



United States Department of the Interior

FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.

Suite 400

Lafayette, Louisiana 70506

December 17, 2010



Mr. Kevin Norton
State Conservationist
USDA Natural Resource Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

Dear Mr. Norton,

Please reference the U.S. Fish and Wildlife Service's (Service) letter of concurrence dated September 30, 2009, regarding your *2009 Louisiana ESA Programmatic Consultation of NRCS Conservation Practices* (Programmatic) document. In 2010, Service staff assisted the Natural Resource Conservation Service (NRCS) in providing statewide training regarding implementation of the Programmatic. We also met with NRCS and the Louisiana Department of Wildlife and Fisheries on November 3, 2010, for our annual Programmatic coordination meeting. Based on additional information obtained from NRCS during the training sessions and the 2010 coordination meeting, we are modifying and updating the Programmatic and our concurrence. The following Service comments are provided in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

We failed to include gulf sturgeon (*Acipenser oxyrinchus desotoi*) critical habitat in our original concurrence letter. Therefore, based on the information provided in your original determination letter of September 19, 2009, and its attached Programmatic, we concur that the Conservation Practice Standards (CPS) covered in the Programmatic will have no effect or are not likely to adversely affect gulf sturgeon critical habitat. There have been no new effects to gulf sturgeon critical habitat that were not previously considered. The following modifications are included in the attached updated Programmatic.

- The name of the CPS *Pasture and Hay Planting* has been changed to *Forage and Biomass Planting*.
- For the CPS *Tree/Shrub Establishment*, the criteria listed under the NLAA subcolumn for the Louisiana black bear has been changed from B¹ to X1. There have been no new effects to the Louisiana black bear and its critical habitat for that CPS that was not previously considered.
- The new interim CPS *Seasonal High Tunnel System for Crops* has been added to the Programmatic. Based on the CPS description and other information provided us by NRCS, we concur that the CPS will not affect or is not likely to adversely affect any federally listed species and their critical habitats. It is not likely to negatively impact the Louisiana pine snake (*Pituophis ruthveni*).



We are currently updating our parish occurrence list and habitat descriptions of threatened and endangered species in Louisiana. That information will be provided you once the internal review process is complete.

We appreciate the good working relationship we have with NRCS in Louisiana and the support and positive feedback received during our training sessions with NRCS on the Programmatic. We look forward to working with you on future efforts to conserve and protect fish and wildlife resources here in Louisiana. Please contact Rob Smith (337/291-3134) of this office with any questions regarding these revisions.

Sincerely,



Brad S. Rieck
Deputy Supervisor
Louisiana Ecological Services Office

Attachment

Cc: LDWF, Baton Rouge, LA (attn: Kyle Balkum)

**2010 LOUISIANA ESA PROGRAMMATIC CONSULTATION of NRCS
CONSERVATION PRACTICES (Revised Dec. 17, 2010)**

Effects Determination

We have determined the conservation practices listed under the matrix will have no effect on 10 federally listed species or their critical habitats because those practices are not used in areas where the following species or critical habitat occur: pallid sturgeon (*Scaphirhynchus albus*), interior least tern (*Sterna antillarum*), fat pocketbook pearly mussel (*Potamilus capax*), piping plover (*Charadrius melodus*), brown pelican (*Pelecanus occidentalis*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*) and loggerhead sea turtle (*Caretta caretta*). Therefore, those species are not included in the matrix.

As part of the determination process, NRCS staff will have a USFWS-provided list of threatened and endangered species by parish and habitat descriptions/locations for each species included in the matrix. A determination of "no effect" will be made of practices when it is installed in a parish lacking listed species or at a site that is not within or adjacent to listed species habitat. When a practice would be installed within or adjacent to listed species habitat, NRCS staff should use information in the following matrix to assist with their determination.

Matrix Description

This matrix presents all conservation practices considered during the programmatic consultation (ordered alphabetically by conservation practice name) and indicates the potential effects and any minimization criteria for each practice for Federally listed species. The following describes the acronyms used in the matrix.

Column Headings

Species identified by columns in the matrix are as follows:

Species	Column Symbol	Criteria Symbol
American chaffseed (<i>Schwalbea americana</i>)	AC	P ^{1,2,3}
earthfruit (<i>Geocarpon minimum</i>)	EF	P ^{1,2,3}
gopher tortoise (<i>Gopherus polyphemus</i>)	GT	G ^{1,2,3}
Louisiana black bear (<i>Ursus americanus luteolus</i>)	LBB	B ^{1,2,3}
red-cockaded woodpecker (<i>Picoides borealis</i>)	RCW	R ^{1,2}
Louisiana pearlshell mussel (<i>Margaritifera hembeli</i>) and Louisiana quillwort (<i>Isoetes louisianensis</i>)	LPM & LQ	A ^{1,2}
Alabama heelsplitter mussel (<i>Potamilus inflatus</i>), gulf sturgeon (<i>Acipenser oxyrinchus desotoi</i>), pink mucket pearly mussel (<i>Lampsilis abrupta</i>), ringed map turtle (<i>Graptemys oculifera</i>) and West Indian manatee (<i>Trichechus manatus</i>)	5 Aq. Spp.	None required

Louisiana pearlshell mussel and Louisiana quillwort share the same effects determinations for all but one practice (identified in the matrix) and are combined into 1 column. The 5 remaining aquatic species identified by the matrix share the same effects determinations as well. They are also combined into 1 column.

Sub-Column NLAA

The sub-columns titled NLAA (not likely to adversely affect) contain criteria required for installing certain practices to ensure that the practice is not likely to adversely affect that species. The criteria for American chaffseed and earthfruit are the same and share the same criteria symbol "P" for plant. Louisiana pearlshell mussel and Louisiana quillwort also share the same criteria and share the same criteria symbol "A" for aquatic species. Each species or groups of species have more than 1 criterion, which is represented by a numbered superscript after each criteria symbol. For example, the symbol "B¹" represents criterion number 1 for the Louisiana black bear. It was determined that no criteria were needed for the 5 aquatic species group.

When criteria are lacking, the reason for a determination of NLAA is provided for that practice. Four possible reasons for a determination of NLAA for practices lacking species criteria are given and are represented in the matrix as X1, X2, X3 or X4. More than 1 reason for a determination of NLAA may be given a practice because that practice could have more than 1 effect on listed species. The letter "C" under the NLAA sub-column denotes practices that may adversely affect listed species; therefore, further coordination with the NRCS State Biologist or US Fish and Wildlife Service is needed to determine if formal consultation is required for that action. Further coordination will also be needed if species criteria are associated with a practice and those criteria cannot be met when implementing the practice.

Sub-column BE

Symbols under the sub-columns titled BE (beneficial effect) indicate when and why certain practices are beneficial to that listed species. Beneficial effects explanations are different for terrestrial species (Y1) and aquatic species (Y2). A form adapted for field use may be provided NRCS staff to assist them in making determinations in the field. This consultation and subsequent determination matrix is designed mainly to address potential indirect or habitat impacts to listed species. In the rare event that a federally listed species is identified within the area of impact, implementation of the conservation practice should cease or be modified to avoid the "take" of that species, as defined by Section 9 of the ESA.

Conservation Practices	LBB		GT		RCW		AC		EF		5 Aq. Spp.		LPM & LQ	
	NLAA	BE	NLAA	BE	NLAA	BE								
Access Control	---	Y1	---	Y2	---	Y2								
Access Road	B ¹⁻³	---	G ¹⁻³	---	R ^{1,2}	---	P ^{1,2}	---	P ^{1,2}	---	X1	---	A ^{1,2}	---
Alley Cropping	X1	Y1	G ^{1,2}	Y1	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Animal Mortality Facility	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Animal Trails and Walkways	B ³	---	G ¹⁻³	---	X1	---	X1	---	X1	---	X1	---	A ^{1,2}	Y2
Aquaculture Ponds	X1	---	X2	---	X1	---	X1	---	X1	---	X3, X4	---	X3, X4	---
Bedding	X1	---	X2	---	X1	---	X1	---	X1	---	X4	---	X4	---
Atmospheric Resource Quality Management	C	---	C	---	C	---								
Brush Management	B ¹⁻³	Y1	G ¹	Y1	X1	---	X1	---	X1	Y1	X4	---	X4	---
Channel Bank Vegetation	B ¹	Y1	X2	---	R ¹	---	X1	---	X1	---	---	Y2	---	Y2
Channel Stabilization	X1	---	G ¹	---	X1	---	X1	---	X1	---	X1	---	X1	---
Clearing and Snagging	X1	---	G ¹	---	X1	---	X1	---	X1	---	C	---	C	---
Closure of Waste Impoundment	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Composting Facility	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Conservation Cover	B ¹⁻³	Y1	G ¹	Y1	R ¹	Y1	X1	---	P ¹	---	X1	Y2	X1	Y2
Conservation Crop Rotation	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Constructed Wetland	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Contour Buffer Strips	X1	---	---	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Contour Farming	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Contour Orchard and Other Fruit Area	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Contour Stripcropping	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Cover Crop	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Critical Area Planting	B ^{1,3}	---	G ¹	Y1	R ¹	Y1	X1	---	P ¹	---	X1	Y2	X1	Y2
Dam, Floodwater Retarding	B ¹⁻³	---	G ¹⁻³	---	R ^{1,2}	---	P ^{1,2}	---	P ^{1,2}	---	C	---	C	---
Dam, Diversion	B ¹⁻³	---	G ¹⁻³	---	R ^{1,2}	---	P ^{1,2}	---	P ^{1,2}	---	C	---	C	---
Deep Tillage	B ³	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Dike	B ³	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X3, X4	Y2	X3, X4	Y2
Diversion	B ¹	---	G ^{1,3}	---	R ¹	---	X1	---	X1	---	X3, X4	Y2	X3, X4	Y2
Drainage Water Management	B ³	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2

Conservation Practices	LBB		GT		RCW		AC		EF		5 Aq. Spp.		LPM & LQ	
	NLAA	BE	NLAA	BE	NLAA	BE								
Dry Hydrant	B ³	---	G ¹	---	R ¹	---	X1	---	X1	---	X3	---	X3	---
Early Successional Habitat Development/Management	X1	---	G ¹	Y1	X1	---	X1	---	P ¹	Y1	---	Y2	---	Y2
Fence	B ³	---	G ^{1,3}	Y1	X1	---	---	Y1	---	Y1	X1	Y2	A ²	Y2
Field Border	X1	---	G ¹	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Filter Strip	X1	---	G ¹	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Firebreak	B ¹⁻³	---	G ^{1,2}	Y1	R ¹	---	P ^{1,2}	---	P ^{1,2}	---	X1	---	X1	---
Fishpond Management	X1	---	X2	---	X1	---	X1	---	X1	---	X1	---	X1	---
Forage and Biomass Planting	X1	---	G ¹	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Forage Harvest Management	X1	---	G ^{1,2}	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Forest Stand Improvement	B ^{1,3}	Y1	G ^{1,2}	Y1	R ^{1,2}	Y1	P ¹	Y1	X1	---	X4	---	X4	---
Forest Trails and Landings	B ¹⁻³	---	G ^{1,2}	---	R ^{1,2}	---	P ^{1,2}	---	X1	---	X1	---	A ^{1,2*}	---
Grade Stabilization Structure	B ³	---	G ¹	---	R ¹	---	X1	---	X1	---	X1	Y2	X1	Y2
Grassed Waterway	X1	---	---	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Grazing Land Mechanical Treatment	B ³	---	G ^{1,2}	Y1	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Heavy Use Area Protection	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Hedgerow Planting	---	Y1	G ¹	Y1	---	Y1	X1	---	P ¹	---	---	Y2	---	Y2
Hillside Ditch	B ¹⁻³	---	G ¹⁻³	---	R ^{1,2}	---	P ^{1,2}	---	P ^{1,2}	---	X4	---	X4	---
Irrigation Canal or Lateral	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Field Ditch	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Land Leveling	B ³	---	X2	---	X1	---	X1	---	X1	---	X3, X4	Y2	X3, X4	Y2
Irrigation Regulating Reservoir	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Storage Reservoir	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation System, Microirrigation	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation System, Sprinkler	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation System, Surface and Subsurface	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2

Conservation Practices	LBB		GT		RCW		AC		EF		5 Aq. Spp.		LPM & LQ	
	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE
Irrigation System, Tailwater Recovery	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Ditch and Canal Lining, Flexible Membrane	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Ditch and Canal Lining, Plain Concrete	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Aluminum Tubing	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Asbestos-Cement	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Nonreinforced Concrete	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Reinforced Plastic Mortar	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Rigid Gated Pipeline	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Conveyance, Pipeline, Steel	B ³	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Irrigation Water Management	X1	---	X2	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Land Clearing	B ¹⁻³	---	G ^{1,2}	---	R ^{1,2}	---	P ^{1,2}	---	X1	---	X4	Y2	X4	Y2
Land Reclamation, Abandoned Mined Land	B ¹	Y1	---	Y1	R ¹	Y1	---	Y1	---	Y1	X4	Y2	X4	Y2

Conservation Practices	LBB		GT		RCW		AC		EF		5 Aq. Spp.		LPM & LQ	
	NLAA	BE	NLAA	BE	NLAA	BE								
Land Reclamation, Currently Mined Land	---	Y1	---	Y1	X1	Y1	---	Y1	---	Y1	X4	Y2	X4	Y2
Land Smoothing	X1	---	X2	---	X1	---	X1	---	X1	---	X3, X4	Y2	X3, X4	Y2
Lined Waterway or Outlet	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Livestock Shade Structure	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Mulching	X1	---	G ¹	---	X1	---	X1	---	P ¹	---	X4	Y2	X4	Y2
Manure Transfer	B ³	---	G ¹	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Nutrient Management	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Obstruction Removal	C	---	C	---	C	---								
Open Channel	B ¹⁻³	---	G ¹⁻³	---	R ^{1,2}	---	P ¹	---	P ¹	---	C	---	C	---
Pest Management	X1	---	X2	---	X1	---	P ¹	Y1	P ¹	Y1	---	Y2	---	Y2
Pipeline	B ³	---	G ¹	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Pond	B ¹⁻³	---	G ^{1,2}	---	R ^{1,2}	---	P ¹	---	P ¹	---	X3, X4	Y2	X3, X4	Y2
Pond Sealing or Lining, Bentonite Sealant	X1	---	X2	---	X1	---	X1	---	X1	---	X1	---	X1	---
Pond Sealing or Lining, Compacted Clay Treatment	X1	---	X2	---	X1	---	X1	---	X1	---	X1	---	X1	---
Pond Sealing or Lining, Flexible Membrane	X1	---	X2	---	X1	---	X1	---	X1	---	X1	---	X1	---
Pond Sealing or Lining, Soil Dispersant	X1	---	X2	---	X1	---	X1	---	X1	---	X1	---	X1	---
Precision Land Forming	B ³	---	X2	---	X1	---	X1	---	X1	---	X4	Y2	X4	---
Prescribed Burning	X1	---	---	Y1	R ²	Y1	---	Y1	---	Y1	X1	---	X1	---
Prescribed Forestry	B ^{1,3}	Y1	G ^{1,2}	Y1	R ^{1,2}	Y1	P ¹	Y1	P ¹	---	X1, X4	---	X1, X4	Y2
Prescribed Grazing	X1	---	---	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Pumping Plant for Water Control	B ³	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Range Planting	X1	---	G ^{1,2}	---	X1	---	X1	---	P ^{1,2}	Y1	---	Y2	---	Y2
Recreation Area Improvement	B ¹⁻³	---	G ^{1,2}	---	R ^{1,2}	---	P ^{1,2}	---	P ^{1,2}	---	X4	---	X4	---
Recreation Land Grading and Shaping	B ¹⁻³	---	G ^{1,2}	---	R ^{1,2}	---	P ¹	---	P ¹	---	X4	---	X4	---

Conservation Practices	LBB		GT		RCW		AC		EF		5 Aq. Spp.		LPM & LQ	
	NLAA	BE	NLAA	BE	NLAA	BE								
Recreation Trail and Walkway	B ¹⁻³	---	G ^{1,2}	---	R ^{1,2}	---	P ^{1,2}	---	P ^{1,2}	---	X4	Y2	A ^{1,2}	Y2
Residue and Tillage Management, Mulch Till	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Residue and Tillage Management, No-Till/Strip Till/Direct Seed	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Residue and Tillage Management, Ridge Till	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Residue Management, Seasonal	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Restoration and Management of Rare and Declining Habitats	---	Y1	G ¹	Y1	---	Y1	---	Y1	---	Y1	---	Y2	---	Y2
Riparian Forest Buffer	---	Y1	G ¹	Y1	---	Y1	X1	---	X1	---	---	Y2	---	Y2
Riparian Herbaceous Cover	X1	---	G ¹	Y1	X1	---	X1	---	X1	---	---	Y2	---	Y2
Roof Runoff Structure	X1	---	X2	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Row Arrangement	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Runoff Management System	X1	---	X2	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Seasonal High Tunnel System for Crops	X1	---	X2	---	X1	---	X1	---	X1	---	X4	---	X4	---
Sediment Basin	B ³	---	G ¹	---	R ¹	---	X1	---	X1	---	X4	Y2	X4	Y2
Shallow Water Development and Management	X1	---	X2	---	X1	---	X1	---	X1	---	X3, X4	---	X3, X4	---
Silvopasture Establishment	X1	---	G ^{1,2}	Y1	R ^{1,2}	Y1	P ^{1,2}	---	X1	---	---	Y2	---	Y2
Spoil Spreading	X1	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	---	X4	---
Spring Development	C	---	C	---	C	---								
Stream Crossing	B ³	---	X2	---	R ^{1,2}	---	P ²	---	P ²	---	X1	---	A ^{1,2}	Y2
Stream Habitat Improvement and Management	B ¹	---	G ¹	---	R ¹	---	X1	---	X1	---	X4	Y2	X4	Y2
Streambank and Shoreline Protection	B ¹	---	G ¹	---	R ¹	---	X1	---	X1	---	X4	Y2	X4	Y2
Stripcropping	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2

Conservation Practices	LBB		GT		RCW		AC		EF		5 Aq. Spp.		LPM & LQ	
	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE	NLAA	BE
Structure for Water Control	X1	---	X2	---	X1	---	X1	---	X1	---	X3	---	X3	
Surface Drainage, Field Ditch	B ³	---	G ¹	---	X1	---	X1	---	X1	---	X4	---	X4	---
Surface Drainage, Main or Lateral	B ³	---	G ¹	---	X1	---	X1	---	X1	---	X4	---	X4	---
Terrace	X1	---	X2	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Tree/Shrub Establishment	X1	Y1	G ^{1,2}	Y1	R ¹	Y1	---	Y1	P ¹	---	---	Y2	---	Y2
Tree/Shrub Pruning	B ¹	Y1	G ¹	Y1	R ¹	---	---	Y1	X1	---	X1	---	X1	---
Tree/Shrub Site Preparation	B ¹	---	G ^{1,2}	---	R ¹	---	X1	---	P ¹	---	X4	---	X4	---
Upland Wildlife Habitat Management	---	Y1	G ¹	Y1	---	Y1	---	Y1	---	Y1	---	Y2	---	Y2
Vegetative Barrier	B ^{1,3}	---	G ¹	Y1	R ^{1,2}	---	X1	---	X1	---	---	Y2	---	Y2
Waste Storage Facility	B ³	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Waste Treatment Lagoon	B ³	---	G ^{1,2}	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Waste Utilization	B ¹	---	G ¹	---	R ¹	---	P ¹	---	X1	---	X4	Y2	X4	Y2
Water and Sediment Control Basin	B ³	---	G ¹	---	R ¹	---	X1	---	X1	---	X4	Y2	X4	Y2
Water Well	B ³	---	G ¹	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Watering Facility	X1	---	G ¹	---	X1	---	X1	---	X1	---	X3	Y2	X3	Y2
Well Decommissioning	X1	---	G ¹	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Wetland Creation	X1	---	G ^{1,2}	---	X1	---	X1	---	P ¹	---	X4	Y2	X4	Y2
Wetland Enhancement	X1	---	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2
Wetland Restoration	---	Y1	X2	---	X1	---	X1	---	X1	---	X4	Y2	X4	Y2
Wetland Wildlife Habitat Management	---	Y1	X2	---	X1	---	X1	---	X1	---	---	Y2	---	Y2

* The aquatic species criteria assigned to Forest Trails and Landings apply only to Louisiana quillwort

Matrix Determination and Criteria Definitions

X1 = These practices may affect, but are not likely to adversely affect, listed species or their critical habitats (excluding gopher tortoise) because the practices will always be implemented on active cropland, pastureland, orchards, other developed or disturbed areas and/or other areas lacking listed species habitat. Listed species, excluding gopher tortoise, typically do not occur on the following areas: active cropland, active pastureland, active orchards, other developed or disturbed areas and/or other areas lacking listed species habitat. However, listed species may occur adjacent to such lands.

X2 = These practices may affect, but are not likely to adversely affect, gopher tortoises because the practices will always be implemented on active cropland, active orchards, other developed or disturbed areas and/or other areas lacking gopher tortoise habitat. Gopher tortoises typically do not occur on the following areas: active cropland, active orchards, other developed or disturbed areas and/or other areas lacking gopher tortoise habitat. However, gopher tortoises may occur adjacent to such lands.

X3 = Practices associated with water withdrawals (e.g., irrigation and watering systems) may affect, but are not likely to adversely affect, aquatic listed species because the probability of such a practice being installed in the area of potential effect to an aquatic species is so rare that the potential impacts are discountable and insignificant. However, if NRCS does so, the purpose usually is to replace an existing, less efficient water withdrawal system; consequently, the amount of water withdrawn from an aquatic listed species watershed is reduced, which is beneficial to that species. These practices are also beneficial when the water source for these practices are switched from the water body (surface water) to a well (groundwater) or public utilities because it reduces riparian, erosion and/or in-stream impacts to the stream caused by surface-drawing pumps (irrigation) or livestock (watering). For the rare instances when the amount of water drawn from an aquatic species' watershed increases due to installation of these practices, that increase is just enough to accomplish the purpose of the practice, would withdraw a small fraction of total water available for the species' use and would not likely rise to the level of adversely effecting the species. In addition, such practices require their impact on water quality and water quantity to the water body be considered prior to installation. Finally, NRCS will coordinate annually with the Service on the number of water withdrawal practices installed in watersheds occupied by listed aquatic species. Those practices may then be re-evaluated for their potential impacts to aquatic species at that time.

X4 = Listed aquatic species may occur in rivers and streams adjacent to or downstream of areas where these practices may be implemented. Listed aquatic species will not occur within the footprint of these practices. As part of the standard for these practices, NRCS implements or requires basic erosion-control best management practices (BMPs) during installation, operation and maintenance of these practices to minimize, as much as feasible, the amount of contaminants, nutrients, sediments and velocity of water released into streams and rivers. If needed, NRCS will require additional erosion-control BMPs when these practices are installed adjacent or upstream of listed aquatic species habitat to

further minimize contaminants, nutrients, sediments and velocity of water. Most of these practices will not occur within the riparian zone. Those practices that may be implemented within riparian buffers or stream (e.g., Forest Stand Improvement, Heavy Use Protection Area, Streambank and Shoreline Protection, Stream Habitat Improvement and Management, Tree/Shrub Site Preparation, Wetland Enhancement, Wetland Restoration, etc.) have the ultimate effect of improving water quality and/or riparian and in-stream habitat. Therefore, these practices may affect, but are not likely to adversely affect, listed aquatic species.

B¹ = Practice installation should occur outside the denning season (December - April) only when the practice is implemented in bear habitat (e.g., not pastureland or cropland).

B² = Critical and Breeding Habitat should not be permanently converted, removed or degraded by any means (e.g., clearing, trampling, herbiciding, flooding). Clearing of bear habitat should be minimized and restored as soon as feasible when such clearing is temporary.

B³ = A minimum 50 ft. buffer from the trunk or a 10 ft buffer around the tree starting from the farthest extent of its canopy, whichever is greater, should be maintained around potential den trees and candidate den trees (dbh \geq 36 inches). Potential den trees and candidate den trees should not be removed or damaged during practice installation or maintenance.

R¹ = Practice installation and maintenance should not occur within 200 ft of an active cluster, only when the practice is implemented in nesting (pines 60 years or older) or foraging habitat (pines or pine-hardwoods 30 years or older). A survey for cavity trees and an assessment of woodpecker activity would be needed when working in red-cockaded woodpecker habitat. Surveys should be conducted as outlined in Appendix 4 (pp, 288-290) of the Red-cockaded woodpecker Recovery Plan, Second Revision. Contact the USFWS and/or the LDWF red-cockaded woodpecker Safe Harbor Coordinator if assistance is needed to conduct surveys.

R² = Nesting and foraging habitat should not be converted, removed, damaged or degraded by any means (e.g. clearing, trampling, herbiciding, siltation, flooding) within 0.5 mile of an active cluster. Locate known clusters and cavity trees. If assistance is needed regarding the location of known cluster sites, contact the USFWS and/or the LDWF red-cockaded woodpecker Safe Harbor Coordinator. Scrub-shrub habitat may be permanently or temporarily removed without adversely affecting the Red-cockaded woodpecker. If removal of foraging and nesting habitat can not be avoided, then follow the guidelines for managed stability, Appendix 5 (pp. 291-294) of the Red-cockaded Woodpecker Recovery Plan, Second Revision. Note that active cavity trees should not be removed or damaged regardless and inactive cavity trees can only be removed with concurrence from the USFWS and LDWF.

G¹ = Heavy equipment (including mowers) and livestock (e.g., shade structure practice) should stay at least 25 ft. from GT burrow aprons. Contact the USFWS or Louisiana Natural Heritage Program if assistance is needed to conduct surveys.

G² = A minimum of 2.5 acres of GT foraging habitat should be maintained around a burrow at all times and not be permanently converted, removed or degraded by any means (e.g., clearing, trampling, herbiciding, flooding). Clearing of GT habitat should be minimized and restored as soon as feasible when such clearing is temporary. Scrub-shrub habitat may be permanently or temporarily removed without adversely affecting GT. Contact the USFWS or Louisiana Natural Heritage Program if assistance is needed to conduct surveys.

G³ = The practice should allow dispersal and movement (e.g., road w/ little traffic and no barriers/side ditches) to at least 2.5 acres of GT foraging habitat per burrow. Requirements for fencing are: typical fencing = minimum 30 cm ground clearance, electric fencing = 40 cm ground clearance, woven fencing = 30 cm x 30 cm hole every 100 linear ft. of fence.

P¹ = American chaffseed or Earthfruit habitat should not be converted, removed or degraded by any means (e.g., clearing, trampling, herbiciding, flooding).

P² = Installing these practices should not allow access off-road vehicles or livestock to American chaffseed or Earthfruit habitat/areas.

A¹ = Only fords or bridges should be used when crossing a stream. The crossing should be designed to ensure that the natural flow and hydrology of the stream is maintained year-round.

A² = First, in-stream habitat should be avoided and not disturbed. If the stream cannot be avoided, a qualified surveyor of Louisiana pearlshell mussel or Louisiana quillwort (depending on the species in question) should survey just prior to stream work. A survey proposal and results should be submitted to the USFWS for review prior to conducting the survey and in-stream work. Contact the USFWS or Louisiana Natural Heritage Program if assistance is needed to conduct surveys. Based on the USFWS review, in-stream work may proceed if the stream work (e.g., crossing) does not degrade stream hydrology or long-term water quality.

C = These practices may adversely affect listed aquatic species. Contact the State Wildlife Biologist for NRCS to determine if coordination/consultation with USFWS is required whenever these practices will be implemented within or near rivers and streams that may contain listed aquatic species.

Y1 = These practices are beneficial to listed terrestrial species when all of the following apply: (1) all NLAA criteria applicable to the specific practice for the identified species are followed; (2) the identified species habitat is enhanced, created, restored or protected

by plantings or other modifications of the site; and (3) the listed terrestrial species may occur near or at the installation site.

Y2 = These practices enhance, create, restore or protect listed aquatic species habitat by doing 1 or more of the following: (1) they ultimately reduce contaminants, nutrients, sediments and water velocity released into a river or stream; (2) they reduce water temperature of a river or stream by restoring or improving the riparian buffer; (3) they reduce the amount of water withdrawn from a river or stream; and/or (4) they restore natural in-stream habitat or hydrology to a river or stream. Therefore, these practices are beneficial to aquatic listed species when all NLAA criteria applicable to the specific practice are followed and the listed aquatic species may occur adjacent to or downstream of the installation site.

Candidate Species

Candidate species are plant and animal taxa that have been considered for possible addition to the List of Endangered and Threatened Species. These are taxa for which the U.S. Fish and Wildlife Service has on file sufficient information on 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 (61 FR 7596-7613). Consequently, Section 7 of the ESA does not apply.

NRCS has evaluated potential impacts to the only candidate species, Louisiana pine snake (*Pituophis ruthveni*), in Louisiana. Practices that are beneficial (B) and that are not likely to negatively impact (NLNI) Louisiana pine snake have been identified. The symbol "Y" under the beneficial sub-column indicates when and why certain practices are beneficial to pine snake. Criteria that NRCS may voluntarily use to reduce negative impacts to the pine snake have also been identified for each practice, if needed. As with the matrix for federally listed species, the criteria for pine snake are represented by a numbered superscript after the pine snake's criteria symbol "L". A practice may negatively impact Louisiana pine snake when pine snake criteria are associated with a practice and those criteria cannot be met when implementing the practice.

Many practices listed will be implemented only on active cropland, active pastureland or other areas lacking pine snake habitat. Therefore, they would have no impact on that species. NRCS has committed to use its programs to conserve, restore and minimize negative impacts to Louisiana pine snake where feasible to help preclude the need to list this species.

Conservation Practices	Louisiana Pine Snake	
	NLNI	B
Access Control	---	Y
Access Road	L ^{1,2}	---
Alley Cropping	---	---
Animal Mortality Facility	---	---
Animal Trails and Walkways	---	---
Aquaculture Ponds	---	---

Conservation Practices	Louisiana Pine Snake	
	NLNI	B
Atmospheric Resource Quality Management	L ^{1,2}	---
Bedding	---	---
Brush Management	L ^{1,2}	Y
Channel Bank Vegetation	---	---
Channel Stabilization	L ¹	---
Clearing and Snagging	L ¹	---
Closure of Waste Impoundment	---	---
Composting Facility	---	---
Conservation Cover	L ¹	Y
Conservation Crop Rotation	---	---
Constructed Wetland	---	---
Contour Buffer Strips	---	---
Contour Farming	---	---
Contour Orchard and Other Fruit Area	---	---
Contour Stripcropping	---	---
Cover Crop	---	---
Critical Area Planting	L ¹	Y
Dam, Floodwater Retarding	L ^{1,2}	---
Dam, Diversion	L ^{1,2}	---
Deep Tillage	L ¹	---
Dike	L ¹	---
Diversion	L ¹	---
Drainage Water Management	---	---
Dry Hydrant	L ¹	---
Early Successional Habitat Development/Management	L ¹	---
Fence	L ¹	Y
Field Border	L ¹	---
Filter Strip	L ¹	---
Firebreak	L ^{1,2}	Y
Fishpond Management	---	---
Forage and Biomass Planting	---	---
Forage Harvest Management	---	---
Forest Stand Improvement	L ^{1,2}	Y
Forest Trails and Landings	L ^{1,2}	---
Grade Stabilization Structure	L ¹	---
Grassed Waterway	---	---
Grazing Land Mechanical Treatment	---	---
Heavy Use Area Protection	---	---
Hedgerow Planting	L ¹	Y
Hillside Ditch	L ^{1,2}	---
Irrigation Canal or Lateral	---	---
Irrigation Field Ditch	---	---
Irrigation Land Leveling	---	---
Irrigation Regulating Reservoir	---	---
Irrigation Storage Reservoir	---	---
Irrigation System, Microirrigation	---	---
Irrigation System, Sprinkler	---	---
Irrigation System, Surface and Subsurface	---	---
Irrigation System, Tailwater Recovery	---	---
Irrigation Water Conveyance, Ditch and Canal Lining, Flexible	---	---

Conservation Practices	Louisiana Pine Snake	
	NLNI	B
Membrane		
Irrigation Water Conveyance, Ditch and Canal Lining, Plain Concrete	---	---
Irrigation Water Conveyance, Pipeline, Aluminum Tubing	---	---
Irrigation Water Conveyance, Pipeline, Asbestos-Cement	---	---
Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic	---	---
Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic	---	---
Irrigation Water Conveyance, Pipeline, Nonreinforced Concrete	---	---
Irrigation Water Conveyance, Pipeline, Reinforced Plastic Mortar	---	---
Irrigation Water Conveyance, Pipeline, Rigid Gated Pipeline	---	---
Irrigation Water Conveyance, Pipeline, Steel	---	---
Irrigation Water Management	---	---
Land Clearing	L ^{1,2}	---
Land Reclamation, Abandoned Mined Land	---	Y
Land Reclamation, Currently Mined Land	---	Y
Land Smoothing	---	---
Lined Waterway or Outlet	---	---
Livestock Shade Structure	---	---
Manure Transfer	---	---
Mulching	L ¹	---
Nutrient Management	---	---
Obstruction Removal	L ^{1,2}	---
Open Channel	L ^{1,2}	---
Pest Management	---	---
Pipeline	---	---
Pond	L ^{1,2}	---
Pond Sealing or Lining, Bentonite Sealant	---	---
Pond Sealing or Lining, Compacted Clay Treatment	---	---
Pond Sealing or Lining, Flexible Membrane	---	---
Pond Sealing or Lining, Soil Dispersant	---	---
Precision Land Forming	---	---
Prescribed Burning	---	Y
Prescribed Forestry	L ^{1,2}	Y
Prescribed Grazing	---	---
Pumping Plant for Water Control	---	---
Range Planting	---	---
Recreation Area Improvement	L ^{1,2}	---
Recreation Land Grading and Shaping	L ^{1,2}	---
Recreation Trail and Walkway	L ^{1,2}	---
Residue and Tillage Management, Mulch Till	---	---
Residue and Tillage Management, No-Till/Strip Till/Direct Seed	---	---
Residue and Tillage Management, Ridge Till	---	---
Residue Management, Seasonal	---	---
Restoration and Management of Rare and Declining Habitats	L ¹	Y
Riparian Forest Buffer	L ¹	Y

Conservation Practices	Louisiana Pine Snake	
	NLNI	B
Riparian Herbaceous Cover	---	---
Roof Runoff Structure	---	---
Row Arrangement	---	---
Runoff Management System	---	---
Seasonal High Tunnel System for Crops	---	---
Sediment Basin	L ¹	---
Shallow Water Development and Management	---	---
Silvopasture Establishment	L ^{1,2}	Y
Spoil Spreading	L ^{1,2}	---
Spring Development	L ^{1,2}	---
Stream Crossing	---	---
Stream Habitat Improvement and Management	L ¹	---
Streambank and Shoreline Protection	L ¹	---
Stripcropping	---	---
Structure for Water Control	---	---
Surface Drainage, Field Ditch	---	---
Surface Drainage, Main or Lateral	---	---
Terrace	---	---
Tree/Shrub Establishment	L ^{1,2}	Y
Tree/Shrub Pruning	L ¹	Y
Tree/Shrub Site Preparation	L ^{1,2}	---
Upland Wildlife Habitat Management	L ¹	Y
Vegetative Barrier	L ¹	---
Waste Storage Facility	---	---
Waste Treatment Lagoon	---	---
Waste Utilization	L ¹	---
Water and Sediment Control Basin	L ¹	---
Water Well	L ¹	---
Watering Facility	---	---
Well Decommissioning	L ¹	---
Wetland Creation	---	---
Wetland Enhancement	---	---
Wetland Restoration	---	---
Wetland Wildlife Habitat Management	---	---

Louisiana Pine Snake Determination and Criteria Definitions

L¹ = Heavy equipment (including mowers) should stay at least 25 ft. from gopher burrow systems. A survey for gopher burrow systems may be needed.

L² = Pine snake habitat should not be permanently converted, removed or degraded by any means (e.g., clearing, trampling, herbiciding, siltation, flooding) within 1200 ft. of areas known to be occupied by pine snakes. Clearing of occupied pine snake habitat should be minimized and restored as soon as feasible when such clearing is temporary. Locate known pine snake areas. If assistance is needed, contact the USFWS or Louisiana Natural Heritage Program. Avoid converting, removing or degrading potential pine snake habitat (e.g., suitable habitat containing gopher burrows but the occurrence of pine snakes is unknown) as much as possible. Scrub-shrub habitat may be permanently or

temporarily removed without adversely impacting pine snakes. A survey for gopher burrow systems may be needed.

Y = These practices are beneficial to the pine snake when all of the following apply: (1) all NLNI criteria applicable to the specific practice for the pine snake are followed; (2) pine snake habitat is enhanced, created, restored or protected by plantings or other modifications of the site; and (3) pine snake may occur near or at the installation site.