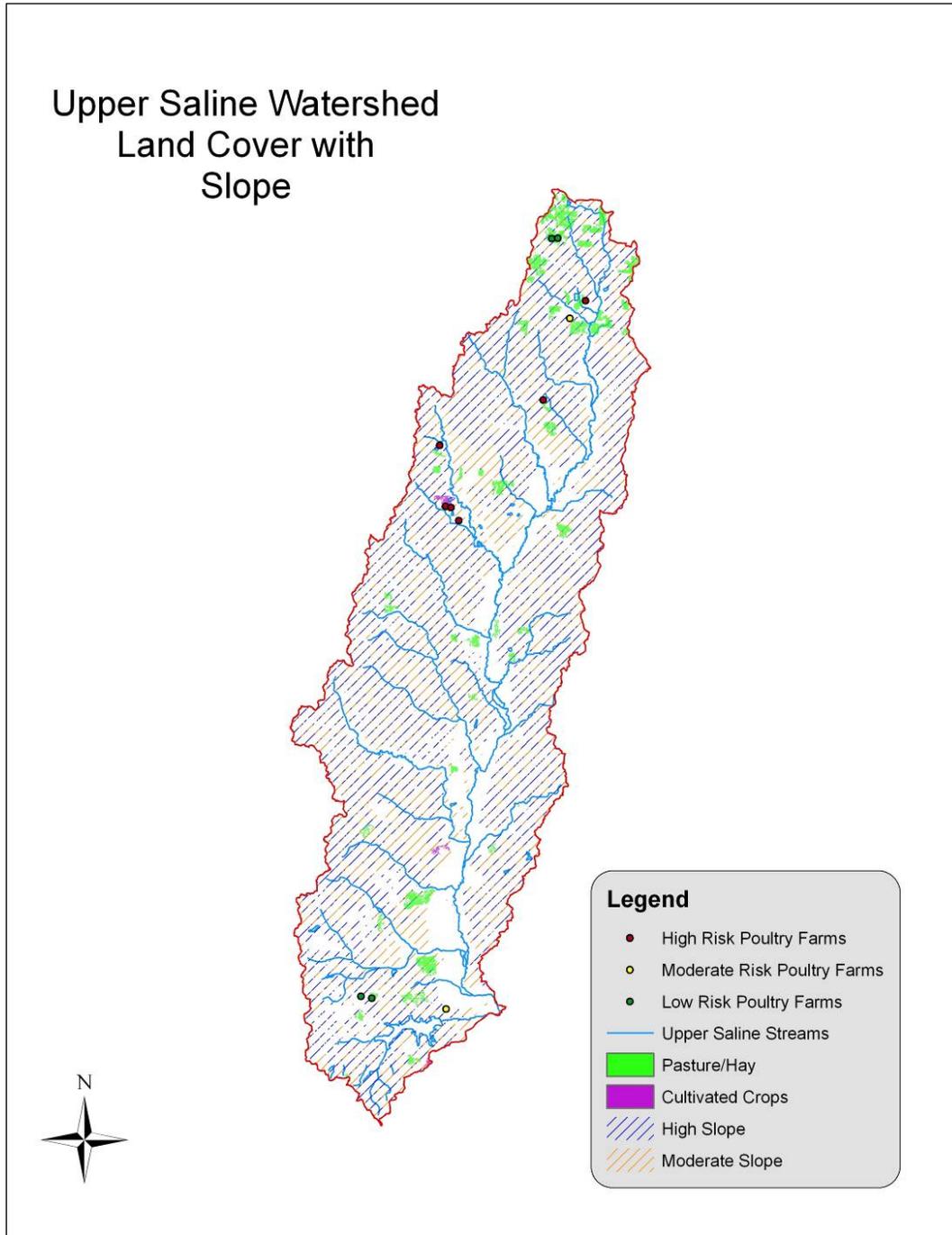
Figure 10: Land Use Distribution



Slope Distribution

This map provides a look at the land slope distribution. Slope affects the velocity of runoff therefore the erosion rates which are likely to occur. It is apparent from the map that steep slopes exist near streams in areas. These steep slopes define the areas where high erosion and runoff is likely to occur.

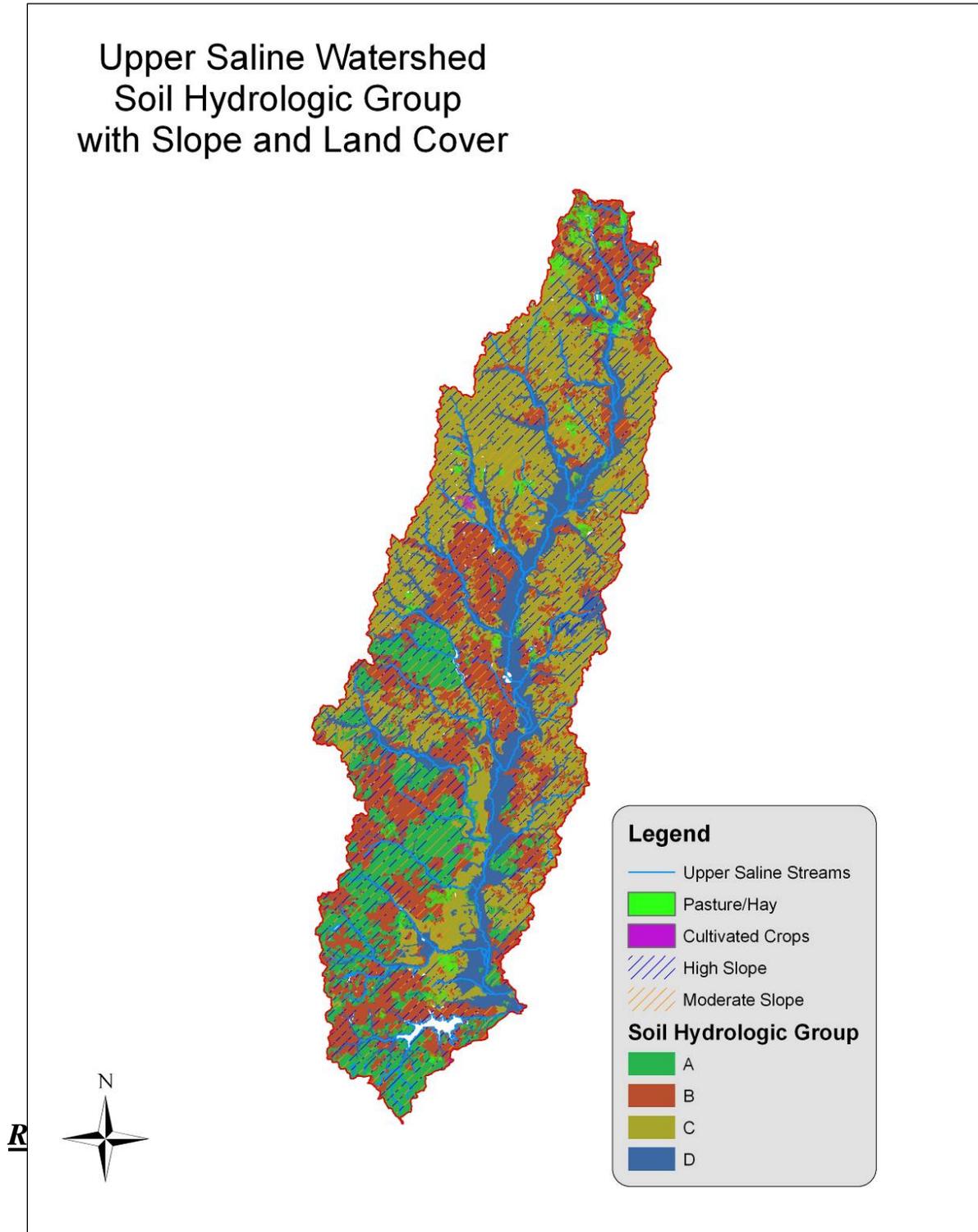
Figure 11: Land Cover and Slope



Soil Hydrologic Group Distribution

This map presents the soil hydrologic group distribution. The soils hydrologic functions significantly affect runoff. Both the “C” & “D” hydrologic groups are known to produce high amounts of runoff during rain events.

Figure 12: Soil Hydrologic Groups



Stream Proximity Factors

As shown in Figure 13, the stream proximity risk factor was used to determine the risk related to poultry operations. The closer a potential contributing area is to a stream, the higher the risk for sediment and other pollutant loading. These risk matrix factors were rated individually and cumulatively to define the overall risk of erosion and nutrient loading to streams. When this matrix is applied using GIS technology, varying levels of risk become apparent.

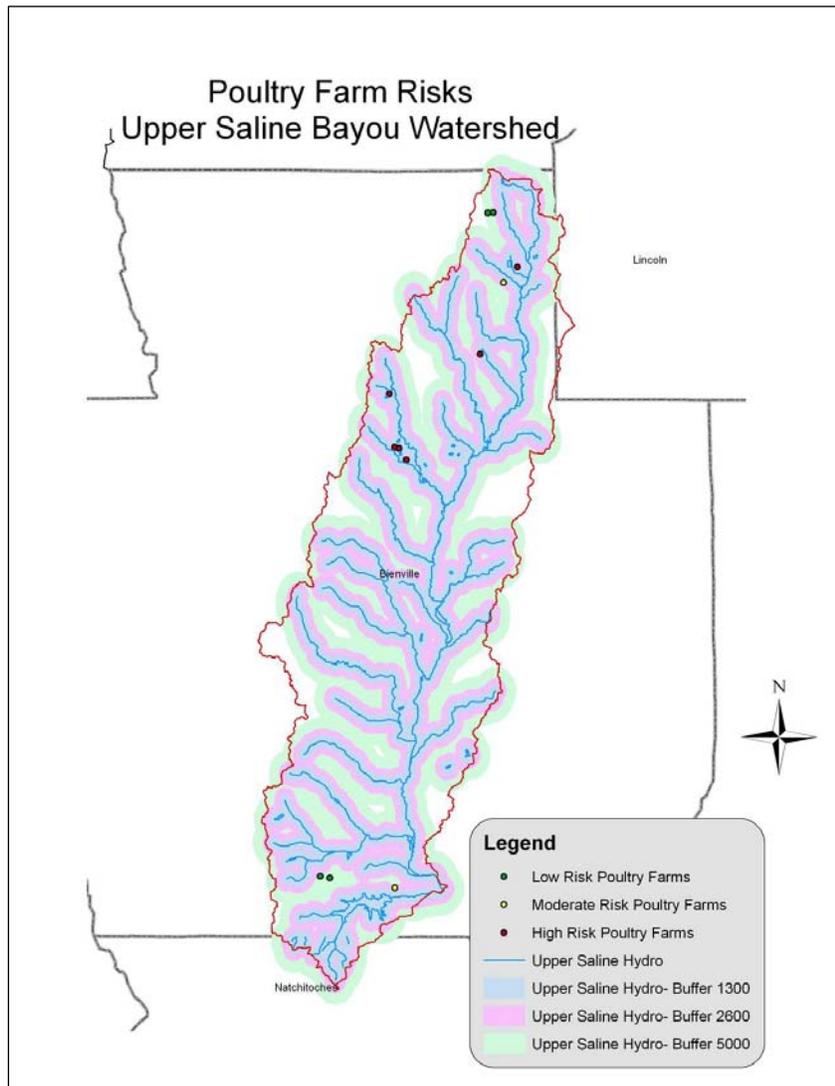


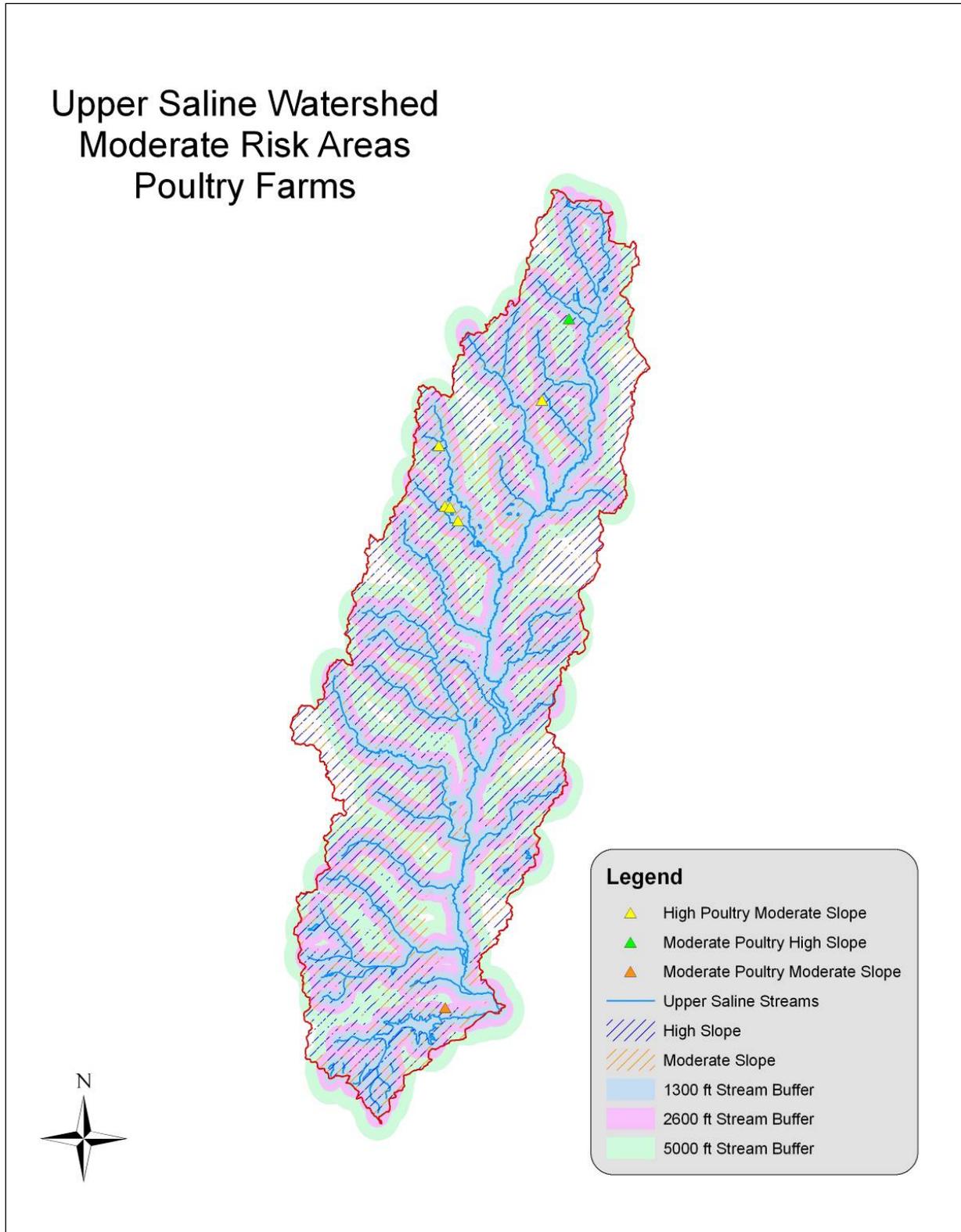
Figure 13: Poultry Farm Risks based on Stream Proximity

Table 3: Risk Matrix Factors

RISK	LOW	MODERATE	HIGH
Cropland	Not Present – 1		Present - 3
Stream Proximity	5000 ft.	2600 ft.	1300 ft.
Soil Hydrologic Group	Low – A(1)	Medium – B(2)	High – C&D(3)
Slope	0-2%	2-5% (Moderate)	5-10% (Steep)

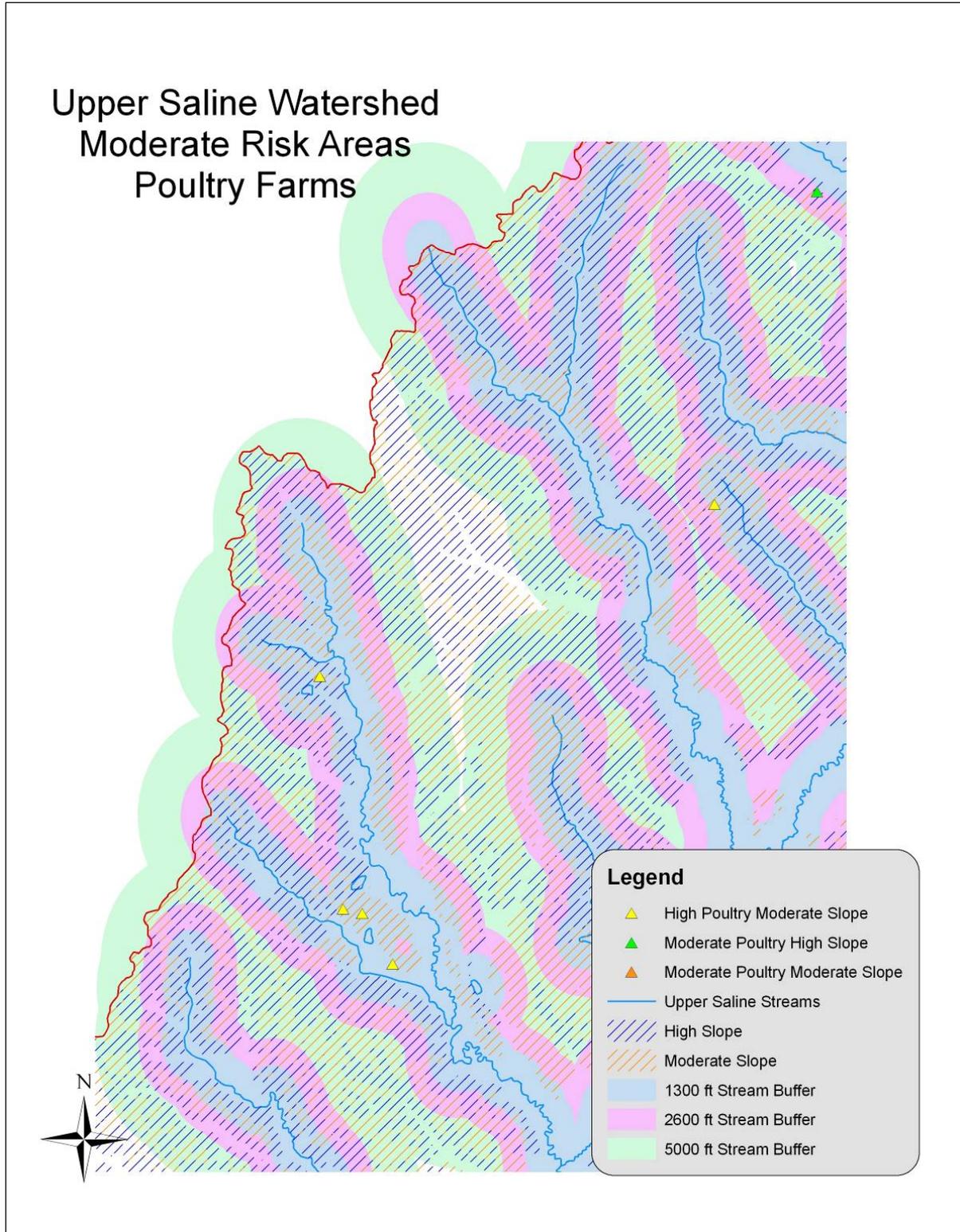
This map shows the risk levels associated with poultry operations in the area incorporating both the stream proximity and slope factors.

Figure 14: Moderate Risk Poultry Farms



A closer look at a portion of the map below reveals why certain operations have a moderate potential risk of creating a negative environmental effect. Even though the operations are within the highly sensitive zone (blue), the land slopes are not steep therefore the risk is considered moderate.

Figure 15: Moderate Risk Poultry Farm Areas



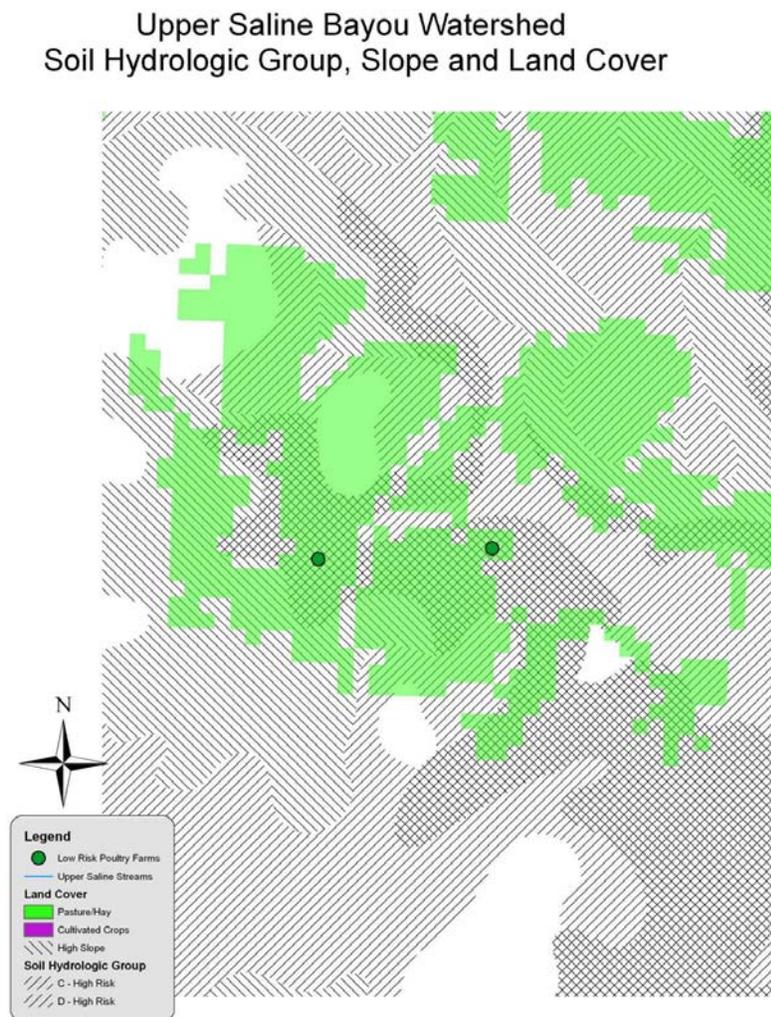
Risk Rankings

Two risk rankings are presented in the following map. The first risk ranking is limited to the poultry operation sites. Two low risk poultry operations are identified by green dots on the map. The risk matrix factor that makes these operations a low risk is the “stream proximity” factor. Because there is not a surface water body to receive and transport nutrients close by, there is little opportunity for water body impairment.

The cross hatched areas point out areas where two high risk matrix factors related to soil resource protection coincide with each other. From the soil resource protection perspective these sites have an overall rating of moderate. This considers the fact that the land cover is pasture/hay which is a moderate risk factor. These sites have steep slopes and the soil hydrologic group is either “C” or “D” which are both high risk factors when considering erosion.

If the pasture/hay was converted to cropland a high risk area with respect to the soil resource would be created.

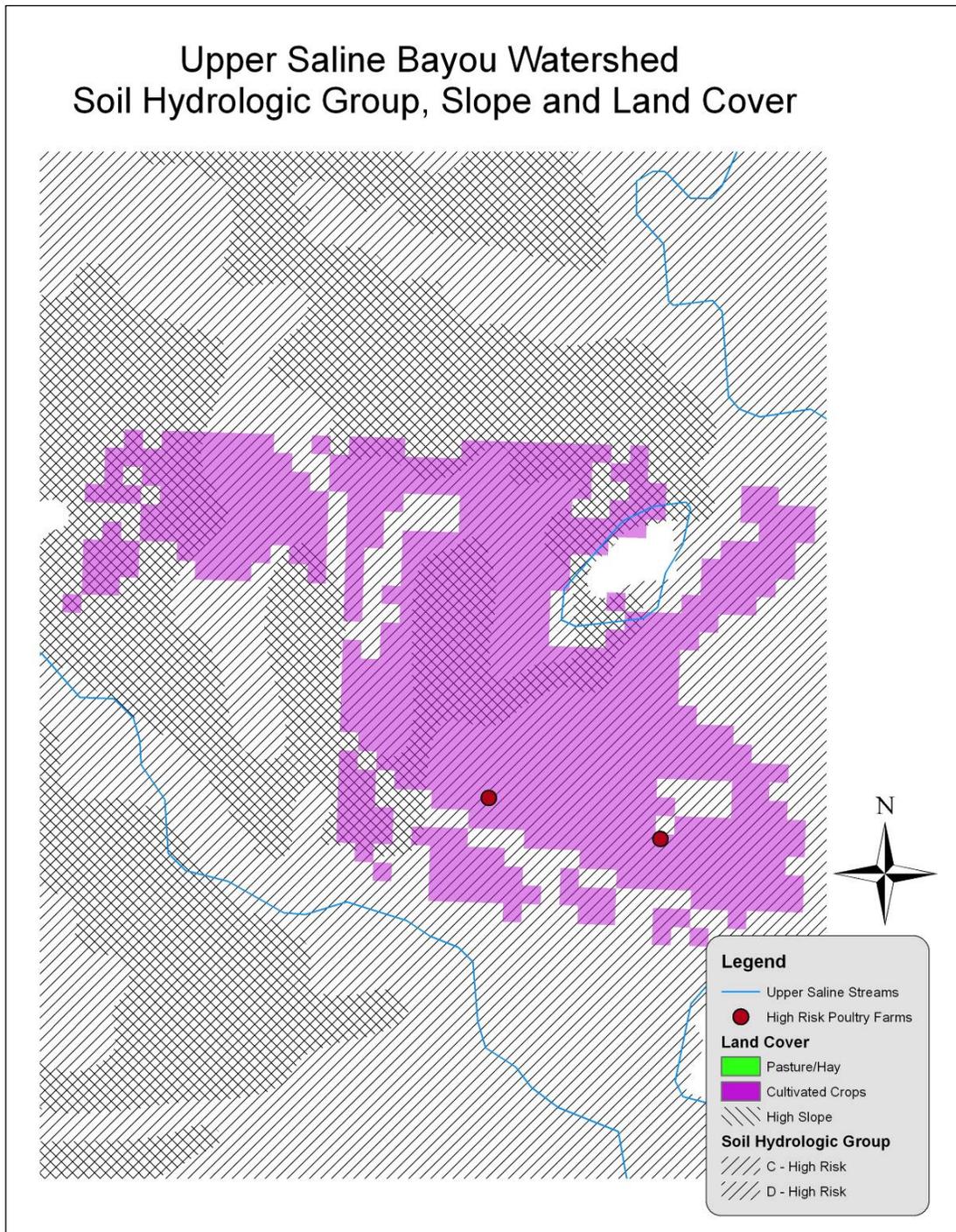
Figure 16: Soil Hydrologic Group, Slope and Land Cover



The following map displays two high risk situations. The two poultry operations are ranked as high risk because they are in close proximity to a surface water body, the associated land use is cropland, and the soil hydrologic groups associated with the operation are either “C” or “D”.

From a soil resource perspective the cross hatched areas are considered a high risk area. The risk matrix logic applied is that the land cover is cropland (high risk), the land slope is steep (high risk), and the soil hydrologic group is “C” or “D” (high risk). That would give a score of nine out of a possible twelve (.75) or 75 if multiplied by 100.

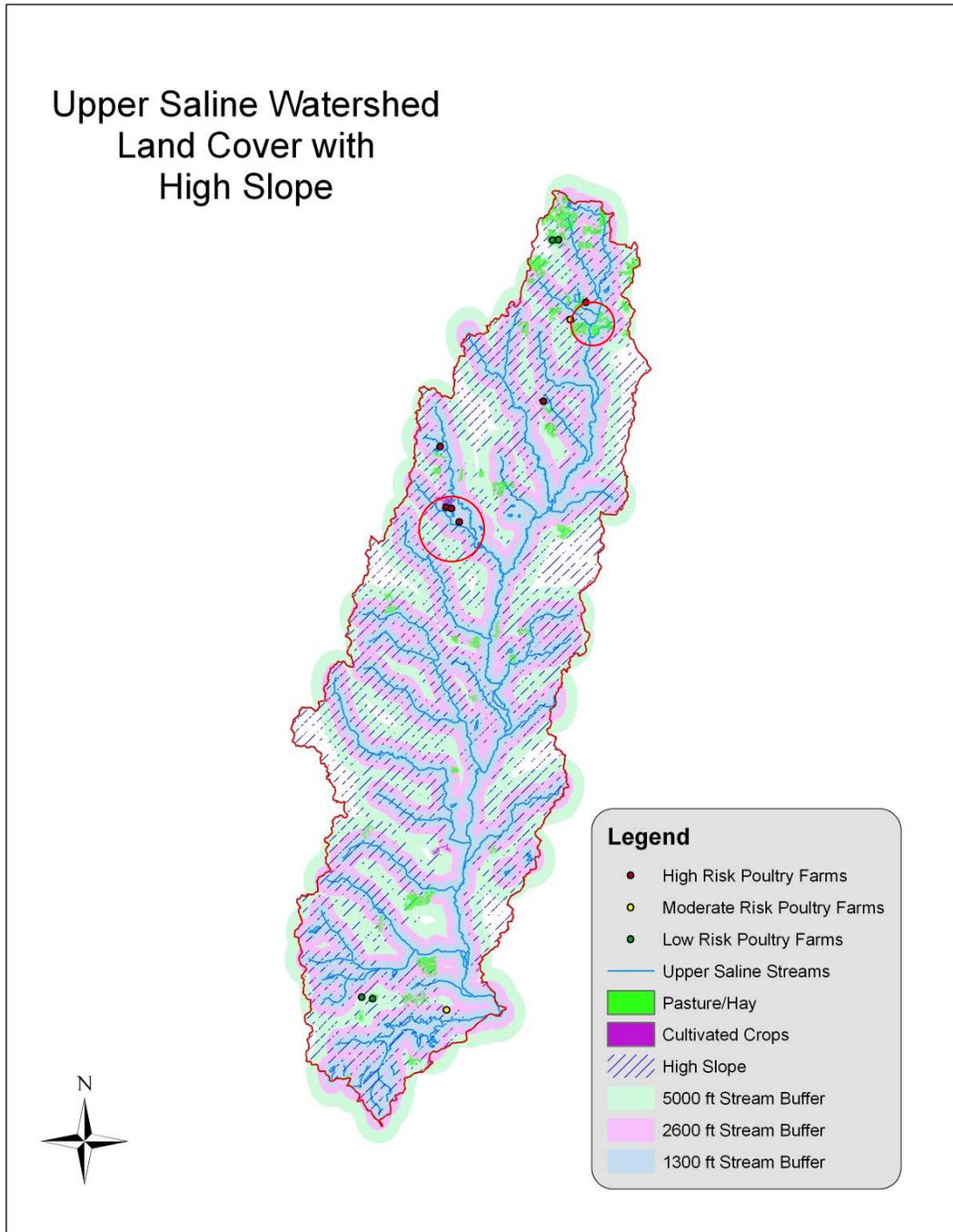
Figure 17: High Risk Areas



Treatment Considerations

One treatment consideration is the creation of buffers adjacent to receiving water bodies. These would be vegetative buffers. The need for this treatment increases as a high or moderate risk land use penetrates the proximity risk zones. These zones are portrayed on the following map with blue, pink, and light green buffers around streams. Two high priority areas based on the presence of a poultry operation, stream proximity, land cover, and slope are defined by red circles on the following map.

Figure 18: High Risk Poultry Areas



Upper Saline – 11140208010: 11-Digit Hydrologic Unit Profile

Census and Social Data

Number of Farms: 56

Median farm size (ac): 108

Number of Operators: 91

Average Age: 56

Full-time operators: 44

Part-time Operators: 47

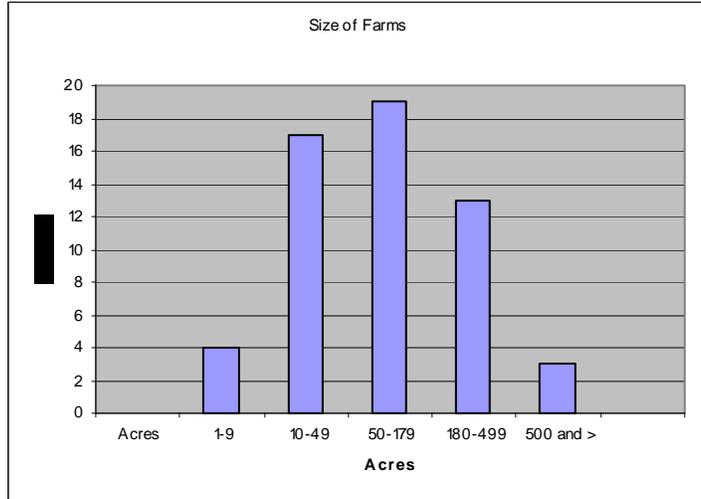


Table 4: Census and Social Data Table

Estimated Level of Willingness and Ability to Participate in Conservation:

Two-thirds of the agricultural landowners in the Upper Saline sub basin own less than 180 acres of land, and more than half are part-time operators. The majority are inter-generational transfer (family inherited) operations of sound financial health. Landowner awareness of local resource concerns, the connection of their operations to larger resource issues, and overall landowner stewardship are all high; contributing to the willingness to participate in conservation.

Obstacles to the timely and widespread adoption of conservation in the Upper Saline sub basin include the perceived cost of conservation systems, as well as a general lack of community social capital. While the watershed community openly participates in civic, social and religious activities; it's participation in conservation organizations is rare. Community willingness to participate in collaborative resource planning is considered low as well.

Recommendations for a more full and timely participation in the project include: minor to moderate changes in the existing information/educational delivery system, moderate adjustments in technical assistance, as well as, adjustments in conservation marketing. Indications are that a major expansion/increase in financial incentives is required if the project is to achieve a successful and timely participation.

Upper Saline Bayou Watershed HUC – 11140208010 – Assessment

Description

This assessment matrix has been developed to provide an estimate of conservation systems which may be needed to address resource concerns identified in the RWA Resource Profile. This can also be described as likely future conditions within the watershed.

Conservation systems have been described in this assessment as systems of conservation practices developed to address resource concerns on various land uses. Systems include benchmark and resource management systems. Benchmarks (BM) systems are best described as land units that have had no treatment or one or more resource concerns treated with conservation practices. Resource management systems (RMS) are described as land units which have all known resource concerns treated with conservation practices. The level of treatment to an individual resource concern is credited when the practice(s) used, meet or exceed a predetermined level of treatment, known as quality criteria.

Resource concerns have been described in this RWA. These concerns were identified at a public meeting held in the watershed area. There was a comment period as well whereby interested parties that did not attend the public meeting could submit their comments to NRCS. Other resource concerns likely exist within the watershed but only make up a small percentage of what needs to be treated. Further investigation and analysis will need to be completed in order to better define all resource concerns.

Resource professionals provided an estimate by percent of conservation systems that will likely be applied to BM systems and untreated land units to address resource concerns identified in the resource profile. These systems are not meant to be comprehensive or address all resource concerns for each land unit in the watershed; rather, only the typical system of conservation practices that could be applied. Numerous alternatives and combinations of practices exist that should be made available to landowners and producers in order to meet their desired level of treatment.

Federal programs identified to implement conservation systems include, but are not limited to; Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), and WRP. Other funding available for implementation includes various private, local, and state program funds.

This assessment provides estimates only that have been developed using local conservation and work groups to identify resource concerns, participation rates, and conservation systems likely to be applied. This information was merged with state average cost lists and estimated operation and maintenance costs to generate a cost estimate by individual practice for each conservation system projected to be applied. To cope with inflation and increase production cost, state average cost list are updated on an annual basis. Further investigation and analysis within the watershed is required to identify all resource concerns and locations of conservation practices and systems needed to address resource concerns.

Rapid Watershed Assessment For:								Future Conditions For:								
NAME: <u>Upper Saline Bayou Watershed HUC 11140208010</u>																
Management Systems		Quantity		Effects*				Implementation								
	Practices	Unit	Quantity	Water Qual	Water Qual	Plant Cond	Domes Ani	CTA	EQIP	WRP	WHIP	CSP	CRP	CREP	Others	
Baseline		AC/NO.														
	No conservation practices being applied at this level															
Progressive																
	No conservation practices being applied at this level															
RMS				(+)	4	(+)	5									
	Fence 382	ft.	1,103,267					X	X							
	Grade Stab. Struct. 410	nos.	339					X	X							
	Nutrient Manage. 590	acres	10,184					X	X							
	Prescribed Graz. 528	acres	10,184					X	X							
Notes:								Estimated Time Frame = 5 Years								

Note: See attachments for economic analysis

*Note: Effects are numerical values placed on benchmark conditions and degree of change in conditions by conservation system (s) application. Scale ranges from (-) most damaging to resources to (+) best protection offered by treatment.

Table 5: Upper Saline Livestock Assessment

Table 6: Upper Saline Livestock Variables

DOCUMENTATION SECTION

Enter Watershed Variables Below												
Watershed Name			<input type="text" value="Upper Saline Bayou Watershed"/>			Watershed Code			<input type="text" value="11140208010"/>		<input type="button" value="Help"/>	
Landuse Type			<input type="text" value="Livestock"/>			Landuse Acres			<input type="text" value="13,400"/>		Interest Rate	<input type="text" value="5%"/>
Typical Unit Size (ac)			<input type="text" value="60"/>			Percent TA of FA			<input type="text" value="20%"/>		Cost-Share Rate	<input type="text" value="50%"/>
Estimated Time Frame = 5 years		Participation Rate			<input type="text" value="70%"/>				<input type="text" value="70%"/>		Calculated Participation Rate	<input type="button" value="Next"/>
			(Based on Watershed Profile)								(Based on Projected Future Conditions)	
Current Conditions			Projected Change			Projected Future Condition						
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres				
								Total	Static	Treated		
Baseline	40%	5,360	Baseline	30%	1,608	Baseline	12%	1,608	1,608	0		
			Progressive	0%	0							
			RMS	70%	3,752							
			Must Total 100%		100%							
Current Conditions			Projected Change			Projected Future Condition						
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres				
								Total	Static	Treated		
Progressive	40%	5,360	Progressive	30%	1,608	Progressive	12%	1,608	1,608	0		
			RMS	70%	3,752							
			Must Total 100%		100%							
Current Conditions			Projected Change			Projected Future Condition						
System	Percent	Acres	System	Percent	Acres	System	Percent	Acres				
								Total	Static	Treated		
RMS	20%	2,680	RMS	100%	2,680	RMS	76%	10,184	2,680	7,504		
			Must Total 100%		100%							
Grand Totals		100%	13,400			100%		13,400	5,896	7,504		

Table 7: Upper Saline Livestock Assessment

WATERSHED NAME & CODE		UPPER SALINE BAYOU WATERSHED - 11140208010			LANDUSE ACRES		13,400	
LANDUSE TYPE		LIVESTOCK			TYPICAL UNIT SIZE ACRES		60	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		70%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Water Quality – Excessive Nutrients and Organics in Surface Water	Water Quality – Harmful Levels of Pathogens in Surface Water	Plant Condition – Productivity, Health and Vigor	Domestic Animals – Inadequate Quantities and Quality of Feed and Forage
Baseline					System Rating ->			
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Total Acreage at Baseline	5,360	1,608	0	1,608				
Progressive					System Rating ->			
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Total Acreage at Progressive Level	5,360	1,608	0	1,608				
RMS					System Rating ->			
No Conservation Practices being applied at this level	0	0	0	0	4	4	5	5
Fence (ft.) 382	290,333	290,333	812,933	1,103,267	4	4	5	5
Grade Stabilization Structure (no.) 410	89	89	250	339	2	2	3	2
Nutrient Management (ac.) 590	2,680	2,680	7,504	10,184	3	3	5	4
Prescribed Grazing (ac.) 528	2,680	2,680	7,504	10,184	4	4	5	5
Total Acreage at RMS Level	2,680	2,680	7,504	10,184				

Table 9: Upper Saline Livestock Funding Sources

WATERSHED NAME & CODE		UPPER SALINE BAYOU WATERSHED - 11140208010						LANDUSE ACRES			13,400	
LANDUSE TYPE		LIVESTOCK						TYPICAL UNIT SIZE ACRES			60	
POSSIBLE SOURCES OF FUNDING							CALCULATED PARTICIPATION			70%		
Conservation Systems by Treatment Level		FUTURE	FARM BILL					OTHERS			NOTES/COMMENTS	
		New Treatment Units	CTA	EQIP	WRP	WHIP	CSP	CRP/CREP	Fed	State		Local
Progressive												
No Conservation Practices being applied at this level		0										
New Treatment Acreage		0										
RMS												
No Conservation Practices being applied at this level		0										
Fence (ft.) 382		812,933	X	X								
Grade Stabilization Structure (no.) 410		250	X	X								
Nutrient Management (ac.) 590		7,504	X	X								
Prescribed Grazing (ac.) 528		7,504	X	X								
New Treatment Acreage		7,504										

Rapid Watershed Assessment For:								Future Conditions For:															
NAME: <u>Upper Saline Bayou Watershed HUC 11140208010</u>																							
Management Systems		Quantity		Effects*				Implementation															
	Practices	Unit	Quantity	Soil Erosion	Water Qual	Plant Cond	Plant Cond	CTA	EQIP	WRP	WHIP	CSP	CRP	CREP	Others								
Baseline		AC/NO.																					
	No conservation practices being applied at this level																						
Progressive																							
	No conservation practices being applied at this level																						
RMS				(+)	3	(+)	4																
	Firebreak 394	ft.	7,638,000													X	X						
	Forest Stnd Improv. 666	acres	91,656													X	X						
	Forest Trls Landgs 655	acres	7,638													X	X						
	Tree/Shrub Estab. 612	acres	91,656													X	X						
Notes:								Estimated Time Frame = 5 Years															

Note: See attachments for economic analysis

*Note: Effects are numerical values placed on benchmark conditions and degree of change in conditions by conservation system (s) application. Scale ranges from (-) most damaging to resources to (+) best protection offered by treatment.

Table 10: Upper Saline Timber Assessment

Table 12: Upper Saline Timber Assessment Information

WATERSHED NAME & CODE		UPPER SALINE BAYOU WATERSHED - 11140208010			LANDUSE ACRES		120,600	
LANDUSE TYPE		TIMBER			TYPICAL UNIT SIZE ACRES		60	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		70%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Erosion – Road, Roadsides and Construction Sites	Water Quality – Excessive Suspended Sediment and Turbidity in Surface Water	Plant Condition – Productivity, Health and Vigor	Plant Condition – Wildfire Hazard
Baseline					System Rating ->			
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Total Acreage at Baseline	48,240	14,472	0	14,472				
Progressive					System Rating ->			
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Total Acreage at Progressive Level	48,240	14,472	0	14,472				
RMS					System Rating ->			
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Firebreak (ft.) 394	2,010,000	2,010,000	5,628,000	7,638,000	1	1	3	5
Forest Stand Improvement (ac.) 666	24,120	24,120	67,536	91,656	2	2	5	4
Forest Trails & Landings (ac.) 655	2,010	2,010	5,628	7,638	4	4	2	3
Tree/Shrub Establishment (ac.) 612	24,120	24,120	67,536	91,656	2	4	4	2
Total Acreage at RMS Level	24,120	24,120	67,536	91,656				

Table 14: Upper Saline Timber Funding Sources

WATERSHED NAME & CODE		UPPER SALINE BAYOU WATERSHED - 11140208010						LANDUSE ACRES			120,600	
LANDUSE TYPE		TIMBER						TYPICAL UNIT SIZE ACRES			60	
POSSIBLE SOURCES OF FUNDING							CALCULATED PARTICIPATION			70%		
Conservation Systems by Treatment Level		FUTURE	FARM BILL					OTHERS			NOTES/COMMENTS	
		New Treatment Units	CTA	EQIP	WRP	WHIP	CSP	CRP/ CREP	Fed	State		Local
Progressive												
No Conservation Practices being applied at this level		0										
New Treatment Acreage		0										
RMS												
No Conservation Practices being applied at this level		0										
Firebreak (ft.) 394		5,628,000	X	X								
Forest Stand Improvement (ac.) 666		67,536	X	X								
Forest Trails & Landings (ac.) 655		5,628	X	X								
Tree/Shrub Establishment (ac.) 612		67,536	X	X								
New Treatment Acreage		67,536										

Table 15: Upper Saline Poultry Assessment

Rapid Watershed Assessment For:								Future Conditions For:								
NAME: <u>Upper Saline Bayou Watershed HUC 11140208010</u>																
Management Systems		Quantity		Effects*				Implementation								
	Practices	Unit	Quantity	Soil Condit	Water Qual	Water Qual	Fish/Wild	CTA	EQIP	WRP	WHIP	CSP	CRP	CREP	Others	
Baseline		AC/NO.														
	No conservation practices being applied at this level															
Progressive																
	No conservation practices being applied at this level															
RMS				(+3)	(+3)	(+2)	(+1)									
	Compost. Facility 317	nos.	6					X	X							
Notes:				Estimated Time Frame = 5 Years												

Note: See attachments for economic analysis

*Note: Effects are numerical values placed on benchmark conditions and degree of change in conditions by conservation system (s) application. Scale ranges from (-) most damaging to resources to (+) best protection offered by treatment.

Table 17: Upper Saline Poultry Assessment Information

WATERSHED NAME & CODE		UPPER SALINE BAYOU WATERSHED - 11140208010			LANDUSE ACRES		84	
LANDUSE TYPE		POULTRY			TYPICAL UNIT SIZE ACRES		12	
ASSESSMENT INFORMATION					CALCULATED PARTICIPATION		70%	
Conservation Systems by Treatment Level	Benchmark Conditions	Future Conditions			RESOURCE CONCERNS			
	Total Units	Existing Unchanged Units	New Treatment Units	Total Units	Soil Condition – Contaminants: Animal Waste and Other Organics – P	Water Quality – Excessive Nutrients and Organics in Surface Water	Water Quality – Harmful Levels of Pathogens in Surface Water	Fish and Wildlife – T & E Fish/Wildlife Species: Listed or Proposed under ESA
Baseline	System Rating ->				0	0	0	0
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Total Acreage at Baseline	34	10	0	10				
Progressive	System Rating ->				0	0	0	0
No Conservation Practices being applied at this level	0	0	0	0	0	0	0	0
Total Acreage at Progressive Level	0	0	0	0				
RMS	System Rating ->				3	3	2	1
Composting Facility (no.) 317	4	4	2	6	5	5	4	3
Total Acreage at RMS Level	50	50	24	74				

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Geology LaGIS2007: Geophysical/geology_NWRC_1998

Soils LaGIS2005: La_GIS3007: Geophysical/statsgo_soils_NWRC_1998

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Transportation – State Highways LaGIS2007:

Transportation – State Highways LaGIS2007: Transportation/state_highways_ldotd_2007

Appendix A

Upper Saline Bayou Rapid Watershed Assessment Meeting

**Minutes of the
Public Meeting for the
Upper Saline Bayou Rapid Watershed Assessment Meeting
August 21, 2007 – 6:00 PM
Bienville Parish Library – Arcadia, LA**

Attendees

James L. Loe	Delores Wilkerson Smith	Greg Wall
Henry D. Thrash	Billy Don & Jackie Perritt	Ellzey Simmons
Don Cooper	Garnetta Sapp Pruitt	Mr. Lewis
Kelly Garris	Donald Byrd	Patrick Jefferson
Sam LeNarz	Denise Robinson	Connie Kyles
Tony Duplechin	Eugene Smith	Britt Paul
Roger Culbertson	Allen Nipper	Gordon Newton
Charlie Jackson	Patrick Blanchard	
Brian Wade	James E. Moss	
Neil Moon	Gilbert Pickens	
Dexter Sapp	Steve Nipper	

Facilitator **Ellzey Simmons**
Recorder **Steve Nipper**

The Upper Saline Bayou Rapid Watershed Assessment Public Meeting was held on August 21, 2007 at 6:00 PM at the Bienville Parish Library in Arcadia. The purpose of this meeting was to allow for public input of the resource concerns for the Upper Saline Bayou Watershed. Handouts including Rapid Watershed Asssesment Fact Sheets, Watershed and Sparta Aquifer Maps, and a questionnaire were made available for each meeting participant

Bobbie Wall, District Conservationist for the Natural Resources Conservation Service Office in Minden, welcomed everyone to the meeting. She introduced other NRCS employees present and recognized any public officials, dignitaries, and partnering agency personnel. She then turned the meeting over to Ellzey Simmons, RC&Dn Coordinator for the Trailblazer RC&D, Inc. Mr. Simmons served as the facilitator for the public meeting.

Mr. Simmons began by explaining the meaning of a Rapid Watershed Assessment (RWA). A RWA is one aspect of a plan to produce a report that will be available to apply for federal dollars to address resource concerns.

Mr. Simmons also laid guidelines for the meeting. He explained that all comments would be received with fairness to all the attendees and that no one person would dominate the meeting. He also explained that he would list bullets of the resource concerns and that if they were repeated, an asterisk would be placed by that bullet to emphasize that it was a concern for more than one person. Mr. Simmons explained that we were not there to resolve any problems. The

public meeting was to list resource concerns that would be used in the final preparation of the RWA. Mr. Simmons explained that he would control the flow of the meeting and to please honor the rules that he set forth so that the meeting would be conducted in an orderly fashion.

Mr. Simmons then explained that notes would be recorded at this meeting and these notes would later be grouped together for the final RWA report. Mr. Simmons began by going around the room and asking each attendee if they had a resource concern that they would like listed. Mr. Simmons went around the room three times and asked each individual to give him a resource concern for the Upper Saline Bayou Watershed. The following resource concerns were listed, in the order that they were given and not order of importance, as being important to the Upper Saline Bayou Watershed.

Listed Resource Concerns:

1. Water Availability - *
2. Water Quality - * *
3. Water Supply - *
4. Economic Development
5. Population Changes
6. Salt Water Intrusion
7. Develop more surface water sources - * *
8. Invasive Species – Plant and Animal - *
9. Pests – hogs, town ants, beaver - *
10. Water Pollution
11. General Health of Population
12. Water System Maintenance - * *
13. Illegal Dumping and Litter - * *
14. Rural Water Systems – Upgrades and Expansion
15. Sewerage Treatment
16. Recreational Water Sources - *
17. Solid Waste Control
18. Drug Control
19. Wildlife Habitat - *
20. Labor Force – More Skilled - **Discussion - There is some concern about the lack of a skilled and educated labor needed to fill the labor force**
21. Energy Conservation Grants – Incentives – **Discussion – There should be some type of grant money available to encourage energy conservation**
22. Tax Base/Public Services
23. Environmental Quality – **Discussion – Measures need to be taken to improve the quality of life in the watershed**
24. Stronger Control Burn Program – Fire Lanes
25. Additional Monies for Rural Fire Fighting (Louisiana Office of Forestry)
26. Roads and Bridges
27. Salt Water Injection Wells and Sludge – **Discussion – Drilling sludge is being injected into the ground which could eventually contaminate the ground water**

* **This was a concern for more than one person**

Mr. Simmons again requested any more resource concerns that were not listed and none were added. He turned the meeting over to Mr. Dexter Sapp.

Mr. Dexter Sapp, Soil Conservationist with the NRCS Water Resources Staff in Alexandria State Office, addressed the group. Mr. Sapp explained in further detail what the RWA would entail and the possible uses for this document upon completion. He thanked everyone for attending the meeting. He then entertained questions from those attending the meeting. The deadline for completion of the assessment is June 2008. The public will be notified of availability of the document. Hardcopies will be available and the document will be posted on NRCS's website.

Following a question and answer session, the meeting adjourned at approximately 7:00 PM.

To accommodate the constituents that were not present at the August 21, 2007 public meeting, NRCS submitted a news release, to Arcadia's Newspaper – the Bienville Democrat/Ringgold Record, which gave concerned residents a 30 day period to submit comments to NRCS. NRCS received a combination of E-mails, faxes, and letters from 13 concerned property owners in Bienville Parish. They all essentially had the following concerns: They are opposed to the Rapid Watershed Assessment because they feel that this process could lead to the construction of a reservoir. Additionally they also expressed the need for the control of invasive plants and animals (wild hogs, beavers, and otters), rural water system upgrades and expansions, water system maintenance, promoting timber and oil/gas resources, and control burn issues.