

MISSISSIPPI NRCS CONSERVATION PRACTICE EFFECTS ON THREATENED, ENDANGERED, AND CANDIDATE SPECIES

Updated November 21, 2019

Through collaboration with the U.S. Fish and Wildlife Service (FWS), this programmatic consultation has been developed for Federally-listed and candidate species that could be encountered during Natural Resources Conservation Service (NRCS) planning and other non-project activities. This document identifies the potential effect of all conservation practices utilized in Mississippi by the NRCS in habitats identified as potentially occupied by Federally-listed or candidate species.

Effects Determination

NRCS, through collaboration with the FWS, has determined that the conservation practices listed below in the consultation matrix will have no effect on nine federally listed or candidate species and their critical habitats because these practices are not used in areas where the following species or critical habitat occur: interior least tern, red knot, piping plover, Eastern black rail, green sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, and West Indian manatee. Therefore, these species are not included in the matrix.

Installation and/or management of conservation practices "may affect, but are not likely to adversely affect" the wood stork, a threatened species that can be found in Mississippi during the non-breeding season. Based on the fact that non-breeding adults would be expected to avoid the project area during construction, it is unlikely that this species would be adversely impacted by the conservation actions.

In addition, the Louisiana black bear was removed from the Lists of Threatened and Endangered Wildlife under the Endangered Species Act on March 10, 2016 due to recovery. Although no longer federally protected, the black bear remains protected under Mississippi statutes. Therefore, we have added the black bear and recommended minimization measures to the matrix.

As part of the determination process, NRCS staff will have a FWS-provided list of threatened and endangered species by county, an ESRI compatible GIS file that contains listed species by 12-digit Hydrologic Unit Code (HUC), and habitat descriptions for each species. A determination of "no effect" may be made for a practice when it is implemented in a county or 12-digit HUC lacking listed species or at a site that is not within or adjacent to any listed species habitat or upstream of aquatic listed species. When a practice would be implemented within or adjacent to any listed species habitat or upstream of aquatic listed species, NRCS staff should use information in the following matrix to assist with their determination.

All listed conservation practices conforming to the Environmental Quality Incentives Program, Conservation Stewardship Program, Agricultural Conservation Easement Program (including compatible use authorizations), Healthy Forests Reserve Program, and the Regional Conservation Partnership Program standards are covered by this programmatic consultation. NRCS should consult with FWS on a case-by-case basis when practices will not conform to the prescribed standards.

Please note that the FWS provided a biological opinion and conference report/opinion in 2012 that evaluated the adverse, benign, and beneficial effects and consequences of NRCS's Working Lands for Wildlife Program for the gopher tortoise (WLFW-GT). Therefore, that biological opinion (and any future revisions) and the effects determinations for the conservation practices identified with the WLFW-GT supersede those listed in this programmatic consultation for gopher tortoise when those practices are implemented for the overall conservation and restoration of gopher tortoise habitat.

Matrix Description

This matrix presents all conservation practices considered during the programmatic consultation (ordered numerically) and the potential affects (if any) to federally listed species and any minimization criteria needed for each practice to avoid potential adverse effects to listed species. The matrix lumps species together based on habitat similarities or when a minimization criterion is the same for numerous species. See Table 1.

If a conservation practice has a "---" in the sub-column under a species column list, then NRCS and FWS have determined this practice will have no effect on this species or that the practice will be completely beneficial to the species. If a sub-column has a criteria symbol, then NRCS will need to adopt one or more (as needed) of the protective measures described under the criteria symbol below or contact the NRCS area and/or state biologist point of contact (POC) if the practice will adversely impact suitable habitat. The NRCS POC will coordinate with FWS before a final effect's determination is made. Note that coordinating with the FWS does not necessarily mean the practice cannot be installed; in fact, additional review and documentation with the FWS may be sufficient.

Table 1. Species identified by columns in the matrix are as follows.

Column Name	Species	Criteria Symbol
Aquatic Species	Alabama moccasinshell, Alabama red-bellied turtle, Bayou darter, Black clubshell, Cumberlandian combshell, Fat pocketbook, Gulf sturgeon, Heavy pigtoe, Inflated heelsplitter, Louisiana quillwort, Orange-nacre mucket, Ovate clubshell, Oyster mussel, Pallid sturgeon, Pearl darter, Rabbitsfoot, Ringed map turtle, Sheepsnose, Slabside pearlymussel, Snail darter, Snuffbox, Southern clubshell, Southern combshell, and Yellow-blotched map turtle	AQ1,AQ2, AQ3
Birds	Mississippi sandhill crane	MSC
	Red-cockaded woodpecker	RCW
Insects	Mitchell's satyr butterfly	MSB
Longleaf Pine Herpetofauna	Black pinesnake	BPS
	Dusky gopher frog	DGF
	Gopher tortoise	GT1,GT2
Mammals	Gray, Indiana, and Northern long-eared bats	Bat1,Bat2,Bat3
	Louisiana black bear	LBB
Plants	Pondberry	PondB
	Price's potato bean	PPB
	White fringeless orchard	WFO
	Whorled sunflower	WSF

Avoidance/Minimization Criteria

AQ1 – Contact NRCS POC if installation and/or management of conservation practice will occur within 50 feet of a stream within a 12-digit HUC containing aquatic listed species, and one or more, as needed, of the following protective measures cannot be implemented. Protective measures when working near suitable habitat for listed aquatic species includes: no mechanized clearing within 50 feet of streams; installing BMP's such as vegetated buffers to prevent erosion and sedimentation into streams; fencing livestock out of streams; and minimizing stream crossings associated with forest trails and landings Conservation Practice Code (P.C.) 655.

AQ2 – Contact NRCS POC if instream work (e.g. snagging, channel realignment, bank armoring, dams, bridge pilings, culverts) is proposed within a 12-digit HUC with listed aquatic species. Protective measures include using appropriate BMP's to prevent erosion and sedimentation into streams; designing stream crossings to ensure that the natural flow and hydrology of the stream is maintained year-round; and preventing barriers to fish and other aquatic organism passage associated with instream work.

AQ3 – Contact NRCS POC if pesticides will be used within 100 feet of a stream (or 200 feet for aerial pesticide applications) within a 12-digit HUC containing aquatic listed species, and one or more, if needed, of the following protective measures cannot be implemented. Protective measures include using spot treatment techniques (e.g. hack and squirt, basal bark, cut stump and direct foliar spray), using selective herbicides that maintain native grasses, avoiding pesticide drift into non targeted area by not spraying when wind speeds are over 10 mph, and avoiding runoff into non-target streams by applying during dry weather when rainfall is not expected within 24 hours. WINPEST evaluations will be conducted to identify measures to prevent polluting surface and ground waters or affecting non-target species.

Bat1 – No tree removal (i.e., trees over 3 inch diameter at breast height) during the summer roosting season (i.e. April 15-August 31) for projects within 150 feet of a known NLEB summer roost site. No tree removal during the summer roosting season for all projects within the IBAT summer roosting range of MS. See the GIS HUC file for 12-digit HUCs with known NLEB roosts or the IBAT summer roosting range. Contact NRCS POC if trees must be removed during the summer roosting season.

Bat2 – Include bat mitigation efforts (bat gates) for the closing of natural caves and/or abandoned mines that have evidence of bat use. Avoid disturbance (e.g. use of machinery, building of roads, and application of pesticides) of foraging areas near known bat caves by adhering to an activity buffer distance of 200 foot radius from the cave entrance. Maintain snags within ½ mile radius of cave entrances. See the GIS HUC file for 12-digit HUCs with known IBAT/NLEB caves. P.C. 500 should avoid impacts to bats hibernating or roosting in old buildings.

Bat3 – Conduct prescribed burns and application of pesticides outside of the summer roosting season (i.e., April 15-August 31) for projects within 2.5 miles of a known IBAT summer roost site or within 150 feet of a known NLEB summer roost site. See the GIS HUC file for 12-digit HUCs with known roosts. Spot treatment is preferred over aerial application.

BPS – Contact NRCS POC if longleaf pine forests will be permanently converted or degraded by any means (e.g. clearing, flooding, stump removal) within a 12-digit HUC known or potentially occupied by black pinesnakes. Forest stand improvements and other practices designed to improve longleaf forest conditions are acceptable (e.g. burning, thinning, herbicides).

DGF – Contact NRCS POC if installation and/or management of conservation practice will adversely impact ephemeral ponds and adjacent upland longleaf pine habitat within a 12-digit HUC containing dusky gopher frog critical habitat and one or more, as needed, of the following protective measures cannot be implemented. Protective measures include no clearing, draining, ditching, creation of firebreaks, non-selective herbicide use, and/or land mechanical treatment within 50 feet of ephemeral ponds. Adjacent longleaf pine habitat should not be permanently converted or degraded by any means (e.g. clearing, flooding, stump removal); however, forest stand improvements and other practices designed to improve longleaf forest conditions are acceptable (e.g. burning, thinning, herbicides).

GT1 – Heavy equipment (including mowers) will stay at least 4 meters (13 feet) from known gopher tortoise burrows. Contact POC if assistance is needed to conduct gopher tortoise surveys. This applies to all practices where heavy equipment is used. Heavy equipment is defined as agricultural tractors, crawler loaders, crawler dozer, backhoe/loader, front end loader, scraper pan, motor grader, skid steer, forklift (P.I.T.), hydraulic excavator, and specialty tracked equipment. Felling of trees and brush, cutting by hand, hack and squirt, backpack application, or use of herbicide pellets is allowed within this buffer.

GT2 – Fencing should be installed so as to allow for the safe passage of gopher tortoises. When fencing for small ruminants (e.g., goats), avoid fencing in tortoise burrows.

LBB – Actual, candidate, or potential den trees (any tree with DBH \geq 36 inches), regardless of the species or proximity to water, should not be removed or damaged during practice installation or maintenance. Heavy equipment should maintain a minimum 50 foot buffer from the trunk or a 10 foot buffer around the tree starting from the farthest extent of its canopy, whichever is greater.

MSB – Contact NRCS POC if installation and/or management of conservation practice will occur within 50 feet of herbaceous-shrub wetlands (typically influenced by beaver activities) within a 12-digit HUC containing potential Mitchell's satyr butterfly habitat, and one or more, as needed, of the following protective measures cannot be implemented. Protective measures include no clearing, filling, permanent inundation, or insecticide use within herbaceous shrub wetlands and adopting BMP's such as vegetated buffers to prevent sedimentation into wetlands.

MSC – Contact NRCS POC if installation and/or management of conservation practice will affect MS Sandhill Crane behavior (e.g. nesting, roosting, foraging) and/or adversely alter fire-maintained pine savannah habitat within a 12-digit HUC containing potential MSC habitat (generally south of Latimer, Vancleave, and Helena, MS). Forest stand improvements and other practices designed to improve pine savannah conditions are acceptable (e.g. burning, thinning, herbicides).

PondB – Contact NRCS POC if installation and/or management of conservation practice will permanently convert (e.g. clearing, filling, permanent inundation) bottomland hardwood forest habitat within a 12-digit HUC containing potential pondberry habitat. Forest stand improvements and other practices designed to improve bottomland hardwood forest conditions are acceptable (i.e. WRP hardwood thinning of <20 year old planted stands) within potential suitable pondberry habitat where populations are not currently present.

PPB – Contact NRCS POC if installation and/or management of conservation practice will adversely affect (i.e. clear, thin, land mechanical treatment, herbicide use) suitable Price's potato bean habitat (i.e. forest openings in mixed hardwood stands on slopes or bluffs of alkaline soils that grade into creek or stream bottoms) within a 12-digit HUC containing potential PPB habitat. Kudzu control using herbicides or mechanical treatment is acceptable (beneficial effect) within potential suitable PPB habitat where populations are not currently present.

RCW – Contact NRCS POC if installation and/or management of conservation practice will convert, remove, damage, or degrade foraging habitat (i.e. southern yellow pine tree species greater than or equal to 10 inch DBH in a pine-dominated stand) or potential cavity trees (i.e. pine trees 60 years old or older) within 0.5 mile of an active cluster. See GIS HUC file for 12-digit HUCs with known or potential RCW clusters.

WFO – Contact NRCS POC if installation and/or management of conservation practice will permanently remove suitable white fringeless orchid habitat (i.e., spring heads, pools, and runs; and wet, boggy areas at the heads of streams and on sloping areas moist by groundwater seeping to the surface) in a 12-digit HUC containing WFO.

WSF - Contact NRCS POC if installation and/or management of conservation practice will permanently remove suitable whorled sunflower habitat (i.e. moist soils in open, grassy areas, such as wet prairies, road and utility rights-of-way, and along margins of agricultural fields, with little to no overstory canopy, often associated with floodplains of small streams) in a 12-digit HUC containing WSF.

Table 2. NRCS Conservation Practice Effects on Federally Threatened & Endangered Species

Code	Conservation Practice	Aquatic Species (21)	Birds (2)	Insects (1)	Longleaf Herps (3)	Mammals (4)	Plants (3)
201	Edge of Field Water Quality Monitoring – Data Collection and Evaluation	---	---	---	---	---	---
202	Edge of Field Water Quality Monitoring – System Installation	AQ1	---	---	GT1	---	PPB POND B WSF
216	Soil Testing	---	---	---	---	---	---
309	Agrichemical Handling Facility	AQ1	---	---	---	---	---
310	Bedding	AQ1	MSC	MSB	GT1 BPS DGF	---	PPB Pond B WFO WSF
313	Waste Storage Facility	AQ1	---	---	GT1	---	---
314	Brush Management	AQ1 AQ3	---	MSB	GT1 BPS DGF	---	PPB Pond B WFO WSF
315	Herbaceous Weed Control	AQ1 AQ3	---	MSB	GT1 BPS DGF	---	PPB Pond B WFO WSF
316	Animal Mortality Facility	AQ1	---	---	GT1	---	---
317	Composting Facility	AQ1	---	---	GT1	---	---
319	On-Farm Secondary Containment Facility	AQ1	---	---	GT1	---	---
320	Irrigation Canal or Lateral	AQ1 AQ2	---	---	---	---	Pond B
324	Deep Tillage	AQ1	---	---	GT1	---	---
325	High Tunnel System	AQ1	---	---	GT1	---	---
326	Clearing and Snagging	AQ1 AQ2	---	---	---	---	WFO WSF
327	Conservation Cover	---	---	---	GT1	---	---
328	Conservation Crop Rotation	---	---	---	---	---	---
329	Residue and Tillage Management, No-Till/Strip Till/Direct Seed (Farm only)	---	---	---	---	---	---
330	Contour Farming	---	---	---	---	---	---

Code	Conservation Practice	Aquatic Species (21)	Birds (2)	Insects (1)	Longleaf Herps (3)	Mammals (4)	Plants (3)
331	Contour Orchard and Other Perennial Crops	---	---	---	---	---	---
332	Contour Buffer Strips	---	---	---	---	---	---
333	Amending Soil Properties with Gypsum Products	AQ1	---	---	---	---	---
338	Prescribed Burning	---	---	---	---	Bat3	---
340	Cover Crop	---	---	---	---	---	---
342	Critical Area Planting	AQ1	---	---	GT1	---	PPB WSF
345	Residue and Tillage Management, Reduced Till	---	---	---	---	---	---
348	Dam, Diversion	AQ1 AQ2	---	---	---	---	PondB
350	Sediment Basin	AQ1	---	---	GT1	---	PPB WFO WSF
351	Well Decommissioning	---	---	---	---	---	---
356	Dike	AQ1	---	---	---	---	PondB
359	Waste Treatment Lagoon	AQ1	---	---	GT1	---	---
360	Waste Facility Closure	---	---	---	---	---	---
362	Diversion	AQ1	---	---	---	---	PondB
368	Emergency Animal Mortality Management	AQ1	---	---	GT1	---	---
378	Pond	AQ1 AQ2	---	---	GT1 DGF	Bat1	PondB WFO WSF
381	Silvopasture Establishment	---	MSC	---	GT1 BPS DGF	---	---
382	Fence	---	---	---	GT1 GT2	---	---
383	Fuel Break	AQ1	---	---	GT1 DGF	Bat1	---
386	Field Border	---	---	---	GT1	---	---
388	Irrigation Field Ditch	AQ1 AQ2	---	---	---	---	PondB
390	Riparian Herbaceous Cover	---	---	---	---	---	---
391	Riparian Forest Buffer	---	---	---	---	---	---
393	Filter Strip	---	---	---	---	---	---

Code	Conservation Practice	Aquatic Species (21)	Birds (2)	Insects (1)	Longleaf Herps (3)	Mammals (4)	Plants (3)
394	Firebreak	AQ1	---	---	GT1 DGF	Bat1	---
395	Stream Habitat Improvement and Management	AQ1 AQ2	---	---	---	---	WFO WSF
396	Aquatic Organism Passage	AQ1 AQ2	---	---	---	---	WFO WSF
397	Aquaculture Ponds	AQ1	MSC	---	DGF	Bat1	PondB WFO WSF
399	Fishpond Management	AQ3	---	---	---	---	---
402	Dam	AQ1 AQ2	---	MSB	---	---	PPB PondB WFO WSF
410	Grade Stabilization Structure	AQ1	---	---	GT1	---	PPB PondB
412	Grassed Waterway	---	---	---	---	---	---
420	Wildlife Plantings	---	---	---	GT1	---	---
422	Hedgerow Planting	---	---	---	GT1	---	---
428	Irrigation Ditch Lining	AQ1 AQ2	---	---	---	---	---
430	Irrigation Pipeline	AQ1 AQ2	---	---	---	---	PondB
432	Dry Hydrant	AQ1	MSC	---	GT1 DGF	---	WFO WSF
436	Irrigation Reservoir	AQ1	---	---	---	Bat1	PondB
441	Irrigation System, Microirrigation	AQ1	---	---	---	---	---
442	Sprinkler System	AQ1	---	---	---	---	---
443	Irrigation System, Surface and Subsurface	AQ1	---	---	---	---	---
447	Irrigation System, Tailwater Recovery	AQ1	---	---	---	Bat1 LBB	PondB
449	Irrigation Water Management	---	---	---	---	---	---
450	Anionic Polyacrylamide (PAM) Application	AQ1	---	---	---	---	---
460	Land Clearing	AQ1	MSC RCW	MSB	GT1 BPS DGF	Bat1 LBB	PPB PondB WFO WSF
462	Precision Land Forming	AQ1	---	---	---	---	PondB
464	Irrigation Land Leveling	AQ1	---	---	---	---	PondB

Code	Conservation Practice	Aquatic Species (21)	Birds (2)	Insects (1)	Longleaf Herps (3)	Mammals (4)	Plants (3)
466	Land Smoothing	AQ1	---	---	GT1	---	PondB
468	Lined Waterway or Outlet	AQ1 AQ2	---	---	---	---	---
472	Access Control	---	---	---	GT1	Bat2	---
484	Mulching	AQ1	---	---	---	---	---
490	Tree/Shrub Site Preparation	AQ1 AQ3	MSC	---	GT1 BPS DGF	---	PPB PondB WFO WSF
500	Obstruction Removal	AQ1	---	---	GT1	Bat2	---
511	Forage Harvest Management	---	---	---	GT1	---	---
512	Forage and Biomass Planting	---	---	---	GT1	---	---
516	Livestock Pipeline	AQ1	---	---	GT1 DGF	---	WFO WSF
528	Prescribed Grazing	---	---	---	---	---	---
533	Pumping Plant	AQ1	---	---	---	---	---
543	Land Reclamation, Abandoned Mined Land	AQ1	---	---	GT1	---	---
544	Land Reclamation, Currently Mined Land	AQ1	---	---	GT1	---	---
548	Grazing Land Mechanical Treatment	AQ1	---	MSB	GT1 BPS DGF	Bat1	PPB WFO WSF
554	Drainage Water Management	---	---	---	---	---	---
557	Row Arrangement	---	---	---	---	---	---
558	Rooftop Runoff Management	---	---	---	---	---	---
560	Access Road	AQ1	MSC RCW	MSB	GT1 BPS DGF	Bat1 LBB	PPB PondB WFO WSF
561	Heavy Use Area Protection	AQ1	---	---	GT1 BPS DGF	---	WFO WSF
572	Spoil Spreading	AQ1	---	---	GT1 BPS DGF	---	PPB PondB WFO WSF
574	Spring Development	AQ1 AQ2	---	MSB	---	---	WFO WSF
576	Livestock Shelter Structure	AQ1	---	---	GT1 DGF	---	WFO WSF
578	Stream Crossing	AQ1 AQ2	---	---	---	---	---

Code	Conservation Practice	Aquatic Species (21)	Birds (2)	Insects (1)	Longleaf Herps (3)	Mammals (4)	Plants (3)
580	Streambank and Shoreline Protection	AQ1 AQ2	---	---	---	---	PPB
582	Open Channel	AQ2	---	---	---	---	---
584	Channel Bed Stabilization	AQ2	---	---	---	---	---
585	Stripcropping	---	---	---	---	---	---
587	Structure for Water Control	AQ1 AQ2	---	MSB	DGF	---	PondB WFO WSF
590	Nutrient Management	AQ1	---	MSB	---	---	WFO WSF
591	Amendments for Treatment of Agricultural Waste	---	---	---	---	---	---
595	Integrated Pest Management (IPM)	AQ1 AQ3	MSC RCW	MSB	GT1 BPS DGF	Bat3	PPB PondB WFO WSF
600	Terrace	AQ1	---	---	---	---	---
601	Vegetative Barrier	---	---	---	---	---	---
606	Subsurface Drain	AQ1	---	---	---	---	---
607	Surface Drainage, Field Ditch	AQ1 AQ2	---	---	---	---	---
608	Surface Drainage, Main or Lateral	AQ1 AQ2	---	---	---	---	---
612	Tree/Shrub Establishment	---	MSC	---	GT1	---	---
614	Watering Facility	AQ1	---	---	GT1 DGF	---	WFO WSF
620	Underground Outlet	AQ1 AQ2	---	---	---	---	---
629	Waste Treatment	AQ1	---	---	GT1	---	---
633	Waste Recycling	AQ1	---	---	GT1	---	---
634	Waste Transfer	AQ1	---	---	GT1 DGF	---	---
635	Vegetated Treatment Area	AQ1 AQ3	---	---	DGF	---	---
638	Water and Sediment Control Basin	AQ1	---	---	GT1	---	PPB WFO WSF
642	Water Well	AQ1	---	---	GT1 DGF	---	WFO WSF

Code	Conservation Practice	Aquatic Species (21)	Birds (2)	Insects (1)	Longleaf Herps (3)	Mammals (4)	Plants (3)
643	Restoration and Management of Rare and Declining Habitats	AQ1 AQ2 AQ3	MSC RCW	MSB	GT1 BPS DGF	Bat1 LBB	PPB PondB WFO WSF
644	Wetland Wildlife Habitat Management	AQ1 AQ3	MSC	MSB	DGF	Bat1 LBB	PondB WFO WSF
645	Upland Wildlife Habitat Management	AQ1 AQ3	MSC RCW	---	GT1 BPS DGF	Bat1 LBB	PPB
646	Shallow Water Development and Management	AQ1 AQ3	MSC	MSB	DGF	Bat1 LBB	PondB WFO WSF
647	Early Successional Habitat Development/ Management	AQ1 AQ3	MSC RCW	MSB	GT1 BPS DGF	Bat1 LBB	PPB PondB WFO WSF
649	Structures for Wildlife	AQ1 AQ2	RCW	---	---	Bat1	---
655	Forest Trails and Landings	AQ1	MSC RCW	MSB	GT1 BPS DGF	Bat1 LBB	PPB PondB WFO WSF
656	Constructed Wetland	AQ1	---	---	DGF	---	WFO WSF
657	Wetland Restoration	AQ1 AQ3	MSC	MSB	DGF	Bat1 LBB	PondB WFO WSF
658	Wetland Creation	AQ1 AQ3	MSC	MSB	DGF	Bat1 LBB	PondB WFO WSF
659	Wetland Enhancement	AQ1 AQ3	MSC	MSB	DGF	Bat1 LBB	PondB WFO WSF
660	Tree/Shrub Pruning	---	RCW	---	GT1	Bat1	---
666	Forest Stand Improvement	AQ1 AQ3	MSC RCW	MSB	GT1 BPS DGF	Bat1 LBB	PPB PondB WFO WSF