



United States Department of the Interior

FISH AND WILDLIFE SERVICE
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September 29, 2017

Kevin Norton
State Conservationist
USDA-NRCS
3737 Government St.
Alexandria, Louisiana 71302

Salvidor Salinas
State Conservationist
USDA-NRCS
101 South Main St.
Temple, Texas 76501

RE: Working Lands for Wildlife Program – Louisiana Pinesnake Project

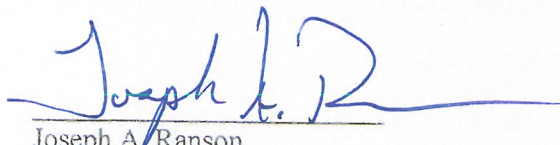
Dear Mr. Norton and Mr. Salinas,

Please reference your letter of August 4, 2017 (received by this office on August 7, 2017) which forwarded a draft combined biological assessment and conference opinion (collectively "the Opinion) regarding implementation of the Natural Resources Conservation Services' (NRCS) Working Lands for Wildlife Program for the proposed as threatened Louisiana pinesnake (*Pituophis ruthveni*) on eligible private lands in the states of Louisiana and Texas. Beginning in January 2017, NRCS and United States Fish and Wildlife Service (Service) representatives from Louisiana and Texas worked together to prepare that document, following a streamlined consultation process used for the Working Lands for Wildlife Gopher Tortoise project. The Opinion is based on information provided by NRCS, jointly developed conservation measures, and information in Service files. The Service has reviewed the information provided and offers the following comments in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

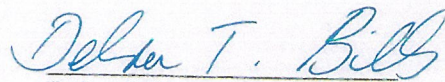
Since receiving your letter, Service personnel have continued to informally coordinate and consult with NRCS representatives to further evaluate and document the adverse, benign, and beneficial effects of the Working Lands for Wildlife Program on the Louisiana pinesnake. This letter transmits the final version of the Opinion, which provides the Service's concurrence with your determination that the level of anticipated take is not likely to result in jeopardy to the Louisiana pinesnake. The attached final Opinion may be converted to a biological opinion if the pinesnake is listed or critical habitat is designated. Any incidental take associated with that biological opinion will be valid for the duration of a client's agreement with NRCS and up to 30 years thereafter as long as participants meet certain requirements (see attached Opinion).

We appreciate the opportunity to work with NRCS on the proposed project, which we anticipate will increase and improve habitat and the status for the Louisiana pinesnake on private property. We look forward to working with NRCS in the future on this project and other projects that benefit listed and other at-risk species. Should you have further questions, please contact Robert Smith (337/291-3134) of this office.

Sincerely,

A handwritten signature in blue ink that reads "Joseph A. Ranson". The signature is fluid and cursive, with a long horizontal line extending to the right.

Joseph A. Ranson
Field Supervisor
Louisiana Ecological Services

A handwritten signature in blue ink that reads "Debra T. Bills". The signature is cursive and somewhat stylized.

Debra Bills
Field Supervisor
Arlington, Texas Ecological Services

Biological Assessment and Conference Opinion for the Working Lands for Wildlife Program – Louisiana Pinesnake

This document transmits the U.S. Natural Resource Conservation Service's Biological Assessment and the U.S. Fish and Wildlife Service's Conference Opinion (Opinion) regarding the implementation of the NRCS Working Lands for Wildlife Program for the proposed as threatened Louisiana pinesnake (LPS) (*Pituophis ruthveni*) on eligible private lands in the states of Louisiana and Texas. Our review is based on information provided by the Natural Resources Conservation Service (NRCS), jointly developed conservation measures with the United States Fish and Wildlife Service (Service), and information in NRCS and Service files.

INTRODUCTION

The NRCS and the Service have jointly agreed to a streamlined consultation process whereby a programmatic biological assessment and conference opinion are combined and jointly developed. Therefore, this Opinion serves both purposes and functions as stated above. Specifically, this Opinion evaluates the adverse, benign, and beneficial effects and consequences of the Working Lands for Wildlife Program for the LPS (WLFW-LPS) and its components (as described in the scope of the action section below) on the LPS. This opinion has been prepared pursuant to and complies with section 7 of the Endangered Species Act (ESA) of 1973 (the ESA), as amended (16 United States Code [U.S.C.] 1531 et seq.) and 50 Code of Federal Regulations [CFR] §402 of our interagency regulations governing section 7 of the ESA.

Section 7(a)(2) of the ESA requires federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any federally listed species nor destroy or adversely modify critical habitat. The Service and the federal agency or its designated representative implement section 7 of the ESA by consulting or conferring on any federal action that may affect federally listed species or proposed threatened and endangered species and/or designated or proposed critical habitat.

Use of the conference procedures is only required when a Federal agency proposes an activity that is likely to jeopardize the continued existence of a species that has been proposed for listing under the ESA or the proposed activity is likely to destroy or adversely modify proposed critical habitat (see 50 CFR 402.10). The conference process is designed to assist the Federal agency in identifying and resolving potential conflicts at an early stage in the planning process. During the conference, the U.S. Fish & Wildlife Service (Service) may provide advisory recommendations on ways to minimize or avoid adverse effects. The conclusions reached during a conference and any recommendations are to be documented by the Service and provided to the action agency in a document whose style and magnitude is expected to vary based on the complexity of the conference (50 CFR 402.10(e)).

Chapter 6 of the Service's Consultation Handbook recommends the preparation of a "Conference Opinion" when a proposed Federal action may affect a proposed or candidate species but the action is not likely to jeopardize the continued existence of a proposed or candidate species. This Opinion contains the NRCS and Service's analysis of the expected adverse, benign, and

beneficial effects likely to result from implementation of the WLFW-LPS Program within the Action Area.

This Opinion evaluates the collective effects of implementing all aspects of the WLFW-LPS Program on the species and its habitat. Overall effective implementation of the NRCS conservation practices and their associated conservation measures described in this Opinion are anticipated to result in a positive population response of the species by reducing or eliminating potential adverse effects. However, implementing the conservation practice standards and associated conservation measures may also result in short-term adverse effects to individual snakes in order to secure long-term benefits to the species as a whole. This Opinion is based on the best available scientific and commercial data including meetings, electronic mail and telephone correspondence with NRCS officials, NRCS and Service files, pertinent scientific literature, noted hyperlinks, discussions with recognized species authorities, and other scientific sources. A complete administrative record of this consultation is on file in the Service's Ecological Services Office in Lafayette, Louisiana, and the NRCS's state office in Alexandria, Louisiana.

Management actions established through this WLFW-LPS program are anticipated to result in the restoration and protection of significant portions of the longleaf pine ecosystem of east Texas and west-central Louisiana, a habitat that has experienced substantial decline.

Commitments made through this program should benefit the LPS and many of the species that occur in the longleaf pine ecosystem of east Texas and west-central Louisiana. Potential effects to other threatened and endangered species and their associated critical habitat will be evaluated on an individual basis as required under Section 7 of the ESA.

CONSULTATION HISTORY

In mid-December of 2011, representatives from NRCS approached the Service with the concept of applying targeted Farm Bill dollars to eligible private landowners potentially interested in the recovery and conservation of listed, candidate or declining species of mutual interest.

Between December of 2011 and February of 2012, the NRCS and the Service held a series of informal conference calls and meetings to further refine the concept as identified above.

March 8, 2012, the Secretaries of Agriculture and Interior jointly, announced a collaborative partnership collectively known as the Working Lands for Wildlife project and identified seven species across the United States which would share approximately \$33 million dollars of NRCS' Wildlife Habitat Incentive Program allocation under the 2008 Farm Bill.

June 6, 2016, NRCS announced the expansion of the WLFW program (NB 300-16-23) and requested proposals to include additional species.

August 31, 2016, a proposal to include the LPS as a target species in the WLFW program was completed and submitted for implementation in fiscal year 2018.

January 20, 2017, the Service (David Castellanos, Richard Gooch, Robert Smith, and Jerry Ziewitz) and NRCS (Troy Mallach and Richard Williams) held a conference call to discuss the initiation of the Louisiana pinesnake WLFW consultation, similar to the gopher tortoise (*Gopherus polyphemus*)(GT) consultation, where a programmatic biological assessment and biological/conference opinion are combined and jointly developed.

March 1, 2017, the Service (Richard Gooch) and NRCS (Troy Mallach and John Pitre) held a conference call to discuss the WLFW-LPS consultation. It was agreed that Troy Mallach would develop a framework similar to the WLFW-GT consultation and send it to Richard Gooch for revision.

March 6, 2017, Troy Mallach (NRCS), David Castellanos and Robert Smith (Service) discussed the WLFW-LPS framework document that is being developed and the timeline.

April 6, 2017, an initial draft of the Biological Assessment/Conference Opinion was sent to the Service (Rick Gooch, David Castellanos, and Robert Smith) for initial review.

May 10, 2017, David Castellanos forwarded comments on the draft Biological Assessment/Conference Opinion from Robert Smith to NRCS.

May 16, 2017, Troy Mallach (NRCS) received comments from David Castellanos on the draft Biological Assessment/Conference Opinion.

May 17, 2017, Troy Mallach (NRCS) received comments from Russell Castro on the draft Biological Assessment/Conference Opinion.

May 17, 2017, David Castellanos forwarded comments on the draft Biological Assessment/Conference Opinion from Robert Allen (Service Texas) to NRCS.

June 14, 2017, Richard Williams and Troy Mallach (NRCS) met with David Castellanos and Robert Smith (Service) to discuss the comments received on the draft Biological Assessment/Conference Opinion and appropriate revisions and responses were planned.

June 21, 2017, Richard Williams and Troy Mallach (NRCS) met again with David Castellanos and Robert Smith (Service) to discuss the comments received on the draft Biological Assessment/Conference Opinion and appropriate revisions and responses were planned. Russell Castro joined us by teleconference.

July 14, 2017, Richard Williams and Troy Mallach (NRCS) met again with David Castellanos and Robert Smith (Service) to discuss the comments received on the draft Biological Assessment/Conference Opinion. Russell Castro joined us by teleconference.

August 4, 2017, the Service was provided a draft of the Biological Assessment/Conference Opinion to review.

August 7, 2017, NRCS provided the Service with a letter signed by NRCS State Conservationists in Louisiana and Texas regarding the most recent draft of the Biological Assessment/Conference Opinion.

September 7, 2017, NRCS met with the Service regarding additional FWS comments on the draft Biological Assessment/Conference Opinion.

September 29, 2017, the Service forwarded NRCS a final Biological Assessment/Conference Opinion with signed cover letter.

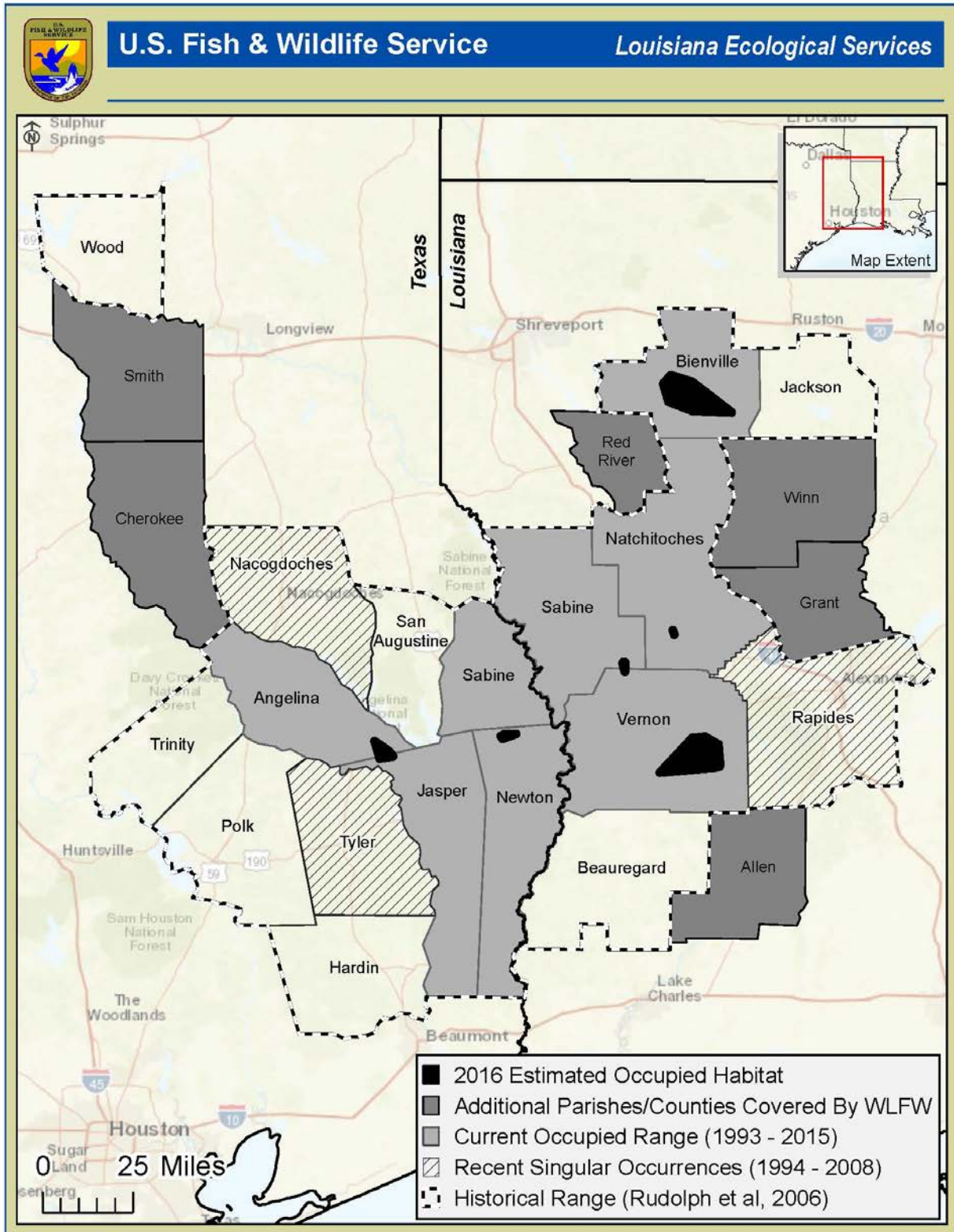
ACTION AREA

LPS are endemic to the westerly extent of the longleaf pine ecosystem that historically existed in Louisiana and Texas. LPS habitat consists of sandy, well-drained soils in open pine forest (especially longleaf-pine savanna) with a sparse midstory, and well-developed herbaceous ground cover dominated by grasses and forbs. These fire-climax park-like conditions are created and maintained by recurrent low-intensity ground fires that occur approximately on a 3 year return interval. In the absence of recurrent fire, suitable LPS habitat conditions are lost due to vegetative succession.

The Baird's pocket gopher (*Geomys breviceps*) (pocket gopher) occupies these fire-climax park-like habitats as well and serves as the primary prey for the LPS. Pocket gophers create the burrow systems in which LPS are most frequently found and up to 90 percent of radio-tagged snake relocations have been underground in pocket gopher burrow systems. In Louisiana, habitat selection by LPS seems to be determined by the abundance and distribution of pocket gophers and their burrow systems (Himes 1998, p. 41).

The historical range, locations of recent singular observances, and existing range (at the parish/county level) of the LPS is part of the action (focal) area (Map 1). Other parishes/counties (based on Service recommendations) that are immediately adjacent to or that connect the disjunct historical range of the LPS are also included in the WLFW program. Grant Parish in Louisiana is included because of recent releases of LPS in that area. Each state NRCS office has further refined the area through priority ranking criteria and with conservation assistance from the Service in each state. Refined maps follow the procedures outlined in Modeling Louisiana Pine Snake Habitat Use in Relation to Soils (Wagner et al. 2014). According to the Wagner Model, priority will be given to areas identified by hydrologic groups A and B (i.e., preferred and suitable soils). Those groups can be found using the NRCS Web Soil Survey (<https://websoilsurvey.nrcs.usda.gov/app/>) under the Soil Data Explorer - Soil Properties and Qualities - Soil Qualities and Features/Hydrologic Soil Group. An overview of that map is shown in Appendix IV. Applications will also be prioritized by NRCS based on their proximity to occupied habitat, recent singular occurrences, historical range, and other areas of the LPS.

Map 1. Action Area of Proposed Working Lands for Wildlife – Louisiana Pinesnake Program.



Map credit: USFWS Louisiana Ecological Services

DESCRIPTION OF THE PROPOSED ACTION

The action for the purposes of this Opinion includes the application of certain conservation practices incorporated into NRCS conservation plans and implemented by NRCS clients in the LPS Action Area that follow the planning process and the conservation measures as described in this opinion. Twenty-four conservation practice standards will be implemented by NRCS under the WLFW-LPS (Table 1). Practices implemented under the WLFW-LPS consist of:

1. The core conservation management practice of Upland Wildlife Habitat Management, which will be supplemented by two other core management practices, Early Successional Habitat Development/Management and Restoration and Management of Rare and Declining Habitats, for the benefit of LPS and its habitat;
2. Practices that facilitate the application of the core conservation management practices that, in themselves, may or may not be beneficial to LPS and its habitat; and
3. Practice-specific conservation measures that can avoid and minimize adverse effects of conservation practices to LPS and its habitat.

Table 1. NRCS Conservation Practices Evaluated in this Opinion

Practice Name & Number Designation	Type of Conservation Practice Standard
643 - Restoration & Management of Rare & Declining Habitats	Core Management Practice
645 - Upland Wildlife Habitat Management	Core Management Practice
647 - Early Successional Habitat Development & Management	Core Management Practice
314 - Brush Management	Facilitating Management Practice
315 - Herbaceous Weed Control	Facilitating Management Practice
327 - Conservation Cover	Facilitating Management Practice
338 - Prescribed burning	Facilitating Management Practice
381- Silvopasture	Facilitating Management Practice
394 - Fire Break	Facilitating Management Practice
490 - Tree/Shrub Site Preparation	Facilitating Management Practice
512 - Forage and Biomass Plantings	Facilitating Management Practice
528 - Prescribed Grazing	Facilitating Management Practice
550 - Range Planting	Facilitating Management Practice
612 - Tree/Shrub Establishment	Facilitating Management Practice
654 – Road/Trail/Landing Closure and Treatment	Facilitating Management Practice
655 - Forest Trails and Landings	Facilitating Management Practice
382 - Fence	Facilitating Management Practice
666 - Forest Stand Improvement	Facilitating Management Practice
342 - Critical Area Planting	Facilitating Management Practice
642 - Water Well	Facilitating Management Practice
614 - Watering Facility	Facilitating Management Practice
516 - Livestock Pipeline	Facilitating Management Practice
561 - Heavy Use Area Protection	Facilitating Management Practice

This Opinion evaluates the collective effects of implementing all aspects of WLFW-LPS on the LPS and its supporting habitat. The analysis focuses on identified conservation practice standards NRCS has chosen to implement for the WLFW-LPS. Table 1 lists those conservation practice standards evaluated in this opinion. Use of the conservation practices occurs in concert with NRCS' comprehensive conservation planning framework (Appendix I) and creates the circumstances by which potential adverse and/or beneficial effects to the LPS can be assessed. Therefore, the evaluation and conditioning of the identified conservation practice standards for WLFW-LPS is essential to achieve the expected conservation outcomes of the partnership and provide regulatory determinations on effects, provided NRCS and its clients remain in compliance and/or until the reinitiation clause is reached of any conference or biological opinion associated with the WLFW-LPS. NRCS anticipates that approximately 90% or more of the clients that will enroll in the WLFW – LPS will continue to implement these practices as part of their multi-year conservation plan after their initial contract with NRCS has expired. Most NRCS conservation plans (*e.g.*, a forest management plan) will recommend practices, such as Forest Stand Improvement, many years after the initial contract. Clients typically re-apply for financial and technical assistance from NRCS. Therefore, NRCS and the Service intend for this opinion to remain effective for the duration of each NRCS client agreement plus an additional 30 years.

WLFW Program

On March 8, 2012, the Secretaries of Agriculture and Interior jointly announced a collaborative partnership on private lands eligible to receive Farm Bill technical and financial assistance which is expected to achieve the following objectives: (i) restore populations of declining wildlife species; (ii) provide farmers, ranchers, and forest managers with regulatory certainty that conservation investments they make today help sustain their operations over the long term; (iii) strengthen and sustain rural economies by restoring and protecting the productive capacity of working lands. The partnership is collectively known as the Working Lands for Wildlife program and originally identified seven species across the United States which would share approximately \$33 million dollars of NRCS' Wildlife Habitat Incentive Program allocation for fiscal year 2012 under the 2008 Farm Bill. In 2016, the WLFW program was expanded to include additional declining wildlife species. The LPS is one of the additional species selected for the partnership.

The WLFW involves a five step process:

- Joint review and conditioning of NRCS conservation practices capable of benefiting the species and removing threats;
- Identification of priority target areas for habitat restoration and easement programs;
- Design of ranking criteria to deliver funding where it will do the most good;
- Development of a monitoring program to measure species and habitat outcomes; and
- Put in place innovative mechanisms and approaches that provide improved regulatory predictability to landowners.

The WLFW-LPS is a conservation initiative based upon a targeted conservation systems approach to implement specific conservation practices to manage and enhance the species while ensuring compatibility with the private landowners' expectations for their property. NRCS

sought the Service's assistance in determining what actions will result in avoiding or minimizing potential long-term adverse effects to the LPS and improve potential effectiveness of conservation practices that may result in range-wide benefits.

The implementation of the WLFW-LPS is integrated into the daily operations of NRCS' existing Farm Bill authorities. As part of the scope of the consultation, it is therefore important for the reader to understand the NRCS' existing Conservation Planning processes and component elements that NRCS will utilize to implement this Opinion in context with delivery of the WLFW-LPS. A description of the NRCS planning process is described in Appendix I.

The proposed action, the implementation of the WLFW-LPS, involves the following elements: (1) Trust and Credibility – NRCS takes a community, grassroots approach to conservation that's based on the principles of neighborliness; (2) Shared Vision – recommended conservation practices benefit wildlife and agriculture; (3) Strategic Approach – directs resources where the biological returns are the highest; (4) Accountability – conservation partners use science to measure conservation effectiveness and quantify outcomes; (5) Leverage – brings together partners to multiply investments to achieve more conservation; and (6) Regulatory Predictability – NRCS partners with the Service to provide predictability under the ESA.

All conservation plans developed under the WLFW-LPS will include one or more of the core practices listed in Table 1. Executing a contract with an eligible private landowner participating in WLFW-LPS Program using a core practice ensures that all other WLFW-LPS practices where cost share is also provided (e.g., practices such as brush management, prescribed grazing, timber stand improvement, etc.) are implemented specifically to benefit LPS and their habitats. Implementing the WLFW-LPS under the core practices eliminates the possibility of using practices that benefit producers exclusively but not the LPS. For example, the Upland Wildlife Habitat Management Conservation Practice Standard (645) requires that a LPS Wildlife Habitat Evaluation Guide (WHEG) (Appendix II) be conducted and limiting factors be identified and removed or reduced. The purpose of the practice is to treat upland wildlife habitat concerns identified during the conservation planning process to (1) provide shelter, cover, and food in proper amounts, locations and times to sustain LPS during all phases of its life cycle, or (2) enable movement. Specific practice standards will be used by NRCS to address the limiting factors to the species and will be implemented to achieve that objective. The identification of the species' limiting factors at the individual property owner level is essential to ensure that the goals of the Upland Wildlife Habitat Management practice are being met under the WLFW-LPS.

Core practices are critical to addressing the targeted resource concern(s) for the Initiative and achieving the desired environmental outcome(s). All conservation plans developed using WLFW-LPS Program funding must include documentation that an alternative containing the core practices was presented to the decision maker. Every contract developed under the WLFW-LPS Program by NRCS must include one of the identified core practices. Contracts must be supported by a conservation plan developed by NRCS that contains a core practice documented as either planned within the contract period or already applied on the land under contract.

Facilitating practices are those practices needed to make the core practices function properly or to address a specific site or condition related to the identified resource concern(s).

The following pages provide details of each of the covered Conservation Practice Standards, including its name and numerical designation, its purpose, and the associated resource concerns. Following the details is a summary table of anticipated annual Acres/feet by practice standard of LPS habitat impacted by the NRCS-LPS, based on designated WLFW - LPS practices planned for acres currently enrolled in the Environmental Quality Incentives Program (EQIP) within the action area for FY16-FY19.

The following is a summarized list of all the conservation measures that have been described and found to be necessary to avoid and minimize potential adverse effects of the core and facilitating practices. The specific measures applied to each practice are further identified below.

Conservation measures:

1. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.
3. Woody slash should be treated if significant buildup of fuels occurs. Slash piles shall be burned when wildfire risk is low (usually when soils are saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.
4. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants to meet pocket gopher needs.
5. Use site specific reclamation strategies using ecological site descriptions or the recommendations of the state biologist that benefit LPS.
6. Burning should be scheduled on 2 year rotations with occasional 3 year burns due to weather limitations. Growing season burns should be used to set back hardwoods and stimulate herbaceous understory whenever feasible.
7. Timber on LPS habitat should be restored as soon as possible after harvesting.
8. The practice shall not be implemented using the "bedding" technique - a mechanical means of site preparation that mounds the soil in narrow strips for tree planting.
9. Roller chopping should be avoided if possible, and limited to single pass with single roller if used.
10. Herbicide should be restricted to herbicides that would have the least effect on the seed bank but still provides the control of competition needed.
11. Fields should be prescribe grazed such that a minimum of 6 inch growth of native warm season grasses, forbs, and legumes is maintained.
12. Stocking densities and species of trees/shrubs shall be consistent with LPS habitat needs as recommended by each state’s technical committee, which includes the Service, Texas A&M Forest Service, and Louisiana Department of Wildlife and Fisheries.
13. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.
14. Timber harvest and mechanical site preparation should be restricted primarily to the winter season or secondarily to August when LPS are least active. Burning and chemical site preparation can be done when conditions are optimal.

15. Whenever possible, locate watering facilities (including wells and pipelines) and heavy use areas away from pocket gopher burrow systems.

Core Practices

Conservation Practice Standard: Restoration & Management of Rare & Declining Habitats (643)

Definition: Restoring, conserving, and managing unique or diminishing native terrestrial and aquatic ecosystems.

Purpose: To return aquatic or terrestrial ecosystems to their original or usable and functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.

Application: This practice will be a core practice in which a system of supporting practices will be applied to restore and manage rare and declining habitats and their associated wildlife species to conserve biodiversity. This practice may be utilized in those areas where LPS has been identified to occur in an identified rare or declining habitat(s).

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance from vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from crushing by equipment (i.e., seed drills, discs, skidders, etc.) used to remove and re-establish vegetation in a manner that reflects the natural pattern based on topography, slope, aspect, soils, and moisture gradients.

Conservation measures:

1. Timber harvest and mechanical site preparation should be restricted primarily to the winter season or secondarily to August when LPS are least active. Burning and chemical site preparation can be done when conditions are optimal.
2. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.

Potential Beneficial Effect(s) to the LPS: This core management practice will be used to restore, enhance or create, and manage for suitable habitat for the LPS; to improve habitat conditions for all life cycles, including breeding and nesting, and to provide adequate food, cover and shelter, and address the effects of habitat fragmentation by creating, maintaining, or restoring landscape connectivity.

Conservation Practice Standard: Upland Wildlife Habitat Management (645)

Definition: Provide and manage upland habitats and connectivity within the landscape for wildlife.

Purpose: Treating upland wildlife habitat concerns identified during the conservation planning process that enable movement, or provide shelter, cover, and food in proper amounts, locations, and times to sustain wild animals that inhabit uplands during a portion of their life cycle.

Application: This practice will be a core practice in which a system of supporting practices will be applied to benefit the LPS. It involves the treatment of habitat components identified during the conservation planning process that enable movement, or provide shelter, cover, and food in proper amounts, locations and times to sustain wild animals that inhabit uplands during a portion of their life cycle.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance from vegetation removal and establishment. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., seed drills, discs, skidders, mowers, etc.) used to remove and re-establish vegetation in a manner that improve upland habitat conditions.

Conservation measures:

1. Timber harvest and mechanical site preparation should be restricted primarily to the winter season or secondarily to August when LPS are least active. Burning and chemical site preparation can be done when conditions are optimal.
2. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.

Potential Beneficial Effect(s) to the LPS: This core management practice will be used to restore, enhance or create, and manage for suitable habitat for the LPS; to improve habitat conditions for all life cycles, including breeding and nesting, and to provide adequate food, cover and shelter, and address the effects of habitat fragmentation by creating, maintaining, or restoring landscape connectivity.

Conservation Practice Standard: Early Successional Habitat Development/Management (647)

Definition: Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.

Purpose: To provide habitat for species requiring early successional habitat for all or part of their life cycle.

Application: This practice will be a core practice in which a system of supporting practices will be applied to benefit the LPS. It involves the treatment of habitat components identified during the conservation planning process that will produce and manage vegetative conditions at early successional stages to support the LPS during all or part of its life cycle.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance from vegetation manipulation designed to maximize plant and animal diversity. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from

mowing and/or crushing by equipment (i.e., discs, skidders, mowers, etc.) used to manage early plant succession using brush management, prescribed burning, light disking, mowing, prescribed grazing, or a combination of these.

Conservation measures:

1. Roller chopping should be limited to single pass with single roller.

Potential Beneficial Effect(s) to the LPS: This core management practice will be used to restore, enhance or create, and manage for suitable habitat for the LPS; to improve habitat conditions for all life cycles, including breeding and nesting, and to provide adequate food, cover and shelter, and address the effects of habitat fragmentation by creating, maintaining, or restoring landscape connectivity.

Facilitating Practices

Conservation Practice Standard: Brush Management (314)

Definition: The management or removal of woody (non-herbaceous) plants including those plants that are invasive and noxious.

Purposes: (1) Create the desired plant community consistent with the ecological site. (2) Restore or release desired vegetative cover to protect soils, control erosion, reduce sediment improve water quality or enhance stream flow. (3) Maintain, modify or enhance fish and wildlife habitat. (4) Improve forage accessibility, quality and quantity for livestock and wildlife. (5) Manage fuel loads to achieve desired conditions.

Application: This practice will be a supporting practice to a core practice. This practice will be implemented to improve forage accessibility, quality and quantity for livestock and wildlife and create desired vegetation cover for LPS and its prey.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance from removal of woody (non-herbaceous or succulent) plants including those that are invasive and noxious. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., mowers, discs, skidders, etc.) used to remove vegetation and achieve the desired plant community based on species composition, structure, density, and canopy cover or height.

Conservation measures:

1. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.

3. Woody slash should be treated if significant buildup of fuels occurs. Slash piles shall be burned when wildfire risk is low (usually when soils are saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.

Potential Beneficial Effect(s) to the LPS: Removal of a limiting habitat factor (hardwood midstory) and creation of desired or targeted habitat conditions (diverse and abundant herbaceous understory vegetation).

Conservation Practice Standard: Herbaceous Weed Control (315)

Definition: The removal or control of herbaceous weeds including invasive, noxious, and prohibited plants.

Purposes: (1) Enhance accessibility, quantity, and quality of forage and/or browse. (2) Restore, create, or release native desired plant communities and wildlife habitats consistent with the ecological site. (3) Protect soils and control erosion. (4) Reduce fine-fuels fire hazard and improve air quality.

Application: The practice will be used to support a core management practice and may be cost shared in conjunction with prescribed burning (338) to address remaining and/or emergent herbaceous weeds considered noxious, invasive or undesirable to support the desired habitat conditions. Practice implementation removes or reduces invasive or other weed species that directly or indirectly limit LPS habitat quality and productivity.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance from removal or control of herbaceous weeds including invasive, noxious and prohibited plants. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., mowers, discs, skidders, etc.) used to remove vegetation and achieve the desired plant community based on species composition, structure, density, and canopy cover or height.

Conservation measures:

1. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.
3. Herbicide should be restricted to herbicides that would have the least effect on the seed bank but still provides the control of competition needed.

Potential Beneficial Effect(s) to the LPS: Practice implementation removes or reduces invasive or other weed species that directly or indirectly limit LPS habitat quality and productivity. Practice can beneficially influence the vigor and establishment of native or desirable vegetation required to provide quality habitat.

Conservation Practice Standard: Conservation Cover (327)

Definition: Establishing and maintaining permanent vegetative cover.

Purposes: This practice may be applied to accomplish one or more of the following: (1) Reduce soil erosion and sedimentation. (2) Improve water quality. (3) Improve air quality. (4) Enhance wildlife habitat and pollinator habitat. (5) Improve soil quality. (6) Manage pest plants.

Application: Practice will involve planting of native grasses and forbs in areas where conservation is necessary to promote quality LPS habitat conditions.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance from establishing plant species diversity that result in multiple structural levels of vegetation that maximize wildlife use. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., seed drills, discs, skidders, mowers, etc.) used to establish vegetation and achieve the desired plant community.

Conservation measures:

1. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.
2. Use site specific reclamation strategies using ecological site descriptions or the recommendations of the state biologist that benefit LPS.

Potential Beneficial Effect(s) to the LPS: Practice implementation will provide additional forage and cover habitat. Potentially also re-connecting fragmented habitat patches.

Conservation Practice Standard: Prescribed Burning (338)

Definition: Controlled fire applied to a predetermined area.

Purpose(s): (1) Control undesirable vegetation. (2) Prepare sites for harvesting, planting or seeding. (3) Control plant disease. (4) Reduce wildfire hazards. (5) Improve wildlife habitat. (6) Improve plant production quantity and/or quality. (7) Remove slash and debris. (8) Enhance seed and seedling production. (9) Facilitate distribution of grazing and browsing animals. (10) Restore and maintain ecological sites.

Application: This practice will be a supporting practice to a core practice. This practice will create the desired plant community phase consistent with the ecological site description that is preferable LPS habitat. Actions may include: (a) control undesirable vegetation or to manipulate desired vegetation; (b) prepare sites for planting or seeding; (c) manipulate vegetation to reduce wildfire hazards; (d) improve wildlife habitat to specifically enhance and produce desirable or needed plant communities for all phases of LPS life cycle; (e) improve pocket gopher forage production quantity and/or quality; and/or (f) restore and/or maintain ecological sites.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring disturbance and increased potential of accidental mortality or injury to individuals from burning (heat and smoke). Increased mortality or injury to individuals caught above ground or in shallow burrows from crushing by equipment (trucks, skidders, disks, etc.) utilized to maintain burn control and safety.

Conservation measures:

1. Woody slash should be treated if significant buildup of fuels occurs. Slash piles shall be burned when wildfire risk is low (usually when soils are saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.
2. Burning should be scheduled on 2 year rotations with occasional 3 year burns due to weather limitations. Growing season burns should be used to set back hardwoods and stimulate herbaceous understory whenever feasible.

Potential Beneficial Effect(s) to the LPS: Prescribed burning is one of the most important management tools for creating or maintaining LPS habitat. Prescribed burning shapes the forest structure and composition, providing desired habitat conditions. Target areas and defined objective(s) will be clearly stated with intended goals to be addressed for each client defined management unit.

Conservation Practice Standard: Fire Break (394)

Definition: A permanent or temporary strip of bare or vegetated land planned to retard fire.

Purpose: (1) Reduce the spread of wildfire. (2) Contain prescribed burns.

Application: This practice will be a supporting practice to a core practice and to enhance the effectiveness of the prescribed burn (338) practice standard. Firebreaks will be of sufficient width and length to contain the expected fire and located to minimize risk to the LPS.

Potential Adverse Effect(s) to LPS: Temporary, reoccurring soil disturbance and vegetation removal. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., mowers, discs, skidders, etc.) used to remove vegetation and maintain fire breaks.

Conservation measures:

1. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.

Potential Beneficial Effect(s) to the LPS: Practice can help reduce the spread of wildfires thus reducing the risk of large-scale, habitat loss. Firebreaks can provide foraging areas by stimulating forb growth.

Conservation Practice Standard: Tree/Shrub Site Preparation (490)

Definition: Treatment of areas to improve site conditions for establishing trees and/or shrubs.

Purpose: (1) Encourage natural regeneration of desirable woody plants. (2) Initiate man-made establishment of woody plants.

Application: Practice will be a supporting practice to a core practice. An appropriate site preparation method will be chosen to achieve the intended purpose and to protect desirable vegetation, site and soil conditions. Other complementary practices and measures will be used as necessary to control erosion, runoff, compaction and displacement to acceptable levels.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance and increased potential of accidental mortality or injury to individuals from burning (heat and smoke). Increased mortality or injury to individuals caught above ground or in shallow burrows from crushing by equipment (trucks, mowers, disks, etc.) utilized to achieve conditions to establish the desired plant community.

Conservation measures:

1. Woody slash should be treated if significant buildup of fuels occurs. Slash piles shall be burned when wildfire risk is low (usually when soils are saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.
2. The practice shall not be implemented using the "bedding" technique - a mechanical means of site preparation that mounds the soil in narrow strips for tree planting.
3. Roller chopping should be limited to single pass with single roller.
4. Herbicide should be restricted to herbicides that would have the least effect on the seed bank but still provides the control of competition needed.
5. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.
6. Timber harvest and mechanical site preparation should be restricted primarily to the winter season or secondarily to August when LPS are least active. Burning and chemical site preparation can be done when conditions are optimal.

Potential Beneficial Effect(s) to the LPS: Practice implementation will provide measures necessary to increase forage and cover habitat. Potentially also re-connecting fragmented habitat patches.

Conservation Practice Standard: Forage and Biomass Plantings (512)

Definition: Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production.

Purpose: (1) Improve or maintain livestock nutrition and/or health. (2) Provide or increase forage supply during periods of low forage production. (3) Reduce soil erosion. (4) Improve soil and water quality. (5) Produce feedstock for biofuel or energy production.

Application: Practice will involve planting of native grasses, forbs, and legumes in areas where conservation is necessary to promote forage and biomass production and improve LPS habitat conditions. As indicated by the anticipated acreage use by each state (Table 2), this is a limited use practice.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance from establishing plant species that result in annual, biennial or perennial species for forage or biomass production. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., seed drills, discs, skidders, mowers, etc.) used to establish vegetation and achieve the desired plant community.

Conservation measures:

1. Native species shall be used wherever possible to meet practice objectives with preference to forbs, grasses, and grass-like plants to meet pocket gopher needs.
2. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.

Potential Beneficial Effect(s) to the LPS: Practice implementation will provide measures necessary to increase pocket gopher forage and cover habitat. Potentially also re-connecting fragmented habitat patches.

Conservation Practice Standard: Prescribed Grazing (528)

Definition: Managing the harvest of vegetation with grazing and/or browsing animals.

Purpose: This practice may be applied as a part of conservation management system to achieve one or more of the following: (1) Improve or maintain desired species composition and vigor of plant communities. (2) Improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity. (3) Improve or maintain surface and/or subsurface water quality and quantity. (4) Improve or maintain riparian and watershed function. (5) Reduce accelerated soil erosion, and maintain or improve soil condition. (6) Improve or maintain the quantity and quality of food and/or cover available for wildlife. (7) Manage fine fuel loads to achieve desired conditions.

Application: This practice will be a supporting practice to a core practice. This practice will create desired vegetation cover consistent with the ecological site; maintain, modify, or enhance wildlife habitat for LPS.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance through hoof action. Sufficient recovery time of grazed habitat is necessary to promote key plant community objectives and woody vegetation control. Potential increase of trampling or injury to LPS above ground or in shallow pocket gopher burrows.

Conservation measures:

1. Fields should be prescribe grazed such that a minimum of 6 inch growth of native warm season grasses, forbs, and legumes is maintained.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.

Potential Beneficial Effect(s) to the LPS: Prescribed grazing provides a direct benefit to the LPS by precluding successional overgrowth of woody habitat and increasing plant diversity.

Conservation Practice Standard: Range Planting (550)

Definition: Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees.

Purpose: (1) Restore a plant community similar to the Ecological Site Description reference state for the site or the desired plant community. (2) Provide or improve forages for livestock. (3) Provide or improve forage, browse or cover for wildlife. (4) Reduce erosion by wind and/or water. (5) Improve water quality and quantity. (6) Increase carbon sequestration.

Application: This practice will be a supporting practice to a core practice. Practice will involve planting of native grasses and forbs in areas where enhancements are necessary to promote quality habitat conditions.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance from establishment of plant species that are perennial or self-sustaining. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from mowing and/or crushing by equipment (i.e., seed drills, discs, skidders, mowers, etc.) used to establish vegetation and achieve the desired plant community.

Conservation measures:

1. 1. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.
2. 2. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants to meet pocket gopher needs.

Potential Beneficial Effect(s) to the LPS: Practice implementation will increase pocket gopher forage and cover habitat. Potentially also re-connecting fragmented habitat patches.

Conservation Practice Standard: Tree/Shrub Establishment (612)

Definition: Establishing woody plants by planting seedlings or cuttings, direct seeding, or natural regeneration.

Purpose: Establish woody plants for: (1) forest products such as timber- pulpwood, etc.; (2) wildlife habitat; (3) long-term erosion control and improvement of water quality; (4) treating waste; (5) storing carbon in biomass; (6) reduce energy use; (7) develop renewable energy systems; (8) improving or restoring natural diversity; and (9) enhancing aesthetics.

Application: This practice will be a supporting practice to a core practice. The practice will involve planting longleaf pine, loblolly pine, shortleaf pine or slash pine, where appropriate, to promote quality LPS habitat conditions with appropriate stem densities.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance from establishing woody plants that result in forest products, wildlife habitat, long-term erosion control, improved water quality, etc. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from crushing by equipment (i.e., discs, skidders, mowers, etc.) used to establish vegetation and achieve the desired plant community.

Conservation measures:

1. Timber on LPS habitat should be restored as soon as possible after harvesting.
2. Stocking densities and species of trees/shrubs shall be consistent with LPS habitat needs as recommended by each state's technical committee, which includes the Service, Texas A&M Forest Service, and Louisiana Department of Wildlife and Fisheries.
3. Timber harvest and mechanical site preparation should be restricted primarily to the winter season or secondarily to August when LPS are least active. Burning and chemical site preparation can be done when conditions are optimal.

Potential Beneficial Effect(s) to the LPS: Establish low density (open) pine forests with the potential to reintroduce prescribed fire to the ecosystem. Provide fuel for prescribed burning.

Conservation Practice Standard: Forest Trails and Landings (655)

Definition: A temporary or infrequently used route, path or cleared area.

Purpose: (1) Provide routes for temporary or infrequent travel by people or equipment for management activities. (2) Provide periodic access for removal and collection of forest products.

Application: This practice will be a supporting practice to a core practice. Practice involves providing routes for temporary or infrequent travel by people or equipment for forestry management activities.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance, vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals above ground or in shallow burrows from crushing or mechanical displacement of soil by equipment (i.e., blades, discs, skidders, mowers, etc.) used to establish forest trails and landings. Some soil compaction could reduce pocket gopher burrow systems beneath established trails and landings.

Conservation measures:

1. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.

Potential Beneficial Effect(s) to the LPS: Establish and/or maintain low density pine forests with the potential to reintroduce prescribed fire to the ecosystem. Provide fuel for prescribed burning.

Conservation Practice Standard: Road/Trail/Landing Closure and Treatment (654)

Definition: The closure, decommissioning, or abandonment of roads, trails, and/or landings and associated treatment to achieve conservation objectives.

Purpose: To minimize various resource concerns associated with existing roads, trails, and/or landings by closing them and treating to a level where one or more the following objectives are achieved: (1) controlling erosion (road, sheet and rill, gully, wind), chemical residues and off-site movement, sediment deposition and damage, accentuated storm runoff, and particulate matter generation; (2) restoring land to a productive state by reestablishing adapted plants and habitat (wildlife food, cover, and shelter), reconnecting wildlife habitat and migration corridors including streams and riparian areas, and controlling noxious and invasive species; (3) reestablishing drainage patterns that existed prior to construction of the road, trail, or landing to restore the form and integrity of associated hill slopes, channels and floodplains and their related hydrologic and geomorphic processes; and (4) minimizing human impacts to the closure area to meet safety, aesthetic, sensitive area protection, or wildlife habitat requirements.

Application: This practice will be a supporting practice to a core practice. Practice involves closing routes for temporary or infrequent travel by people or equipment for forestry management activities.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance, vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals above ground or in shallow burrows from crushing or mechanical displacement of soil by equipment (i.e., blades, discs, skidders, mowers, etc.) used for excavation, reshaping, and closure of roads, trails, landings, and drainage ways to natural conditions.

Conservation measures:

1. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.
2. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants to meet pocket gopher needs.
3. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.

Potential Beneficial Effect(s) to the LPS: Establish low density pine forests with the potential to reintroduce prescribed fire to the ecosystem. Reduce temporary soil disturbance, vegetation removal and decrease potential of introduction of invasive plants. Reduce potential of accidental mortality or injury to individuals after closure.

Conservation Practice Standard: Fence (382)

Definition: A constructed barrier to animals or people.

Purpose: This practice facilitates the accomplishment of conservation objectives by providing a means to control movement of animals and people, including vehicles.

Application: This practice will be a supporting practice to a core practice. Practice involves constructing a barrier to manage grazing animals and/or people.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance, vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals may occur during fence construction or maintenance events. Fences will be designed, located, and installed to meet appropriate land management needs and reduce LPS impacts.

Conservation Measures: No conservation measures are needed for this practice.

Potential Beneficial Effect(s) to the LPS: Fencing out livestock and/or people will allow for habitat protection and management with prescribed grazing.

Conservation Practice Standard: Forest Stand Improvement (666)

Definition: The manipulation of species composition, stand structure and stocking density by cutting or killing selected trees and understory vegetation.

Purpose: (1) Increase the quantity and quality of forest products by manipulating stand density and structure; (2) Timely harvest of forest products; (3) Development of renewable energy systems; (4) Initiate forest stand regeneration; (5) Reduce wildfire hazard; (6) Improve forest health reducing the potential of damage from pests and moisture stress; (7) Restore natural plant communities; (8) Achieve or maintain a desired native understory plant community for special forest products, grazing, and browsing; (9) Improve aesthetic and recreation, values; (10) Improve wildlife habitat; (11) Alter water yield; (12) Increase carbon storage in selected trees.

Application: This practice will be a supporting practice to a core practice. This practice will create desired tree and mid-story conditions consistent with the ecological site requirements to maintain, modify, or enhance wildlife habitat for LPS.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance, vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals above ground or in shallow burrows from crushing or mechanical displacement of soil by equipment (i.e., blades, discs, skidders, mowers, etc.) used to improve and sustain forest health and productivity, initiate forest regeneration, and improve wildlife habitat.

Conservation measures:

1. Timber on LPS habitat should be restored as soon as possible after harvesting.
2. Spraying or other control of undesirable vegetation will be done on a “spot” or rotational basis to protect grasses, forbs, and legumes that benefit native pollinators and pocket gophers. When evidence of pocket gophers and/or herbaceous understory is present, band spraying is the preferred alternative.
3. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.
4. Woody slash should be treated if significant buildup of fuels occurs. Slash piles shall be burned when wildfire risk is low (usually when soils are saturated). Follow state forestry laws, when applicable, for treating slash to minimize wildfire risk.
5. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants to meet pocket gopher needs.
6. The practice shall not be implemented using the "bedding" technique - a mechanical means of site preparation that mounds the soil in narrow strips for tree planting.
7. Roller chopping should be avoided if possible, and limited to single pass with single roller if used.
8. Herbicide shall be restricted to herbicides that would have the least effect on the seed bank but still provides the control of competition needed.
9. Stocking densities and species of trees/shrubs shall be consistent with LPS habitat needs as recommended by each state’s technical committee, which includes the Service, Texas A&M Forest Service, and Louisiana Department of Wildlife and Fisheries.
10. Avoid placement of slash piles, log sets, firebreaks, and trails over pocket gopher burrow systems.
11. Timber harvest and mechanical site preparation should be restricted primarily to the winter season or secondarily to August when LPS are least active. Burning and chemical site preparation can be done when conditions are optimal.

Potential Beneficial Effect(s) to the LPS: Establishing appropriate density pine forests with the potential to reintroduce prescribed fire to the ecosystem is one of the most important management tools for creating or maintaining LPS habitat. Forest Stand Improvement shapes the forest structure and composition, providing desired habitat conditions. Target areas and defined objective(s) will be clearly stated with intended goals to be addressed for each client defined management unit.

Conservation Practice Standard: Critical Area Planting (342)

Definition: Establishing permanent vegetation on sites that have, or are expected to have, high erosion rates, and on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal practices.

Purpose: (1) Stabilize stream and channel banks, and shorelines. (2) Stabilize areas with existing or expected high rates of soil erosion by wind or water. (3) Rehabilitate and revegetate degraded sites that cannot be stabilized using normal establishment techniques. (4) Stabilize coastal areas, such as sand dunes and riparian areas.

Application: Practice will involve planting of native grasses and forbs in areas where conservation is necessary to promote quality LPS habitat conditions.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance from establishing permanent vegetation on sites that have, or are expected to have, high erosion rates, physical, chemical, or biological conditions that prevent the establishment of vegetation. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from crushing or mechanical displacement of soil by equipment (i.e., discs, skidders, mowers, etc.) used to establish vegetation and achieve the desired plant community.

Conservation measures:

1. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants to meet pocket gopher needs.

Potential Beneficial Effect(s) to the LPS: Establishment of permanent vegetation can provide stability in the ecosystem by improving soil quality, preventing erosion and providing forage for pocket gophers.

Conservation Practice Standard: Water Well (642)

Definition: A hole drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer for water supply.

Purpose: (1) Provide water for livestock, wildlife, irrigation, and other agricultural uses. (2) Facilitate proper use of vegetation, such as keeping animals on rangeland and pastures and away from streams, and providing water for wildlife.

Application: This practice will be a supporting practice to a core practice. This practice will facilitate the creation of a grazing management system by providing a water source.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance, vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals at or near the site from ground disturbance associated with drilling.

Conservation measures:

1. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.
2. Whenever possible, locate watering facilities (including wells and pipelines) and heavy use areas away from pocket gopher burrow systems.

Potential Beneficial Effect(s) to the LPS: The establishment of water wells allows creation of a prescribed grazing system that provides a direct benefit to the LPS by precluding successional overgrowth of habitat and increasing plant diversity.

Conservation Practice Standard: Watering Facility (614)

Definition: A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and or wildlife.

Purpose: To provide access to drinking water for livestock and/or wildlife in order to: (1) Meet daily water requirements; and (2) Improve animal distribution.

Application: This practice will be a supporting practice to a core practice. This practice will facilitate the creation of a grazing management system by providing a permanent drinking water source. Prescribed grazing can benefit the LPS by precluding successional overgrowth of woody habitat and increasing plant diversity.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance and vegetation removal. Permanent removal/loss of potentially suitable habitat at or near the site from installation of a permanent drinking water source.

Conservation measures:

1. Whenever possible, locate watering facilities (including wells and pipelines) and heavy use areas away from pocket gopher burrow systems.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.

Potential Beneficial Effect(s) to the LPS: The establishment of watering facilities allows creation of a prescribed grazing system that provides a direct benefit to the LPS by precluding successional overgrowth of habitat and increasing plant diversity.

Conservation Practice Standard: Livestock Pipeline (516)

Definition: A pipeline and appurtenances installed to convey water for livestock or wildlife.

Purposes: This practice may be applied as part of a resource management system to achieve one or more of the following purposes: (1) convey water to points of use for livestock or wildlife; (2) reduce energy use; and/or (3) develop renewable energy systems.

Application: This practice will be a supporting practice to a core practice. This practice will facilitate the creation of a grazing management system by allowing watering sources to be located in additional locations. Prescribed grazing can benefit the LPS by precluding successional overgrowth of woody habitat and increasing plant diversity.

Potential Adverse Effect(s) to LPS: Temporary soil disturbance, vegetation removal and increased potential of introduction of invasive plants. Increased potential of accidental mortality or injury to individuals from trenching (to a depth of approximately 12 inches) to convey water from a source of supply to points of use for livestock.

Conservation measures:

1. Whenever possible, locate watering facilities (including wells and pipelines) and heavy use areas away from pocket gopher burrow systems.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.

Potential Beneficial Effect(s) to the LPS: The establishment of watering facilities allows creation of a prescribed grazing system that provides a direct benefit to the LPS by precluding successional overgrowth of habitat and increasing plant diversity.

Conservation Practice Standard: Heavy Use Area Protection (561)

Definition: The stabilization of areas frequently and intensively used by people, animals or vehicles by establishing vegetative cover, surfacing with suitable materials, and/or installing needed structures.

Purposes: (1) To provide a stable, non-eroding surface for areas frequently used by animals, people or vehicles; and/or (2) to protect and improve water quality.

Application: This practice will be a supporting practice to a core practice. This practice will facilitate the creation of a grazing management system by protecting heavy use areas associated with frequent use by animals, people, and/or vehicles. Prescribed grazing can benefit the LPS by precluding successional overgrowth of woody habitat and increasing plant diversity.

Potential Adverse Effect(s) to LPS: Permanent removal/loss of potentially suitable habitat at protected areas that are subject to heavy use.

Conservation measures:

1. Whenever possible, locate watering facilities (including wells and pipelines) and heavy use areas away from pocket gopher burrow systems.
2. Design the practice to minimize or avoid unintentional damage to non-target plants and animals.
3. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants to meet pocket gopher needs.

Potential Beneficial Effect(s) to the LPS: Heavy use area protection is an important part of a prescribed grazing system that provides a direct benefit to the LPS by precluding successional overgrowth of habitat and increasing plant diversity.

Conservation Practice Standard: Silvopasture (381)

Definition: Establishment and/or management of desired trees and forages on the same land unit.

Purpose: This practice may be applied as a part of conservation management system to achieve one or more of the following: (1) provide forage, shade, and/or shelter for livestock; (2) improve the productivity and health of trees/shrubs and forages; (3) improve water quality; (4) reduce

erosion; (5) enhance wildlife habitat; (6) improve biological diversity; (7) improve soil quality; (8) increase carbon sequestration and storage; (9) provide for beneficial organisms and pollinators.

Application: This practice will be a supporting practice to a core practice. This practice will create desired vegetation cover consistent with the ecological site; and maintain, modify, or enhance wildlife habitat for LPS.

Potential Adverse Effect(s) to LPS: Temporary and reoccurring soil disturbance from establishing woody plants that result in areas suitable for the desired forages, trees, and livestock. Increased potential of accidental mortality or injury to individuals caught above ground or in shallow burrows from crushing by equipment (i.e., discs, skidders, mowers, etc.) and/or animals used to establish silvopasture in a forested condition.

Conservation measures:

1. Fields should be prescribed grazed such that a minimum of 6 inch growth of native warm season grasses, forbs, and legumes is maintained.
2. Native species will be used wherever possible to meet practice objectives with preference to forbs, grasses and grass-like plants.

Potential Beneficial Effect(s) to the LPS: Prescribed grazing provides a direct benefit to the LPS by precluding successional overgrowth of habitat and increasing plant diversity.

Table 2. Anticipated Annual Acres/Feet by Practice Standard of LPS Habitat Impacted by the NRCS WLFW-LPS Program, based on Current Enrollment in EQIP for FY16, FY17, FY18, and FY19 within the action area).

	LA	TX	Totals
WHEG?	Yes	Yes	
Anticipated Avg. Contract Period	5 yrs	5 yrs	
Conservation Practice Standards	Amounts by State		
314 - Brush Management	324 acres	258 acres	582 acres
315 - Herbaceous Weed Control	870 acres	1,283 acres	2,153 acres
327 - Conservation Cover	17 acres	0 acres	17 acres
338 - Prescribed burning	1,853 acres	2,346	4,199 acres
342 - Critical Area Planting	7 acres	0 acres	7 acres
381- Silvopasture	0 acres	0 acres	0 acres
382 - Fence	49,171 feet	24,334 feet	73,505 feet
394 - Fire Break	155,607 feet	204,012 feet	359,619 feet
490 - Tree/Shrub Site Preparation	451 acres	1,639 acres	2,089 acres
512 - Forage and Biomass Plantings	990 acres	229 acres	1,219 acres
516 - Livestock Pipeline	22,557 feet	2,811 feet	25,367 feet
528 - Prescribed Grazing	0 acres	116 acres	116 acres
550 - Range Planting	0 acres	0 acres	0 acres

561 - Heavy Use Area Protection	11 acres	0 acres	11 acres
612 - Tree/Shrub Establishment	810 acres	1,799 acres	2,609 acres
614 - Watering Facility	38 total	2 total	40 total
642 - Water Well	3 total	0 total	3 total
643 - Restoration & Management of Rare & Declining Habitats	0 acres	0 acres	0 acres
645 - Upland Wildlife Habitat Management	0 acres	0 acres	0 acres
647 - Early Successional Habitat Development & Management	369 acres	0 acres	369 acres
654 - Road/Trail/Landing Closure and Treatment	0 acres	0 acres	0 acres
655 - Forest Trails and Landings	0 acres	0 acres	0 acres
666 - Forest Stand Improvement	828 acres	1,106 acres	1,933 acres

Use of Best Science to Support Creating Desired Habitat Conditions

To support effective application of each of the conservation practices, NRCS and the Service worked collaboratively to develop a Wildlife Habitat Evaluation Guide (WHEG) for the LPS. The WHEGs are tools that are developed at the NRCS state level and are used by field personnel to assess existing habitat conditions and identify limiting habitat factors in the planning area. The WHEGs are named in a manner that may use terminology such as "evaluation", "appraisal", "assessment", or "habitat suitability model". They usually take a form similar to Habitat Suitability Index Models (See the Service's Ecological Services manual, *Habitat as a Basis for Environmental Assessment*. 1980) and often include variables that are relatively easy for non-biologist staff to collect while in the field.

To evaluate the habitat for the LPS, the NRCS worked with the Service to develop a range-wide WHEG that will be used by both states to evaluate LPS habitat (see Appendix II). The WHEG evaluates existing (benchmark) habitat conditions based on multiple elements such as soils, pine basal area (BA), shrub cover (%), herbaceous ground cover(%), average shrub height (inches), herbaceous species richness (grasses, forbs, and legumes), forest management or harvest activities, grazing management, noxious and or invasive plant species, and habitat size. The score for each element ranges from 0 to 1.0, with 0.5 meeting the bare minimum quality criteria for LPS habitat. Elements scoring below 0.5 do not meet LPS habitat criteria, indicating a lack of suitable habitat; therefore, the species is likely not present. The WHEG can also be used to cast a future score for the expected condition of habitat after the implemented conservation practices have reached maturity.

After completing the LPS WHEG, the planner will then work with the client to develop and evaluate alternatives to address the resource concerns that do not meet quality criteria for LPS habitat. A conservation practice may be a structural or vegetative measure, or a management activity used to restore, enhance or protect habitat. The suite of practices chosen from Table 1 becomes the Conservation Plan, a record of the client's decisions for the treatment of resource problems.

Incorporation of Jointly Developed Conservation Measures

Inherent to the NRCS conservation planning process is the minimization of potentially negative impacts that may occur during the implementation of any conservation practice on the planning unit. As a component of the WLFW-LPS Program, we developed Conservation Measures for each of the resource effects that are incorporated into the covered conservation practices. Conservation Measures consist of additional criteria in the conservation practice standard that avoid or minimize the amount or magnitude of adverse effects on species as a result of practice implementation. In most cases these measures ensure that implementation is not likely to adversely affect any federally listed species or critical habitat.

Monitoring

NRCS will monitor and track implementation of the conservation practices and the resulting habitat responses. This includes, but is not limited to, reporting total number of acres enrolled in the program each year, total number of acres enrolled per year by practice, and the number of acres enrolled in the program within 5 miles of known LPS occupied habitat to help quantify beneficial effects of the program to LPS. When a client/landowner gives permission, NRCS will also facilitate assessments by the Service or other federal and state wildlife agencies to measure the biological response of LPS populations to conservation practices and adaptively improve program implementation each year. Sampling techniques will be standardized, but adaptive as necessary. Site-specific details of biological surveys will be developed when landowners provide permission.

Administrative Management

To ensure continuity and consistency throughout the over 30-year term of the document, NRCS and the Service have jointly agreed to the following administrative procedures.

NRCS conservation practice standards and enhancements undergo periodic review, usually on a 5-year cycle. Additionally, at irregular intervals (on an as needed basis), changes are made to the standard/enhancement, specification, or the practice name as new technologies and methods are developed. Should changes be made to any conservation practice/enhancement, NRCS will coordinate with the Service regarding the changes and determine if the practice/enhancement still meets the requirements and conservation measures as provided in this Conference Opinion. The decision whether or not to keep the modified practice/enhancement covered under the WLFW-LPS will then be made in conjunction with the Service.

The above process for modifications can be included in the annual review conducted between the Service and NRCS and other invited partners and experts. During the annual review meeting, information such as a summary of the previous years' changes, new science, new research and pertinent partnership information will be discussed and incorporated where agreed.

On an annual basis for the life of this Opinion, the NRCS will provide a summary of accomplishments of the Proposed Action, including but not limited to:

- a. Acreage and frequency of each core conservation practice standard/enhancement;

- b. Number of acres enrolled in the WLFW – LPS program each year and within 5 miles of known occupied LPS habitat;
- c. Compiled results from the WHEGs which demonstrate long term beneficial effects, as this information becomes available;
- d. A summary of changes, if any, in the covered conservation practice standards/enhancements (e.g. changes in covered activities, plans and/or specifications, quality criteria, payment schedules, Job Sheets, etc.); and,
- e. Information as it becomes available on the efficacy of the conservation measures and expected benefits.
- f. Any landowners who have given permission to allow biological assessments of LPS be conducted on their property.

The NRCS will provide an annual assessment of the accomplishments no later than November 30th of each year. The first report is due November 30, 2018.

ESA Predictability

The Proposed Action is a collaborative partnership between the Service and NRCS that strategically targets technical and financial assistance to improve habitat for this declining species while also offering ESA predictability for the duration of a client's agreement with NRCS and 30 years afterwards to eligible and compliant participants. The ESA predictability provides the participants with long term clarity that they will be in compliance with the ESA if and when the LPS is listed under the ESA, as long as participants regularly report and maintain their compliance with the WLFW-LPS program. The ESA predictability and conservation measures apply regardless of the NRCS program funding and are instead tied to the covered conservation practices/enhancements and the participant's compliance with the completed Conservation Plan.

Consistent with an agreement between the Service and NRCS, described in an exchange of letters in August, 2012 (Appendix V), the Service prepared this Conference Opinion for NRCS under Section 7 of the ESA. This will exempt the compliant participant from any incidental take associated with implementing the specified conservation practices and measures included in each participant's conservation plan if and when the LPS becomes a species protected by the ESA.

Recognizing that continued implementation of the conservation practices and enhancements by participating NRCS clients beyond the term of the NRCS contract would advance the longer-term goals of the Proposed Action and both agencies' missions, the Service is evaluating the effects of implementing the specified practices for the duration of a client's agreement with NRCS plus 30 years thereafter. Eligible participants who choose to use and/or maintain the conservation practices and enhancements and associated conservation measures included in their respective conservation plan will have the predictability of knowing that ESA issues associated with their implementation of the specified conservation practices/enhancements for up to 30 years after the duration of their NRCS agreement ends have already been addressed, if the LPS is listed and as long as the clients regularly report. NRCS has developed a protocol to track participation in the Proposed Action and will be providing this information as a component of its

annual report. NRCS will bundle and report ongoing as well as new accomplishments annually to the Service as outlined above.

It is expected that additional conservation actions related to the covered practices and enhancements may be developed over the ≥ 30 -year life of the Proposed Action. As this occurs, the Service and NRCS will collaborate on including any new conservation practices by amending this document. As part of the process, this may necessitate the revision and/or development of new conservation measures to ensure consistency with the NRCS-Service ESA predictability agreement explained further in Appendix V.

Outcomes Expected

The overall goal of the WLFW-LPS program is to increase LPS abundance, fitness, and distribution through habitat improvements and by addressing local and landscape threats. At least one of the identified core management practices will take place on all acres contracted through the WLFW-LPS program. The long-term implementation of these core practices is essential to the success of the WLFW-LPS program. In addition, supporting practices such as brush control, forest management, prescribed fire, and other associated practices will provide the tools private landowners need to properly implement conservation, enhancement, and/or restoration actions for the LPS and its associated habitat.

In the short-term, the desired outcome is additional management and enhancement of LPS habitat on private lands within the Action Area. Over the long-term it is anticipated that the WLFW-LPS

Program will facilitate the stabilization of existing populations, creation of new habitat, reduction of fragmentation of suitable habitat and reduction or elimination of threats and challenges to recovery and conservation of not only the LPS but other species as well. Many other federally and non-federally protected species are expected to benefit from the WLFW-LPS Program, such as the endangered red-cockaded woodpecker, bobwhite quail, chuck-wills-widow, etc.

The NRCS is neither a regulatory nor a land management agency, and its role in farm and range management issues is largely advisory at the invitation of individual clients. Technical advice and planning alone do not constitute a federal nexus, as the NRCS has no control over the conservation plan and the client is the decision maker for the conservation plan. However, beginning with the 2002 Farm Bill and continuing with the programs of the 2008 Farm Bill, clients can now obtain financial assistance directly from NRCS to implement their conservation plan, establishing a federal nexus for the agency. Some financial programs provide rental payments for placing eligible lands into conservation easements and are not covered by this opinion. Most financial assistance programs consist of a 1-5 year term contract between a client and the NRCS where the client agrees to install and maintain a suite of conservation practices to improve natural resource management, and receive a reimbursement of a portion of the cost as an incentive for completing each practice to NRCS standards and specifications. When a multi-year conservation plan is provided by NRCS, such as a forest management plan, clients will often re-apply for financial assistance.

NRCS and its partners will conduct assessments to measure the biological response of LPS populations to conservation practices with permission from the landowner, assess the effectiveness of implementing conservation practices and measures, and adaptively improve program implementation each year.

STATUS OF THE SPECIES

Louisiana Pinesnake

Species description

Pinesnakes (genus *Pituophis*) are large, short-tailed, non-venomous, powerful constricting snakes with keeled scales, a single anal plate (the scale covering the cloaca), and disproportionately small heads (Conant and Collins 1991, pp. 201-202). Their snouts are pointed, and they have a large rostral (tip of the snout) scale, both presumably contributing to the snakes good burrowing ability. The Louisiana pinesnake (*P. ruthveni*) has a buff to yellowish background color with dark brown to russet dorsal blotches covering its total length (Vandeventer and Young 1989, p. 35; Conant and Collins 1991, p. 203). The belly of the LPS is unmarked or boldly patterned with black markings. It is variable in both coloration and pattern, but a characteristic feature is that the body markings on its back are always conspicuously different at opposite ends of its body. Blotches run together near the head, often obscuring the background color, and then become more separate and well-defined towards the tail. Typically, there are no noticeable head markings, although rarely a light bar or stripe may occur behind the eye. The length of adult LPS ranges from 48 to 56 inches (in) (122 to 142 centimeters (cm)) (Conant and Collins 1991, p. 203). The largest reported specimen was 5.8 feet (ft) (178 cm) long (Davis 1971, p. 1; Conant and Collins 1991, p. 203).

Habitat

LPS are known from and associated with a disjunct portion of the historic longleaf-dominated (hereafter, “longleaf”) pine (*Pinus palustris*) ecosystem that existed in west-central Louisiana and east Texas (Reichling 1995, p. 186). Longleaf pine forests (which are dominated by longleaf, but may also contain other overstory species such as loblolly and shortleaf pine and sparse hardwoods) have the most species- rich herpetofaunal community compared to other similarly sized and located pine forest habitat in North America, and harbor more species that are specialists of that habitat (Guyer and Bailey 1993, p. 142). Early accounts of LPS collections indicate a strong affinity for longleaf pine habitat, as most reports indicated the snakes were collected within or adjacent to longleaf pine stands (Fugler 1955, p. 24; Conant 1956, pp. 5, 19, 24; Walker 1965, p. 160; Thomas et al. 1976, p. 253; Jennings and Fritts 1983, p. 3; Wright and Wright 1994, pp. 622, 623; Jordan 1998, p. 11). The vast majority of natural longleaf pine habitat has been lost or degraded due to conversion to extensive pine plantations and suppression of the historic fire regime. As a result, current LPS habitat generally consists of sandy, well-drained soils in open canopy pine forest, which may include species such as longleaf, shortleaf, slash, or loblolly pines with a sparse midstory, and well-developed herbaceous ground cover dominated by grasses and forbs (Young and Vandeventer 1988, p. 204; Rudolph and Burgdorf 1997, p. 117).

Abundant ground-layer herbaceous vegetation is important for the LPS's primary prey, the Baird's pocket gopher, which constitutes 75 percent of the LPS's estimated total prey biomass (Rudolph et al. 2012, p. 243). Baird's pocket gopher depends mostly on various plant parts of a variety of herbaceous species (Pennoyer 1932, pp. 128-129; Sulentic et al. 1991, p. 3). Pocket gopher abundance is associated with a low density of trees, an open canopy, and a small amount of woody vegetation cover, which allow greater sunlight and more herbaceous forage for pocket gophers (Himes 1998, p. 43; Melder and Cooper 2015, p. 75).

Baird's pocket gophers also create the burrow systems in which LPSs are most frequently found (Rudolph and Conner 1996, p. 2; Rudolph and Burgdorf 1997, p. 117; Himes 1998, p. 42; Rudolph et al. 1998, p. 146; Rudolph et al. 2002, p. 62; Himes et al. 2006, p. 107), and the snakes use these burrow systems as nocturnal refugia and hibernacula, and to escape from fire (Rudolph and Burgdorf 1997, p. 117; Rudolph et al. 1998, p. 147; Ealy et al. 2004, p. 386; Rudolph et al. 2007 p. 561; Pierce et al. 2014, p. 140). From 74 percent to greater than 80 percent of radio-tagged LPS relocations have been underground in pocket gopher burrow systems (Ealy et al. 2004, p. 389; Himes et al. 2006, p. 107). In Louisiana, habitat selection by LPS seems to be determined by the abundance and distribution of pocket gophers and their burrow systems (Rudolph and Burgdorf 1997, p. 117). Active LPS occasionally use debris, logs, and low vegetation as temporary surface shelters (Rudolph and Burgdorf 1997, p. 117; Himes 1998, p. 26; Ealy et al. 2004, p. 386); however, most LPS disturbed on the surface retreat to nearby burrows (Rudolph and Burgdorf 1997, p. 117). LPS also minimally use decayed or burned stumps, or nine-banded armadillo (*Dasypus novemcinctus*) burrows as underground refugia (Ealy et al. 2004, p. 389).

Baird's pocket gophers appear to prefer well-drained, sandy soils with low clay content in the topsoil (Davis et al. 1938, p. 414). Whether by choice for burrowing efficiency or in pursuit of Baird's pocket gophers (or likely both), LPS also occur most often in sandy soils (Wagner et al. 2014, p. 152). In Wagner et al.'s study, modelling of LPS habitat revealed that in addition to suitable forest structure and herbaceous vegetation, specific soil characteristics are an important determinant of LPS inhabitation. Wagner et al. (2014, entire) developed a Landscape-scaled Resource Selection Functions Model of Potential Louisiana Pinesnake Habitat (LRSF-Model) using available LPS location data with county and parish soil survey data as independent variables to more accurately identify the percentage of certain soil characteristics that were selected from what was available in the landscape, indicating preference. The snakes were found to prefer soils with high sand content and a low water table (Wagner et al. 2014, p. 152). In a separate modelling study, using essentially the same dataset but a different study method, Duran (2010, p. 11) also found that LPS prefer sandy, well-drained soils, confirming the validity of the LRSF-Model, originally proposed in 2009 (Wagner et al. 2009, entire).

The fire-climax park-like conditions of typical LPS habitat are created and maintained by recurrent, low-intensity ground fires that occur approximately every 3 to 5 years. In the absence of recurrent fire, growth of woody midstory species is increased, and conditions supporting the LPS's prey species are lost due to shading of herbaceous vegetation. Using radio-telemetry in Bienville Parish, Louisiana, Himes et al. (2006, p. 107) recorded wild-caught (i.e., not captive-bred) LPS (nine adults and one juvenile) most frequently in pine forests (56 percent), followed

by pine plantation (23 percent) and clear-cuts (9 percent). It should be noted, however, that across all sites, snakes appeared to select areas with few large trees (7 to 9 trees per plot) that were approximately 0.1 ac (0.04 ha) in size, resulting in less canopy closure and more light penetration, which supports increased understory vegetation growth and therefore more pocket gophers (Himes et al. 2006, pp. 108-110; 113) regardless of the type of wooded land. In a 2-year (2004-2005) trapping study of three locations (two were mixed long leaf/loblolly pine stands being managed specifically for LPS habitat, and one was a loblolly pine plantation managed for fiber tree production), Reichling et al. (2008, p. 4) found the same number of LPS in the pine plantation (n=2) as one of the mixed pine stands managed for LPS (n=2); however, of all the three trapping locations studied, the greatest number of snakes was found in the second mixed pine stand managed for LPS (n=8). In addition, the snakes found in pine plantation conditions by Reichling et al. appeared thin or emaciated (indicating they probably had not fed recently), and were not recaptured in that habitat, which may have indicated they were moving through these sites (Reichling et al. 2008, pp. 9, 14). Further trapping at the same sites since the study has produced 17 and 9 more LPS for the first and second beneficially managed stands, respectively, and only 3 more for the plantation site (Pierce 2015, unpub. data).

Life history

Louisiana pinesnakes appear to be most active March through May and September through November (especially November), and least active December through February and during the summer (especially August) (Himes 1998, p. 12). During the winter, LPS use Baird's pocket gopher burrows as hibernacula (Rudolph et al. 2007 p. 561; Pierce et al. 2014, p. 140). In a study conducted by Pierce et al. (2014, pp. 140, 142), the species did not use burrows communally, and they did not exhibit fidelity to hibernacula sites in successive years. LPS observed in east Texas appear to be semi-fossorial and essentially diurnal, and were also relatively immobile (i.e., moved less than 33 ft (10 meters (m)) on 54.5 percent of the days monitored (Ealy et al. 2004, p. 391). In one study, they spent, on average, 59 percent of daylight hours (sunrise to sunset) below ground, and moved an average of 541 ft (163 m) per day (Ealy et al. 2004, p. 390). Adult males in a Louisiana study by Himes et al. moved an average of 495 ft (150 m) daily (longest = 3,802 ft (1,159 m)), adult females 348 ft (106 m), and juveniles 112 ft (34 m) (Himes 1998, p. 18). Himes et al. (2006, p. 107) documented an average home range size of 82 ac (33.2 ha) (range 16 to 267 ac (6.5 to 108 ha)) for the LPS. Himes et al. also found that adult males had larger average home ranges (145 acres (ac) (58.7 hectares (ha))) than females (25 ac (14 ha)) and juveniles (13 ac (5.5 ha)) (Himes 1998, p. 18).

Baird's pocket gopher is the primary prey of the LPS (Rudolph et al. 2002, p. 58), comprising an estimated 53 percent of available individual prey records (75 percent of total prey biomass) (Rudolph et al. 2012, p. 243). The LPS exhibits specialized prey handling behavior for the burrow-dwelling pocket gopher not common among constricting snake species (Rudolph et al. 2002, pp. 59-61). The LPS is also known to eat eastern moles (*Scalopus aquaticus*), cotton rats (*Sigmodon hispidus*), deer mice (*Peromyscus* sp.), harvest mice (*Reithrodontomys* sp.), and turtle (probably *Trachemys scripta*) eggs (Rudolph et al. 2002, p. 59; Rudolph et al. 2012, p. 244).

LPS sexual maturity is attained at an approximate length of 4 ft (120 cm) and an age of approximately 3 years (Himes et al. 2002, p. 686). The LPS is an egg-layer (oviparous), with a gestation period of about 21 days (Reichling 1988, p. 77), followed by 60 days of incubation. Having the smallest clutch size (three to five) of any North American colubrid snake, the LPS exhibits a remarkably low reproductive rate (Reichling 1990, p. 221). However, the LPS produces the largest eggs (generally 12 cm (5 in) long and 5 cm (2 in) wide) of any U.S. snake (Reichling 1990, p. 221). It also produces the largest hatchlings reported for any North American snake, ranging 18 to 22 in (45 to 55 cm) in length, and up to 3.77 ounces (oz) (107 grams (g)) in weight (Reichling 1990, p. 221). No LPS nests have been located in the wild. Captive LPS can live over 30 years, but females have not reproduced beyond the age of 18 years (Reichling and Schad 2010, p. 5).

Historical and Current Distribution

The Louisiana pinesnake historically occurred in portions of northwest and west-central Louisiana and extreme east-central Texas (Conant 1956, p. 19). This area coincides with an isolated, and the most westerly, occurrence of the longleaf pine ecosystem and is situated west of the Mississippi River. Most of the sandy, longleaf pine-dominated savannahs historically inhabited by the LPS had been lost by the mid-1930s (Bridges and Orzell 1989, p. 246; Frost 1993, p. 30). After virgin longleaf pine was cut, it rarely regenerated naturally. In some parts of the Southeast, free-ranging hogs depredated the longleaf pine seedlings, and fire suppression allowed shrubs, hardwoods, and loblolly pine to dominate (Frost 1993, pp. 34-36). The naturally maintained open structure and abundant herbaceous vegetation characteristic of the historical longleaf pine forests was diminished or lost, and, therefore, it is likely that undocumented populations of this species historically occurred but were lost before 1930.

The U.S. Forest Service (USFS), Southern Research Station (SRS), Wildlife Habitat and Silviculture Laboratory in Nacogdoches, Texas, has compiled and maintains a historical records database of all known LPS locations (excluding telemetry data). According to that database, 267 occurrence records of 235 individual LPS have been verified from 1927 through December 21, 2015 (excluding reintroductions), all from Louisiana and Texas (Pierce 2015, unpub. data). By comparison, for the Florida pinesnake (*Pituophis melanoleucus mugitus*), a species with a four State range (Ernst and Ernst 2003, p. 281), there are 874 records of occurrence through 2015 in the State of Florida alone (Enge 2016, pers. comm.). Similarly, there are approximately 395 total records of black pinesnakes (*Pituophis melanoleucus lodingi*) since 1932 (Hinderliter 2016, pers. comm.).

Based on the LPS database, there are records from seven parishes in Louisiana (Beauregard, Bienville, Jackson, Natchitoches, Rapides, Sabine, and Vernon) and 11 counties in Texas (Angelina, Hardin, Jasper, Nacogdoches, Newton, Polk, Sabine, San Augustine, Trinity, Tyler, and Wood) (Map 1). Previous LPS reports that are not included in this database are: single records for Calcasieu and Jefferson Davis Parishes in Louisiana (Williams and Cordes 1996, p. 35), considered suspect (Pierce 2015, unpub. data; Thomas et al. 1976, pp. 253–254; Walls 2008, pers. comm.); a single record from Cherokee County, Texas, which was erroneous (Pierce 2009, pers. comm.); single records from Montgomery and Walker Counties in Texas reclassified as *Pituophis catenifer* (Pierce 2008, pers. comm.); two records from Rapides Parish, Louisiana, and

one from Caldwell County, Texas, from the 1960s considered not verifiable (Reichling 2012, pers. comm.; Thomas et al. 1976, pp. 253–254).

Despite being primarily diurnal, the LPS's apparent rarity, secretive nature, and preference for occupying pocket gopher burrow systems has made it difficult to generate extensive natural history information (Ealy et al. 2004, pp. 383–384). Trapping results are functions of trap location selection, trap success, and true presence or absence; thus trapping data only approximate LPS use of an area, but are the best available estimate. Currently trapping is the only standardized and most effective known method for surveying LPS. While it is the most effective, it is also expensive and labor intensive. Trapping for LPS involves the use of multiple sets of drift fences with box traps in an area either known to be inhabited by LPS or that appears to have suitable habitat. Box and funnel traps, with and without drift fences, are effective in catching snakes similar in size, and related to the LPS, including the bullsnake (*Pituophis catenifer sayi*), black pinesnake, Florida pinesnake, and northern pinesnake (*Pituophis melanoleucus melanoleucus*) (Burgdorf et al. 2005, p. 424; Fitch 1951, p. 80; Yager et al. 2005, p. 24; Zappalorti 2016, p. 7; Enge 2016, pers. comm.).

Since 1993, extensive Louisiana pinesnake trapping has been conducted at first near recent recorded occurrences of the species that appeared to be in suitable habitat, and then more broadly, in other locations of varying habitat conditions within the snake's historical range (Rudolph et al. 2006, p. 464) by the USFS, the U.S. Army, the Memphis Zoo, and the Louisiana Department of Wildlife and Fisheries (LDWF). In total, trapping during 1993–2015 from throughout the historical range of the LPS has resulted in 101 unique individual captures. Supported by rangewide trapping results and the historical records database, Rudolph et al. (2006, p. 467-469) concluded that the failure to document existing LPS populations at known historical localities, coupled with the degradation and fragmentation of habitat in those areas, indicates that the LPS had been extirpated from significant portions of its historical range. Three parishes (Beauregard, Jackson, and Rapides) in Louisiana, and seven counties (Hardin, Nacogdoches, Polk, Sabine, San Augustine, Trinity, and Wood) in Texas, are now considered unoccupied by the LPS. Rudolph et al. (2006, pp. 467-469) determined that six occupied areas were in existence in 2006. In 2007, an area on the Kisatchie District of the Kisatchie National Forest (KNF) in Louisiana was determined to be occupied by the LPS. Based on 2014 analysis (and reaffirmed by 2016 analysis) of occurrence records of counties or parishes with multiple observations since 1993, six natural, potentially extant, populations of LPS occur in four parishes (Bienville, Natchitoches, Sabine, and Vernon) in Louisiana, and three counties (Angelina, Jasper, and Newton) in Texas. LPS habitat currently considered occupied (based upon 1993–2015 occurrence data) is primarily concentrated on public lands controlled by the Department of Defense (DOD) (Joint Readiness Training Center and Fort Polk [Fort Polk] and Peason Ridge), the USFS (KNF and Angelina National Forest [ANF]), and privately owned industrial timberlands in Louisiana and Texas. There is also a reintroduction feasibility-study population of LPS that has been established from captive-bred snakes in Grant Parish, Louisiana, on KNF lands.

To estimate the size of occupied habitat areas, all LPS records from 1993 to 2015 (Pierce 2015, unpub. data) containing location data and meeting the criteria established below (157 records), were plotted in a Geographic Information System (GIS). Using ArcMap (Version 10.2.1), a

minimum convex polygon (MCP) was drawn around clusters of records, and a 0.6-mile (mi) (1.0-kilometer (km)) buffer was drawn around each MCP, resulting in the estimated occupied habitat area (EOHA) for LPS represented by that group of records. The MCP was buffered to accommodate the fact that trap locations were not placed on the landscape with the intent of delineating population boundaries. A 0.6-mi (1.0-km) buffer was used because telemetry data indicate this is a reasonable approximation of the area that a LPS uses during 1 or more years (Rudolph 2008a, pers. comm.). After discussions with experts, including Dr. Craig Rudolph and members of the Association of Zoos and Aquariums (AZA), the Service developed criteria to determine the data and methodology to be used for estimating the boundaries of the EOHAs.

The original purpose of the EOHAs designation was to match proactive habitat management activities to areas most likely to be currently occupied by the LPS (U.S. Fish and Wildlife Service 2014, p. 8). Based on the previously described methodology, the following EOHAs have been delineated (Map 1): (1) The Bienville EOHA located on privately owned industrial timberlands in Bienville Parish, Louisiana; (2) the Kisatchie EOHA located on USFS lands (the Kisatchie Ranger District of the KNF in Natchitoches Parish, Louisiana); (3) the Peason Ridge EOHA located on DOD lands (Vernon and Sabine Parishes) and a small amount of private lands (inholdings) in Louisiana; (4) the Fort Polk/Vernon EOHA located on DOD lands (Fort Polk), USFS lands (the Vernon Unit/Calcasieu District of the KNF), and a small amount of private lands (inholdings) in Vernon Parish, Louisiana; (5) the Scrappin' Valley EOHA located primarily on privately owned timberlands in Newton County, Texas; (6) the Angelina EOHA located on USFS lands (the southern section of ANF in Angelina and Jasper Counties) and private lands in Texas; and (7) the Catahoula Reintroduction Feasibility EOHA located on USFS lands (the Catahoula Ranger District of the KNF in Grant Parish, Louisiana). Utilizing the methods described above, the Winn Ranger District of the KNF in Natchitoches Parish, Louisiana, and the Sabine National Forest in Sabine County, Texas, identified in 2008, are no longer considered occupied.

ENVIRONMENTAL BASELINE

The Action Area encompasses the known range of the LPS in its entirety. Additionally, areas outside of the known LPS range with suitable soils were also included to potentially provide additional suitable habitat (shown in Map 1). Therefore, the status of the species within the Action Areas and factors affecting the species' environment within the Action Area are identical to those described in the Species Status sections above. Given the array of federal, state and private landowners, LPS habitat is influenced by a variety of factors including recreation, livestock grazing, commercial and recreational timber harvest. The species has also benefited from multiple factors including prescribed fire, restriction of off-road use, and the results of research and surveys efforts.

The Service evaluated the potential beneficial and adverse effects that the identified Conservation Practices may have to the LPS at the individual, population, and landscape scales. The Service believes that, as implemented, the Conservation Measures should result in improving, minimizing, or eliminating potential adverse effects. However, even with the implementation of the Conservation Measures, some remaining adverse effects will occur to the LPS as described below. Nevertheless, the Service believes that the Conservation Measures, in

concert with the goals and objectives of the WLFW-LPS, should collectively produce a net benefit to the LPS.

The Service acknowledges that a net conservation benefit should occur for species other than the LPS as a result of implementing WLFW-LPS management and restoration activities. However, in the short-term, they may adversely affect individuals of non-covered species that may occur on enrolled properties.

If federally-listed species other than the LPS potentially exist on an enrolling property, then NRCS and the Service will consult with and assist the landowner in tailoring management actions to avoid take, and minimize any disturbance of those species. In the unlikely event that avoidance and minimization measures cannot be identified and implemented to the extent that incidental take cannot be avoided, then separate reinitiation of Section 7 consultation under the ESA would occur. The Service will make every effort to expedite such consultations.

EFFECTS OF THE ACTION

Introduction

The Service has evaluated the identified conservation practice standards in the context of how the individual standards have the potential to produce beneficial and adverse effects to the LPS - at the individual, population, and landscape scales. The Service worked in collaboration with the NRCS to develop specific conservation measures for the three core conservation management practices and the 21 facilitating conservation practice standards included in this opinion. The Service believes that, as implemented, the conservation measures will result in ameliorating, minimizing, or eliminating potential adverse effects. However, even with the implementation of the conservation measures, some remaining adverse effects may occur to the LPS as described below. Nevertheless, the Service believes that the conservation measures in concert with the goals and objectives of the WLFW-LPS Program will collectively produce some beneficial effects to the LPS.

Planning and execution of NRCS' financial assistance to private landowners within the program guidance of the WLFW- LPS Program depends upon the completion of a Conservation Plan. Consequently, the Service recognizes that conservation practice standards will be designed to work synergistically with other conservation practice standards under a conservation management system to achieve the purposes of the selected core management practice. This linkage between conservation practice standards produces benefits and minimizes adverse effects to the species. In some cases, application of several conservation practice standards at the local or landscape scale will produce benefits while simultaneously creating a potential temporary source of risk to individuals. For example, mechanical treatments of habitat at the appropriate scale are expected to result in a positive population response for LPS over the long-term, despite the potential for some level of temporary disturbance to the individuals from the methods used.

Summary of Direct and Indirect Effects

In evaluating the direct, indirect, and cumulative effects of the proposed action, the Service was able to identify and evaluate adverse effects common to the LPS. As such, the Service is able to collectively evaluate the effects and summarize them as described below. It is important to note

that the Service evaluation and determination of these common adverse effects duly considers and incorporates the conservation value of the identified conservation measures jointly developed by the partnership. When Conservation Practices are installed or applied to the land, short-term and long-term positive and/or negative effects may occur to the covered species. The following potential direct and indirect effects have been identified:

1. **VEGETATION MODIFICATION** – The purpose of many conservation practices is to maintain or improve vegetation on the land for a variety of conservation benefits. The installation or application of some conservation practices involves the removal or reduction of unwanted vegetation. Vegetation modification may be permanent or temporary and reoccurring, and may entail complete removal or targeted removal or reduction of undesirable or invasive species.
2. **GROUND DISTURBANCE** – The installation or application of many conservation practices will result in soil surface disturbance and/or compaction. The ground disturbance may involve minor permanent or temporary and reoccurring surface disturbance such as heavy use protection areas, vehicle tires/tracks or livestock movement, or deeper disturbance such as pipeline trenches.
3. **HUMAN DISTURBANCE** – The installation or application of most conservation practices will temporarily or permanently increase the reoccurring presence and/or level of human activities (noise, visual disturbance). Temporary disturbance will occur during installation of structural practices such as pipelines and watering facilities. Long-term increases in human activity will occur where the conservation practice requires regular operation, maintenance, or monitoring.
4. **INVASIVES** – Many conservation practices are applied to remove or control undesirable non- native plants and animals. The installation or application of some conservation practices also has the potential to introduce undesirable species into the area, or enhance the ability of undesirable species present in the area to increase or spread on the site, or be transported from the site.

Temporary and reoccurring ground disturbance, vegetation modification, human disturbance, and increased potential of introduction of invasive plants

Temporary and reoccurring soil and human disturbance and vegetation removal are expected from the implementation of many of the conservation practice standards. This disturbance may result in short-term loss of cover and forage for prey of the LPS; and increase the potential spread or establishment of invasive plants such as Chinese tallow-tree and Chinese privet. For purposes of this analysis, the Service is combining these conservation issues into a single discussion of their potential adverse effects.

Sources of the disturbance would include use of heavy equipment (bush hogs, skidder sprayers, tractors, and other machinery) as well as practices that involve the planting or manipulation of vegetation (examples such as brush management, shrub control, and fire breaks). Human disturbance will most likely always be associated with the operation of heavy equipment, with the exception of minor disturbances caused by spot spraying of undesirable vegetation. Common

potential adverse effects identified by the Service include degradation of habitat conditions and the potential for increased habitat fragmentation. However, the scale of the disturbance and the potential opportunities for colonization of those disturbed sites by invasive plants must be large to create additional habitat fragmentation. In addition, all conservation practices that could cause soil disturbance or promote colonization of invasive species have monitoring and remediation requirements built into their standards to minimize or prevent those effects from occurring.

Temporary adverse effects on individuals can include reproductive isolation, increased levels of stress hormones, reduced prey availability, abandonment of burrows and nests, and reduced shade/cover access. If these risks are realized, individual fitness is reduced and may have population level effects if disturbance is over a broad enough spatial or temporal scale.

Permanent Removal/loss of suitable habitat

Certain facilitating practices (e.g., watering facility, pumping plant, water well, pipeline, and fence) covered in this opinion have the potential to result in the permanent removal/loss of habitat for the LPS.

Most of the structural practices will produce minor localized losses which can be minimized using the identified recommended conservation measure(s). The conservation measure(s) focus on design and planning aspects of the practices so as to avoid large expanses of habitat loss especially from linear practices (e.g., fence lines, water pipelines, etc.), as well as avoid priority LPS habitat (specifically pocket gopher areas), to minimize the adverse effects to the populations.

Estimating Impacts to Individuals of the Covered Species on Enrolled Properties

We do not have data about the degree to which the proposed conservation measures may fail to prevent direct adverse effects to the LPS, such as death or injury by failing to detect and avoid a pocket gopher mound system with an LPS during site preparation. At this time, we believe that the proposed conservation measures would protect at least 90 percent of the LPS and their nests that may occur on properties enrolled under the action (i.e., we assume no more than a 10 percent failure rate for those measures). Due to the unsuitable or marginally suitable habitat conditions at enrolled properties (conditions which warrant the proposed restoration and enhancement practices), the LPS is likely present at low densities, if at all, and occupying a larger-than-average home range. To estimate the extent of potential death/injury that may result from the proposed action, we apply a 10 percent assumed failure rate to available home range data for the LPS that we believe best represent the enrolled properties.

Density data for the LPS are not available. In a Louisiana study Himes (1998) noted that adult males average a home range size of 145 acres, adult females average 25 acres, and juveniles average 13 acres. It is unknown whether the LPS is territorial; however, evidence for territoriality (little to no overlap of male home ranges) has been observed for the eastern indigo snake and the black pinesnake. If we assume the LPS also exhibits territoriality, then we can conservatively assume the male's average home range size of 145 acres would likely encompass the home range of at least one female (a density of 2 snakes per 145 acres). Assuming that properties enrolled in WLFW – LPS support a density less than or equal to this number, direct impacts from restoration activities could yield an estimated death or injury rate of 1 LPS

resulting from the proposed action for every 725 acres enrolled ($1 / ((2 \text{ snakes}/145 \text{ acres}) * 0.1 \text{ failure rate}))$). Lacking data or methods that could support comparable calculations for potential nest destruction, we also conservatively assume (i.e., overestimate) that nest destruction would occur at no more than half the juvenile/adult rate, or 1 nest for every 1,450 acres ($725 \text{ acres} * 2$), since the number of nests depends on the number of females, which we assume represents half the population.

Species response to the proposed action

The Louisiana pinesnake is adapted to avoiding fire and other above-ground disturbances. The LPS's immediate response to above-ground disturbances resulting from the proposed action would be to flee into pocket gopher burrow refugia, reducing most chances of mortality. However, the LPS has limited ability to protect itself from ORV collisions, burrow collapse, tree falls, and road mortality; thus, some individuals may be killed due to ORV collisions, burrow collapse, tree falls, road mortality, and the other noted exposures over the ≥ 30 year time period being considered.

With limited knowledge of the LPS's natural fecundity, it is difficult to determine the LPS response to the direct population effects of mortality. However, we know that the LPS is limited by a low reproductive rate (Reichling 1990, p. 221), having the smallest clutch size of any North American colubrid snake. Despite that limitation, the LPS and its prey appear to be resilient enough to persist in areas of suitable habitat such as those within the proposed action area where compatible silviculture has previously occurred. Creation, restoration, and enhancement of desired habitat structure will likely facilitate some adult and juvenile LPS to reoccupy previously abandoned lands/habitats, and new populations and associated habitats would be created which will contribute to the recovery and conservation of the species. Implementation of the WLFW program may have a temporary impact to the LPS and its prey in the form of harm and/or harassment; however, benefits from the creation, restoration, and enhancement of habitat will produce a conservation net gain for the species.

Interrelated and Interdependent Activities

We must consider the effects of other federal activities that are interrelated to, or interdependent with, the proposed Action (50 CFR §402.02). Interrelated actions are part of a larger action and depend on the larger action for their justification. Interdependent actions have no independent utility apart from the action under consideration. The proposed Action is one of several initiatives (e.g., the Longleaf Pine Initiative in Louisiana by NRCS) to restore longleaf pine habitats, but does not depend on these other initiatives for its justification, nor does the utility of these other initiatives depend on the Action. At this time, we are unaware of federal actions that satisfy the definitions of interrelated and interdependent actions that will not undergo Section 7 Consultation in the future or that are not already included in the environmental baseline. We address non-federal actions that may affect the LPS in the Action Area under Cumulative Effects.

Summary of Effects

Habitat maintained and restored by landowner participation in the WLFW - LPS will increase the optimal matrix of habitat for the LPS and its prey, thereby reducing potential isolation between populations. Implementation of the conservation practices and associated conservation measures

within the action area is expected to increase the amount and quality of suitable LPS habitat and its prey on private lands, thereby furthering recovery and conservation goals. Although longleaf pine stands exist in the project area, pine plantations also exist, creating isolation and fragmentation between populations.

Natural regeneration of more open pine stands will be promoted, and the WLFW - LPS is designed to provide a mosaic of habitat, retention of forest cover, as well as the strategic recruitment and expansion of populations of LPS and its prey within the landscape of the identified project area as a means of combating the negative effects of forest fragmentation. The implementation of these conservation measures should carry much greater long-term positive effects such as enhancing occupied habitat through restoration of native grasses and forbs and natural canopy structure.

Creation, restoration, and enhancement of additional habitat may facilitate some adults and/or juveniles to reoccupy previously abandoned lands/habitats, and new populations and associated habitat components will be created which will contribute to the recovery and conservation of the species. Implementation of the described management practices may have a temporary impact to the LPS in the form of harm and/or harassment; however, benefits from the creation, restoration and maintenance of habitat, especially when coupled with established conservation measures, will outweigh any temporary adverse impacts associated with those practices.

CUMULATIVE EFFECTS

Cumulative effects include the impacts of future State, local, or private actions that are reasonably certain to occur in the action area considered in this Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Numerous non-federal actions that could affect the LPS are reasonably certain to occur within the action area. These will typically include silviculture, agriculture, grazing activities, and urban development. For example, the conversion of native southern pine forests to intensively managed pine forests (planted pine plantations or regenerated forests) is anticipated to continue in the future (Bailey and Smith 2007), although projected conversion rates vary and appear to have declined over the past decade compared to rates documented in the 1980s and 1990s. In addition, habitat for the LPS will continue to degrade from fire suppression and/or ineffective use of prescribed fire. Funding, staff, and smoke management issues substantially constrain the ability of public and private land managers to adequately maintain and implement prescribed fire programs.

Other initiatives and incentives to conserve and restore longleaf pine forests within the range of the LPS, including the WLFW-LPS action area, are in progress, such as the ecosystem restoration effort in the Kisatchie National Forest, which is a federal action subject to consultation. Other initiatives, such as the Partners for Fish and Wildlife Program's West Central Louisiana Longleaf Prairie Focus Area, a Service effort, are promoting voluntary silvicultural practices on industrial and private timber lands that are beneficial to LPS and other longleaf pine-associated species. These practices include the use of prescribed fire, lower basal

area after thinning, lower planting densities, increased planting of longleaf pine, mid-rotation woody brush control with herbicides, and planting plans that provide a continuous supply of early-age planted pines within the range of LPS.

Each of these future activities could contribute to adverse and beneficial cumulative effects on LPS or their habitat in the action area. The Service has proposed listing the LPS under the ESA and will be working with the States, Federal partners and private landowners to develop best management practices to minimize and avoid the adverse effects of many of these future actions and to ultimately conserve the LPS. Implementation of the strategy will vary by State and it is impossible to predict the success of the effort at this time. However, cumulatively, we anticipate these efforts, including the WLFW – LPS program, may provide a net conservation benefit to the LPS as well as other species that co-occur with them.

CONCLUSION

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's conference opinion that the NRCS WLFW-LPS Program, as proposed, is not likely to jeopardize the continued existence of the LPS.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation under section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behaviors which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity, under the terms of section 7(b)(4) and section 7(o)(2). Taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The prohibitions against taking the species found in section 9 of the ESA do not apply unless the species is listed. However, the Service advises the NRCS to consider implementing the following reasonable and prudent measures. If this conference opinion is adopted as a biological opinion following a listing of the LPS, or a designation of critical habitat, these measures, with their implementing terms and conditions, will be non-discretionary.

If the LPS is listed under the ESA, those measures described below and any other measures deemed necessary because of future changes in the proposed action's effects will become non-discretionary and must be undertaken by the NRCS so that they become binding conditions of any grant or permit issued to the applicants, as appropriate, for the exemption in section 7(o)(2)

to apply. The NRCS will have a continuing duty to regulate the activity covered by this incidental take statement, if the NRCS fails to assume or implement the terms and conditions or fails to require the landowner to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the NRCS or landowner must report the progress of the action and its impact on the LPS to the Service as specified in the incidental take statement [50 CFR 402.14(I)(3)] if the LPS is listed under the ESA.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

The LPS would be at most risk from vehicle or equipment encounters when they are on the surface moving between gopher burrow complexes. The Service expects some instances of incidental take of LPS will be difficult to detect because snakes located underground could also be killed, injured, or stressed by actions above the soil surface, such as burrow collapse caused by crossing ORVs or forestry management equipment, and the take would likely not be measurable. Based on Fort Polk's Tunnel Collapse Pilot Study (Army 2015, Appendix B), common knowledge of forestry and land management practices, and the low likelihood of LPS use of formerly unsuitable sites, survival of LPS in pocket gopher tunnels crossed by vehicles, mowers, or other mechanical equipment is expected to be high based on low rates of tunnel collapse. In some instances, mechanical mowing may be used within non-forested portions of any enrolled property to control woody encroachment that is not controlled by prescribed fire annually. Earth-moving equipment may also be used to prepare a new site for initial planting. Accordingly, the Service anticipates that implementation of the proposed actions may result in take of the LPS in the form of injury and mortality due to harm that may be attributable to encounters with vehicles both on- and off-road during land management activities, and forest management activities (*e.g.*, establishment of firebreaks, brush management, timber harvest). Such encounters may occur above-ground via "road kills" or tree removal and below-ground via pocket gopher tunnel collapse.

Because density data for the Louisiana pinesnake are not available, the Service used a Louisiana study (Himes 1998) of home range size of LPS to determine the level of incidental take that would be likely to occur based on the anticipated effects of the proposed action. The Service estimates that no more than one LPS for every 725 acres enrolled and no more than one nest for every 1,450 acres enrolled in the WLFW-LPS program would be taken by the proposed actions as previously discussed in the associated conference opinion. Take is not likely to occur in habitat not occupied by pocket gophers or on unsuitable soils for LPS (see Appendix IV).

The Action is expressly intended to benefit the LPS, which are likely either absent from, or present in low numbers on, properties enrolled in WLFW agreements due to degraded habitat conditions. The proposed conservation measures should limit incidental taking to the per-acre rates specified above within the species range. If the LPS is listed, enrolled acreage within the listed range of the LPS applies to taking in the listed range. The amount of take we anticipate is relative to the Action Area as a whole within the applicable range of the LPS for its duration; however, per-acre rates of incidental take exceeding those specified above on an individual landowner agreement should prompt a review of the agreement and its conservation measures.

Although we believe that take (dead or injured animals) resulting from heavy equipment on an enrolled property may prove difficult to detect, we are unable to define a practical surrogate measure to circumvent this difficulty for this proposed action. The proposed activities (*e.g.*, site preparation or forest stand improvement with heavy equipment) that may cause the adverse effects also facilitate improvements in habitat conditions that support the LPS and its prey. Using habitat area as a surrogate for individuals of a species that is difficult to detect is often useful for actions with well-defined action areas and project limits. However, site specific locations for the WLFW-LPS program would be based on a currently unknown level and distribution of future enrollment; therefore a surrogate measure of take based on the spatial extent of adverse habitat effects that could serve as a trigger for reinitiating consultation is not applicable in this evaluation. Further, setting such a trigger would unnecessarily cap the spatial extent of habitat restoration that could be accomplished without reinitiating consultation. The purpose of the Action is to benefit the LPS and other species associated with longleaf pine habitats. Documenting take that exceeds the per-acre rates specified above annually or cumulatively for the duration of the Action will trigger a reinitiation of this conference.

If the LPS is listed, the duration of the incidental take exemption provided by this ITS confers to each individual landowner agreement implemented under the Action and is effective for the duration of each agreement plus an additional 30 years provided all conservation measures are maintained and reporting requirements are met.

EFFECT OF THE TAKE

In the accompanying conference opinion, the Service determined that the level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

Minimize the adverse impacts of the proposed conservation practices while maximizing the long term benefits of the WLFW-LPS Program.

TERMS AND CONDITIONS

1. The NRCS should implement, as proposed, the conservation measures jointly developed between the Service and the NRCS.
2. The NRCS should annually report to the Service, by November 30th of each year, the information as outlined under the Administrative Management section of this opinion.
3. If the LPS is listed, the NRCS should provide and communicate the terms and conditions of this Opinion to all private landowners signing on contracts under the Working Lands for Wildlife including the requirement for keeping the take exemptions for the period covered by this Opinion.

4. The NRCS should instruct equipment operators to avoid any snakes. If one is encountered, operations should be temporarily halted until the snake moves out of harm's way.
- 5.
6. Because of the inherent uncertainty of take estimates for a semi-fossorial and rare species such as LPS, NRCS or its clients should inform the Service of any observed LPS injury or mortality within 72 hours and meet with the Service if requested. Care should be taken in handling sick or injured wildlife to ensure effective treatment and in the handling of dead specimens to preserve biological materials for later analysis.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species, such as Federal funding provided through USDA and NRCS Programs. Conservation recommendations are in addition to the NRCS conservation measures discussed in this Opinion and are discretionary agency actions. The Service offers the following conservation recommendations:

- NRCS should meet with the Service on at least an annual basis to evaluate the progress, successes, and challenges of the implementation of the WLFW-LPS. This may occur as part of the annual reporting process for WLFW-LPS.
- The Service requests that NRCS provide assistance and full support in the Service's effort to develop and execute projects that benefit the LPS, such as Candidate Conservation Agreements with Assurances and/or Safe Harbor Agreements.
- Conservation Plans for enrolled landowners should be written for at least 10 years to provide guidance to the landowner beyond the contract period.
- Develop an implementation process to ensure local NRCS and affected Service offices have the appropriate level of training and understanding of the conservation measures and other operational components identified in the Opinion. The Service's Partners for Fish and Wildlife Program will closely coordinate with NRCS to help implement the WLFW-LPS and related conservation efforts.
- As the science support and monitoring elements of the WLFW-LPS Program begin to produce information and data, NRCS will share this information with a wide range and diverse collection of partners (State Fish and Wildlife Agencies, Association of Fish and Wildlife Agencies, and others) to further enhance the conservation outcomes of the WLFW-LPS Program.
- The Service would like to reaffirm and express strong support for NRCS' use of Conservation Practice 338, Prescribed Fire. Prescribed fire is one of the top priorities for LPS habitat restoration and conservation. NRCS should consider giving greater priority to funding landowners who are willing to do growing season burns over cool

season burns. Also if NRCS pays for more than one burn on the same acre, priority should be given to a landowner who is willing to vary the time of year when they conduct the prescribed burn.

REINITIATION-CLOSING STATEMENT

This concludes the Conference Opinion for the NRCS Working Lands for Wildlife - Louisiana pinesnake program. The NRCS may ask the Service to confirm the Conference Opinion for the LPS as a Biological Opinion if the LPS is listed or critical habitat is designated. The request must be in writing. During review of the proposed action, if the Service finds that there have been no significant changes in the action as planned or in the anticipated benefits or adverse effects analyzed herein, or information used, the Service will confirm the Conference Opinion as a Biological Opinion and no further Section 7 consultation on the proposed action will be necessary. The incidental take coverage under that Biological Opinion will be effective for the duration of each client agreement plus an additional 30 years as long as the participant enrolled in the WLFW-LPS program remains in and regularly reports their compliance and/or until the reinitiation clause is reached.

After listing of the LPS and/or designation of critical habitat and any subsequent adoption of this conference opinion, the NRCS shall request reinitiating of consultation if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action may affect the LPS in a manner or to an extent not considered in this Opinion.

In instances when the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The incidental take statement provided in this conference opinion does not become effective until the species is listed and the conference opinion is adopted as the biological opinion issued through formal consultation. At that time the project will be reviewed to determine whether any incidental take of the LPS has occurred. Modifications of the Opinion and incidental take statement may be appropriate to reflect that take. No take of the LPS may occur between the listing of the species and the adoption of the conference opinion through formal consultation.

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Appendix I

NRCS Conservation Planning

The NRCS works with landowners through conservation planning and assistance designed to benefit the soil, water, air, plants, and animals that result in productive lands and healthy ecosystems. The NRCS's natural resources conservation programs help people reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. Public benefits include enhanced natural resources that help sustain agricultural productivity and environmental quality while supporting continued economic development, recreation, and scenic beauty. All conservation programs are voluntary and offer technical assistance and may offer financial incentives for planning and implementing conservation systems.

Conservation Planning Process

Local NRCS conservation planners develop conservation plans for clients that address environmental resource concerns on private, non-Federal, or Tribal lands. NRCS conservationists help individuals and communities to take a comprehensive approach to planning the proper use and protection of natural resources on these lands through a nine-step planning process described in the NRCS "National Planning Procedures Handbook" and illustrated in Figure 1.

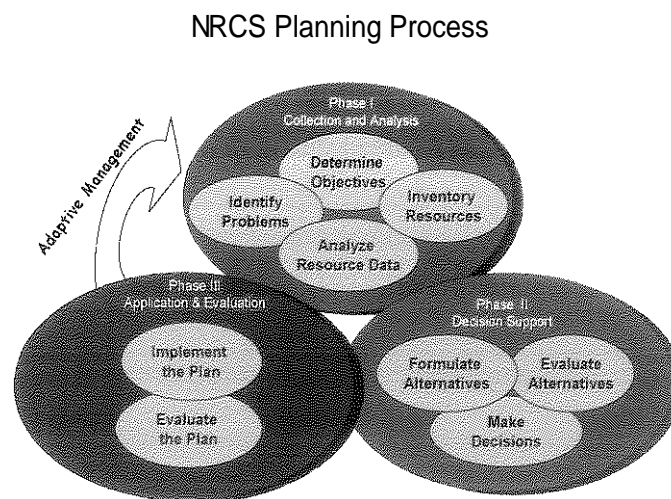


Figure 1. NRCS Planning Process

The planning process is initiated when a client requests NRCS assistance to address one or more resource concerns usually on their private property and/or leased lands. Beginning with the initial site visit, the NRCS planner and client will complete the following nine steps in developing and implementing a conservation plan for the property. These iterative steps are a process that blends the objectives of the land owner, NRCS, and environmental laws:

Phase I - Collection and Analysis

Step 1 - Identify Problems and Opportunities

Identify resource problems, opportunities, and concerns in the planning area.

Step 2 - Determine Objectives

Identify and document the client's objectives.

Step 3 - Inventory Resources

Inventory the natural resources and their condition, and the economic and social considerations related to the resources. This includes on-site and related off-site conditions.

Step 4 - Analyze Resource Data

Analyze the resource information gathered in planning Step 3 to clearly define the natural resource conditions, along with economic and social issues related to the resources. This includes problems and opportunities.

Phase II- Decision Support

Step 5 - Formulate Alternatives

Formulate alternatives that will achieve the client's objectives, solve natural resource problems, and take advantage of opportunities to improve or protect resource conditions.

Step 6 - Evaluate Alternatives

Evaluate the alternatives to determine their effects in addressing the client's objectives and the natural resource problems and opportunities. Evaluate the projected effects on social, economic, and ecological concerns. Special attention must be given to those ecological values protected by law or Executive Order.

Step 7 - Make Decisions

The client selects the alternative(s) and works with the planner to schedule conservation system and practice implementation. The planner prepares the necessary documentation.

Phase III - Application and Evaluation

Step 8 - Implement the Plan

The client implements the selected alternative(s). The planner provides encouragement to the client for continued implementation.

Step 9 - Evaluate the Plan

Evaluate the effectiveness of the plan as it is implemented and make adjustments as needed. A financial assistance contract can be modified through this process.

QUALITY CRITERIA, CONSERVATION SYSTEMS AND PRACTICES

In Steps 5 and 6, the planner strives to help the client balance natural resource issues with economic and social needs through the development of a Resource Management System (RMS). An RMS is a combination of Conservation Practices that treat all Resource Concerns to a condition that meets or exceeds Quality Criteria for sustainable land use. Quality Criteria establishes the desired condition for a Resource Concern. An evaluation method (indicator) is chosen to evaluate each Resource Concern, and a target value (Quality Criteria) is established based on the evaluation method. Quality criteria for RMS's (see National Planning Procedures Handbook (NPPH), Subpart D, Section 600.43) are located in the Field Office Technical Guide (FOTG), Section III- <http://efotg.nrcs.usda.gov/treemenuFS.aspx>.

A Resource Concern is an element of the natural resources that may be sensitive to change by natural forces or human activity. Resource Concerns are nationally established soil, water, air, plant and animal resource elements used by NRCS to evaluate the health of the natural resources. The NRCS conducts an inventory of the planning area to determine the current condition of the Resource Concerns as the basis for developing the conservation plan. The NRCS Resource Concerns are nationally established indicators that are used to evaluate the health of the natural resources.

A Resource Problem is identified when a Resource Concern does not meet Quality Criteria.

The client determines which resource problems they are ready, willing and able to treat using Conservation Practices to reach Quality Criteria.

A Conservation System is the implementation of a variety of conservation practices that together address multiple resource concerns. A Conservation Practice is a discrete set of technology used to address a resource problem. A conservation practice may be a structural or vegetative measure or a management activity used to protect or reduce the degradation of soil, water, air, plant or animal resources. Some practices are stand-alone in that they can be implemented to meet a desired condition and not be associated with other practices, such as Prescribed Grazing (NRCS code 328). If the client has the ability to manage livestock in a manner to meet quality criteria, they can simply implement Prescribed Grazing through managing duration and numbers of livestock grazing on a given area. Other practices, such as Fence (NRCS code 382) are facilitating practices, in that they cannot stand alone to treat resource problems; rather they are installed to facilitate other conservation practices. A fence by itself does not do anything for conservation; when installed to facilitate Prescribed Grazing, it facilitates the manager's ability to manipulate livestock to achieve the goals of the practice.

The NRCS planner works with the client to develop and evaluate alternatives that would allow the user to manage the land to meet or exceed quality criteria for each resource concern. The client chooses the alternative consisting of a suite of Conservation Practices best suited to their needs and ability to implement. The suite of practices chosen becomes their Conservation Plan, a record of the client's decisions for the treatment of resource problems. Therefore, it is the client's plan and not the NRCS' plan. The Conservation Plan identifies the conservation practices and a planned schedule for installing or applying the practices. The client can then apply for financial assistance to implement all or a portion of the conservation plan through NRCS, other agencies or through their own funding initiative.

As part of this conservation planning effort, individual environmental reviews called Environmental Evaluations (EE) are completed which inform the conservation planning effort and assist the Agency's compliance with NRCS regulations that implement NEPA. See Environmental Evaluation Worksheet

(NRCS-CPA-52) in Appendix III. The EE is a concurrent part of the planning process in which the potential long-term and short-term impacts of an action on people, their physical surroundings, and the natural environment are, evaluated and alternative actions explored. The EEs and conservation plans are developed to assist the client in making decisions and implementing the conservation practices identified in the conservation plan. A Conservation plan is a record of the client's decision to implement of one or more conservation practices which prescribe the actions necessary to address the identified resource concerns in need of treatment.

Structural conservation practices may have some short term (the construction or implementation phase) negative effects on certain listed species if they are in the action area, such as soil disturbance that can be mitigated through incorporation of conservation measures. The long-term (after construction through the life-span of the practice) effects are positive or beneficial for nearly all conservation practices. However, some practices can have longer-term effects to specific species, such as when the construction of a fire break done in a certain way may create a barrier to movement to sand skinks or other reptilian species. In most cases, long term effects may have "no effect" after the short-term effects have been mitigated for or disappeared.

The NRCS works with land users to plan and implement Resource Management Systems that will maintain or improve the condition and health of the soil, water, air, plant and animal resources for long term sustainability of a quality environment. The NRCS helps the land user understand the potential of the land, determine the current health and condition, and identify existing and potential resource problems.

CONSERVATION PRACTICE STANDARDS

The NRCS conservation practice standards establish criteria for applying conservation technology on the land and set the minimum acceptable level for application of the technology. Each conservation practice has a practice standard that guides the site-specific design. The NRCS issues National conservation practice standards in its National Handbook of Conservation Practices (NHCP), periodically revising them and developing new standards. Before revised or new conservation practice standards are added to the NHCP, they are advertised in the Federal Register for review and comment by the general public.

Each state determines which National conservation practice standards are applicable in their state. States add the technical detail needed to effectively use the standards at the Field Office level, and issue them as state conservation practice standards. State conservation practice standards may be found in Section IV of the FOTG at: <http://efotg.nrcs.usda.gov/treemenuFS.aspx>. At a minimum, each state will review and revise each standard every 5 years.

Conservation Practice Standards include the Name, Code and Unit of Measure for the practice. They also include a Definition of the practice, list the Purpose(s) of the practice, describe the Conditions Where the Practice Applies (as well as where the practice may not apply), identify the minimum Quality Criteria for successfully achieving a single purpose or for multiple purposes, discuss special Considerations, which may be important to the successful operation of the practice after it has been applied, provide guidance for the development of Plans and Specifications used to install the practice, and provide instructions for developing the Operation and Maintenance guidance that will be used after practice installation. Each standard applied under the WLFW-LPS will include application of the conservation measures required through this consultation.

POTENTIAL RESOURCE EFFECTS OF IMPLEMENTING A RESOURCE MANAGEMENT SYSTEM

The potential effects of conservation practices were evaluated in several ways. The NRCS planning process has long been based on the ability of any given conservation practice to effectively address a resource concern. The agency has evaluated all the conservation practices through a Conservation Practice Physical Effects (CPPE) module completed at both the national and state level. This tool evaluates the ability of a conservation practice to address resource concerns and to meet quality criteria.

The NRCS, in collaboration with the Service, reviewed Conservation Practice Standards covered in the consultation (Table 1). We then listed the resource effects that can be expected from implementation of any given conservation practice through a conservation system and evaluated the impact on the LPS. Since the purpose of a resource management system is to improve natural resource conditions, conservation practices will normally have long term beneficial effects on listed species. Practice standards establish the minimum acceptable level of quality that is required to plan, design, install, operate, and maintain conservation practices.

Wildlife Habitat Evaluation Guides (WHEG)

Wildlife Habitat Evaluation Guides (WHEG) are tools that are developed at the NRCS state level, and utilized by field personnel, to assess existing habitat conditions and identify limiting habitat factors in the planning area. WHEGs are species-specific. The objective of the WHEG is to evaluate habitat conditions that provide for the life requisites of the wildlife species under consideration and to inform alternative formulation and effects analysis. It is NRCS policy for each state to have a wildlife habitat evaluation protocol to be used in planning the upland Wildlife Habitat Management Standard (645). The standard also requires that the alternatives address the limiting factors in their order of significance, as indicated by the habitat evaluation. The WHEG's are named in a manner that may use terminology such as "evaluation", "appraisal", "assessment", or "habitat suitability model". They usually take a form similar to Habitat Suitability Index Models (USFWS Ecological Services Manual, Habitat as a Basis for Environmental Assessment, 1980) and often include variables that are relatively easy for non-biologist staff to collect while in the field. Many of these are species-specific for important wildlife common within each state, but there are also some "general" habitat assessment models that evaluate habitat on agricultural working lands where the landowner has not expressed an interest in a particular species.

NRCS has recently completed and established a WHEG for LPS in Louisiana and Texas and it is included below in Appendix II.

Appendix II

Wildlife Habitat Evaluation Guide (WHEG) for the Louisiana pinesnake in the west-central LA and east Texas

This Wildlife Habitat Evaluation Guide (WHEG) is based on the habitat requirements of the Louisiana pinesnake (*Pituophis ruthveni*). It is accepted that managing for this species benefits many other open pine habitat-dependent species (e.g., Bachman's sparrow, Northern bobwhite quail, red-cockaded woodpecker, etc.). This model can be applied to all ecological sites with the potential to support a full range of *Pinus* species even if the Louisiana pinesnake does not currently occupy the habitat.

LA pinesnakes are endemic to the westerly extent of the longleaf pine ecosystem that historically existed in Louisiana and Texas. The following physical and biotic features characterize most suitable habitats:

1. The presence of well-drained, sandy soils, which allow the presence and access to pocket gopher burrows.
2. An abundance of herbaceous ground cover; and
3. A generally open canopy and sparse shrub cover, which allow sunlight to reach the forest floor.

The traditional habitats of the Louisiana pinesnake are natural xeric communities, mostly of the longleaf-pine-scrub oak type, located on sand ridges. The Louisiana pinesnake is generally associated with sandy, well-drained soils; open pine forests, especially longleaf-pine savannah; moderate to sparse mid-story; and a well-developed herbaceous understory dominated by grasses. Its activity appears to be heavily concentrated on low, broad ridges overlain with sandy soils. Baird's pocket gophers (*Geomys breviceps*) appear to be an essential component of Louisiana pinesnake habitat. They create the burrow systems in which the pinesnakes are most frequently found, and serve as a major source of food for the species. Pocket gopher abundance is dependent upon an abundance of herbaceous groundcover and loose, sandy soils. The amount of herbaceous vegetation is related to canopy cover. Generally, a rich ground layer requires a high degree of solar penetration onto the forest floor. Pocket gopher abundance was associated with a low density of trees and an open canopy, which allowed greater sunlight, more understory growth, and better forage for pocket gophers. The historical ecology of these xeric, fire dependent communities has been significantly altered. Louisiana pinesnakes may also be found in habitats such as native grass pastures, old fields containing native grasses and forb, road edges, and right-of-ways supporting pocket gopher populations.

General Directions to the LA pinesnake WHEG: Mark as "N/A" (not applicable) if a habitat factor is absent due to normal seasonal dynamics (e.g., herbaceous species richness decision during the dormant season). If a factor is unknown, mark it with "unknown" and provide a brief explanation in the Additional Notes section. If multiple tracts/fields exist with different conditions and management, score each tract/field separately and prorate totals by acres. Choose best choice for "Existing Condition Value" and "Planned Value" (where applicable). Attach a map(s) showing fields, fences, water locations, pocket gopher/forage and movement areas, on and off-site (if possible) and other features if needed (e.g., impediments to movement).

On a wildlife habitat assessment/evaluation scale of 0 – 1.0 with 1.0 being an optimum score, NRCS Policy requires a 0.5 minimum to meet quality criteria for wildlife habitat. For Working Lands for Wildlife (WLFW), as with any other conservation planning, an alternative that maximizes habitat quality should be planned.

Owner/Operator:	State & Field Office:
County/Parish (T/R/Sec.)	
WHEG completed by:	
Farm Number: Tract Number: Field(s):	Acres (Total):
Contract Period:	Evaluation Date(s):
User Notes: <ol style="list-style-type: none"> 1. Each <i>Project Area (PA)</i> shall be identified on a base map. 2. The PA is the portion of the FSA Tract where treatment for La pinesnake (LPS) is planned. 3. The PA boundary shall be identified using a thick black line, then the PA shall be subdivided into unique <i>Assessment Areas (AA)</i> and the delineation of the AA shall be shown on the base map. 4. Each AA shall be delineated with a dark red line and acres shall be determined and shown on the base map. 5. Portions of the tract and areas on adjoining tracts where treatment for LPS are not planned shall not be assessed, regardless of ecological value to the LPS, except on portions of the tract or whole tract(s) where treatments are not planned due to optimum existing conditions for the LPS. 6. Each AA should be similar enough in ecological condition (soils, stand density, stand age, etc.) that a single <i>Representative Observation Point (ROP)</i> can be selected and used to score the AA. 7. Each ROP should be documented with GPS, and time-stamped digital photograph(s). 	

<p>8. Data from each ROP represents the condition of the AA as a whole.</p> <p>9. Locations of ROPs are determined with the aid of remote sensed data (e.g., quad maps, soils maps, aerial imagery, etc.) as well as an onsite reconnaissance.</p> <p>10. Subdivision of the project area into AAs need not follow common land unit boundaries nor do AAs have to be contiguous. For example, if two non-contiguous areas have similar characteristics (i.e., would score the same), a single ROP is identified. If two non-contiguous areas are determined to be similar enough for a single ROP they shall be numbered as alpha then numeric (e.g., C-1, C-2, C-3, etc.).</p> <p>11. Each ROP shall be identified on a base map with a black dot.</p> <p>12. The acres of each AA shall be identified on the base map.</p> <p>13. Following scoring of each AA, a weighted average by acres shall be conducted to determine the total score for the project area (see worksheet).</p> <p>14. To not conflict with CLU numbering, AA numbering shall be alpha characters.</p> <p>15. Additional evaluation beyond the minimum criteria provided (e.g., conducting more than one ROP evaluation in an AA) is allowable for any of the vegetative factors (1-5) within this WHEG to accurately measure the existing condition without approval. Variant methods of data collection for factors (1-5) must be approved by your NRCS State Biologist.</p>				
Variable(s) (if not used in this State, enter NA in Existing Condition Value column)	Value Range	Existing Condition Value	Recommended Conservation Practice(s)	Planned Value
Habitat & General Conditions Variables – assign value if pocket gopher habitat is present or potentially present				
Section A. VEGETATION – total value for all 5 variables = 0.75				
(1) Basal Area (BA) (BA = sq. ft./acre at DBH) = 0.15 e.g., BA b) $0.75 \times 0.15 = 0.1125$				
User Notes:				
<ol style="list-style-type: none"> Basal Area (BA) is determined at the ROP using an appropriate device (e.g., Angle Gauge, 10-factor Prism, penny coin) and shall not be visually estimated. Only live trees will be used for BA. BA is not limited to Pine and may include hardwoods. Include this question if assessing a cutover forest stand to be re-forested. 				
a) ≤ 60 BA	1.0			
b) Cutover forest stand	0.75			
c) 61 – 80 BA	0.6			
d) 81 – 90 BA	0.4			
e) > 90 BA	0.25			
Field Notes:				
(2) Non-herbaceous Foliar Cover (%) = 0.15				

e.g., c) $0.5 \times 0.15 = 0.075$				
User Notes:				
<ol style="list-style-type: none"> Percent midstory/foliar cover is determined by conducting a visual estimate using a 37.25 ft. radius plot (1/10 acre) with the ROP as the plot center. Cover is visually estimated as relative canopy/foliar cover or converted to relative if absolute cover is used. Shrubs are all woody species (including woody vines) ≤ 3" DBH and regardless of height. Mid-season leaf-on condition will be used or predicted. 				
a) <10%	1.0			
b) 10–39%	0.75			
c) 40–59%	0.5			
d) 60–79%	0.25			
e) >80%	0.0			
Field Notes:				
(3) Herbaceous ground cover (%) = 0.25 e.g., a) $1.0 \times 0.25 = 0.25$				
User Notes:				
<ol style="list-style-type: none"> Values represent relative cover determined with visual estimates. If absolute cover estimates are used, the results will be converted to relative cover. Species used for this variable must be herbaceous (grasses, grass-like, and forbs). There is no maximum height limitation for a plant to be included. Herbaceous vines (annual or perennial) should be counted e.g., <i>Coccolus</i>, <i>Ipomoea</i>, <i>Mikania</i>. Woody seedlings and young woody vines are not considered in this measure. Mid-season leaf-on conditions will be used or predicted if the assessment is conducted during the dormant season. 				
a) >80%	1.0			
b) 60–79%	0.75			
c) 40–59%	0.5			
d) 20–39%	0.25			
e) <20%	0.10			
Field Notes:				
(4) Herbaceous species richness (grasses, grass-like, forbs, and legumes) = 0.1 e.g., e) $0.0 \times 0.1 = 0$				
User Notes:				
<ol style="list-style-type: none"> A 37.25 ft. radius plot will be used with the ROP being the center of the plot. The number of different species will be inventoried. Species do not need to be identified nor is there a maximum height limit for an herbaceous species to be counted. Non-climbing herbaceous vines (those individuals that are not climbing within the plot) shall be included in this count. Woody vines (e.g., <i>Rubus</i>, <i>Smilax</i>, <i>Vitis</i>, etc.) regardless of height are not herbaceous 				

species.				
a) >20	1.0			
b) 16–20	0.75			
c) 11–15	0.50			
d) 5–10	0.25			
e) <5	0.0			
Field Notes:				
(5) Noxious and or Invasive plant species % Cover = 0.1 [See USDA Plants (http://plants.usda.gov/java/), Federal and State lists;] e.g., d) 0.25 X 0.1 = 0.025				
User Note:				
1. For each AA, estimate the percent coverage of noxious and or invasive species.				
2. This will be done with a visual estimation of each AA and not done within the 37.25 foot radius plot located at the ROP.				
a) 0 %	1.0			
b) 1 – 5 %	0.75			
c) 5 – 10 %	0.5			
d) 10 – 15 %	0.25			
e) > 15 %	0.0			
Field Notes:				
B. Management				
(6) Prescribed Burning total value = 0.25 e.g., b) 0.75 X 0.25 = 0.1875				
a) Prescribed burning applied in the growing season on a historic fire return interval (state determined).	1.0			
b) Prescribed burning applied in the dormant season on a historic fire return interval (state determined).	0.75			
c) Prescribed burning applied in the growing season, less frequently than historic fire return interval (state determined).	0.50			
d) Prescribed burning applied in the dormant season, less frequently than historic fire return interval (state determined).	0.25			

e) No prescribed burning or single burn with no return interval	0.0			
Field Notes:				
(7) Grazing Management (management that best fits the last 3 years) If grazed, direct bonus is applied to score a) 0.05 b) 0.025 c) No bonus applied				
		Bonus		Bonus
a) Prescribed grazing designed and applied to enhance all LA pinesnake habitat characteristics in the WHEG		0.05		0.05
b) Prescribed grazing designed and applied that enhance less than all LA pinesnake habitat characteristics in the WHEG		0.025		0.025
c) No grazing or uncontrolled and/or season-long livestock access and prescribed grazing is applied without LA pinesnake objectives				
Field Notes:				
Note: Variables 1 – 6 = 1.0 Maximum score is set at 1.0 regardless of bonus				
Habitat and General Conditions score = SUM(Existing Condition Values)				
				Final WHEG Score
<p>Computation from above examples:</p> <p>Section A. Vegetation</p> <p>(1) BA b) $0.75 \times 0.15 = 0.1125 +$ (2) Non-herb foliar cover c) $0.5 \times 0.15 = 0.075 +$ (3) Herb ground cover a) $1.0 \times 0.25 = 0.25 +$ (4) Herb species richness e) $0.0 \times 0.1 = 0 +$ (5) Noxious plant d) $0.25 \times 0.1 = 0.025 +$</p> <p>Section B. Management</p> <p>(6) Prescribed Burning $0.75 \times 0.25 = 0.1875 +$ (7) Grazing a) $+ 0.05$ Grazing b) $+ 0.025$</p> <p>With Prescribed Grazing a) $0.1125 + 0.075 + 0.25 + 0 + 0.025 + 0.1875 + 0.05 = 0.70$</p> <p>With Prescribed Grazing b) $0.1125 + 0.075 + 0.25 + 0 + 0.025 + 0.1875 + 0.025 = 0.675$</p>				

No grazing or no grazing plan: c) $0.1125 + 0.075 + 0.25 + 0 + 0.025 + 0.1875 = 0.65$

Summary Computation Area: If needed, to combine multiple Assessment Areas (AA) into a summarized score by acres assessed.

e.g., AA-A = 200 acres Pine plantation WHEG score = 0.4

AA-B = 100 acres open range WHEG score = 0.85

$((200/300) \times 0.4) + ((100/300) \times 0.85) = (.667 \times 0.4) + (.333 \times 0.85) = 0.267 + 0.283 = 0.55$

WHEG total for Project Area (PA) = 0.55

Variables	Suggested Conservation Practices for Resource Concerns
	<p>Areas rating 0.5 or less, consider the following Conservation Practices</p> <p>Prescribed Burning 338: Use prescribed burning to remove duff layer and set back wood vegetation to an early succession stage. Also use fire early and often in young longleaf pine plantations.</p> <p>Tree/Shrub Site Preparation 490: Site prep to control hardwoods which prepares a better site for longleaf pine, loblolly pine, shortleaf pine, or slash pine. This also reduces the potential for hardwood competition which will preclude the development of native ground cover.</p> <p>Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.</p> <p>Tree and Shrub Establishment 612: Plant longleaf pine or loblolly, shortleaf, and slash pine to provide habitat for the LPS.</p> <p>Restoration and Management of Rare or Declining Habitats 643: Return aquatic or terrestrial ecosystems to their original or usable and</p>

	<p>functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.</p> <p>Early Successional Habitat Development 647: Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.</p> <p>Forest Stand Improvement 666: Manipulate species composition, stand structure, and stocking by cutting or killing selected trees and understory vegetation to appropriate basal area that optimizes sunlight to forest floor.</p>
	<p>Areas rating 0.5 or less, consider the following Conservation Practices</p> <p>Brush Management 314: Plan brush management to control woody species and provide for an early succession habitat designed to meet landowners' goals.</p> <p>Prescribed Burning 338: Use prescribed burning to remove duff layer and set back wood vegetation to an early succession stage.</p> <p>Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.</p> <p>Restoration and Management of Rare or Declining Habitats 643: Return aquatic or terrestrial ecosystems to their original or usable and functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.</p> <p>Early Successional Habitat Development 647: Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.</p> <p>Forest Stand Improvement 666: Manipulate species composition, stand structure, and stocking by cutting or killing selected trees and understory vegetation.</p>
	<p>Areas rating 0.5 or less, consider the following Conservation Practices</p> <p>Brush Management 314: plan brush management to control Woody species and allow for an early succession habitat on rangeland.</p> <p>Prescribed Burning 338: Use prescribed burning to remove duff layer and set back woody vegetation to an early succession stage.</p> <p>Tree/Shrub Site Preparation 490: Site prep to control hardwoods which prepares a better site for longleaf pine or loblolly pine or slash pine. This also reduces the potential for hardwood competition which will preclude the development of native ground cover.</p> <p>Prescribed Grazing 528: Exclude cattle grazing during spring months (March – May) to allow forbs/legumes to flower & fruit before grazing.</p> <p>Range Planting 550: Use range planting following ground disturbing conservation practices as needed and incorporate forbs/legumes into</p>

(3) Herbaceous Ground Cover (%)	the seed mixture.
	Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.
	Restoration and Management of Rare or Declining Habitats 643: Return aquatic or terrestrial ecosystems to their original or usable and functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.
	Early Successional Habitat Development 647: Maintain plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.
	Forest Stand Improvement 666: Manipulate species composition, stand structure, and stocking by cutting or killing selected trees and understory vegetation to appropriate basal area that optimizes sunlight to forest floor.
	<i>Areas rating 0.5 or less, consider the following Conservation Practices</i>
	Brush Management 314: plan brush management to control Woody species and allow for an early succession habitat on rangeland.
	Prescribed Burning 338: Use prescribed burning to remove duff layer and set back woody vegetation to an early succession stage.
	Prescribed Grazing 528: Exclude cattle grazing during spring months (March – May) to allow forbs/legumes to flower & fruit before grazing.
	Range Planting 550: Use range planting following ground disturbing conservation practices as needed and incorporate forbs/legumes into the seed mixture.
	Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.
	Early Successional Habitat Development 647: Maintain plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.
	<i>Areas rating 0.5 or less, consider the following Conservation Practices</i>
	Brush Management 314: Plan brush management to control wood species and provide for an early succession habitat designed to meet landowner's goals.
	Herbaceous Weed Control 315: Removal or control of herbaceous weeds including invasive, noxious and prohibited plants.
	Fence 382: use cross fence to reduce pasture size and make fields more uniform in size and/or production to allow for more uniform grazing.
	Prescribed Grazing 528: Plan rotational grazing to allow more

(5) Noxious and or Invasive plant species	adequate rest time between grazing events and reevaluate stocking rates.
	Heavy Use Area Protection 561: Plan Heavy Use Area Protection around conservation livestock areas (CLA) to minimize impacts of soil compaction and runoff.
	Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.
	Watering Facility 614: use watering facilities to reduce CLA impacts to ecologically sensitive areas (e.g., wetlands) along with Heavy Use Area Protection to reduce or eliminate CLA.
	Early Successional Habitat Development 647: Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.
	Forest Stand Improvement 666: Manipulate species composition, stand structure, and stocking by cutting or killing selected trees and understory vegetation.
	Areas rating 0.5 or less, consider the following Conservation Practices
Prescribed Burning 338: Use prescribed burning to remove duff layer and set back woody vegetation to an early succession stage.	
Fire Break 394: A permanent or temporary strip of bare or vegetated land constructed to minimize the spread of wildfire or to contain prescribed burns.	
Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.	
Restoration and Management of Rare or Declining Habitats 643: Return aquatic or terrestrial ecosystems to their original or usable and functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.	
Upland Wildlife Habitat Management 645: Provide and manage upland habitats and connectivity within the landscape for wildlife.	
Early Successional Habitat Development 647: Maintain plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities	
Areas rating 0.5 or less, consider the following Conservation Practices	
Brush Management 314: plan brush management to control Woody species and allow for an early succession habitat on rangeland.	
Prescribed Burning 338: Use prescribed burning to remove duff layer and set back woody vegetation to an early succession stage.	
Fence 382: use cross fence to reduce pasture size and make fields more uniform in size and/or production to allow for more uniform grazing.	

	Prescribed Grazing 528: Exclude cattle grazing during spring months (March – May) to allow forbs/legumes to flower & fruit before grazing.
	Range Planting 550: Use range planting following ground disturbing conservation practices as needed and incorporate forbs/legumes into the seed mixture.
	Integrated Pest Management 595: A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.
	Watering Facility 614: use watering facilities to reduce Concentrated Livestock Activity (CLA) impacts to ecologically sensitive areas (e.g., wetlands) along with Heavy Use Area Protection to reduce or eliminate CLA.
	Early Successional Habitat Development 647: Maintain plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.

Additional Notes:

Pocket Gopher Burrow Status/Presence (<i>Optional</i> - informational use only)				

Appendix III

NRCS Planning Tools: Environmental Evaluation Worksheet (NRCS CPA 52)

U.S. Department of Agriculture Natural Resources Conservation Service ENVIRONMENTAL EVALUATION WORKSHEET		NRCS-CPA-52 4/2013_REV 3/16		A. Client Name:	
D. Client's Objective(s) (purpose):		B. Conservation Plan ID # (as applicable): Program Authority (optional):			
E. Need for Action:		C. Identification # (farm, tract, field #, etc. as required):			
H. Alternatives					
No Action ✓ if RMS <input type="checkbox"/>		Alternative 1 ✓ if RMS <input type="checkbox"/>		Alternative 2 ✓ if RMS <input type="checkbox"/>	
Resource Concerns					
In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).					
F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)		I. Effects of Alternatives			
No Action		Alternative 1		Alternative 2	
Amount, Status, Description (Document both short and long term impacts)		Amount, Status, Description (Document both short and long term impacts)		Amount, Status, Description (Document both short and long term impacts)	
✓ if does NOT meet PC		✓ if does NOT meet PC		✓ if does NOT meet PC	
SOIL: EROSION					
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	
SOIL: SOIL QUALITY DEGRADATION					
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	
WATER: EXCESS / INSUFFICIENT WATER					
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	
WATER: WATER QUALITY DEGRADATION					
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	
		<input type="checkbox"/> NOT meet PC		<input type="checkbox"/> NOT meet PC	

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	I. (continued)					
	No Action		Alternative 1		Alternative 2	
	Amount, Status, Description <i>(Document both short and long term impacts)</i>	√ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	√ if does NOT meet PC	Amount, Status, Description <i>(Document both short and long term impacts)</i>	√ if does NOT meet PC
AIR: AIR QUALITY IMPACTS						
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
PLANTS: DEGRADED PLANT CONDITION						
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
ANIMALS: INADEQUATE HABITAT FOR FISH AND WILDLIFE						
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
ANIMALS: LIVESTOCK PRODUCTION LIMITATION						
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
ENERGY: INEFFICIENT ENERGY USE						
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		NOT meet PC		NOT meet PC		NOT meet PC
HUMAN: ECONOMIC AND SOCIAL CONSIDERATIONS						

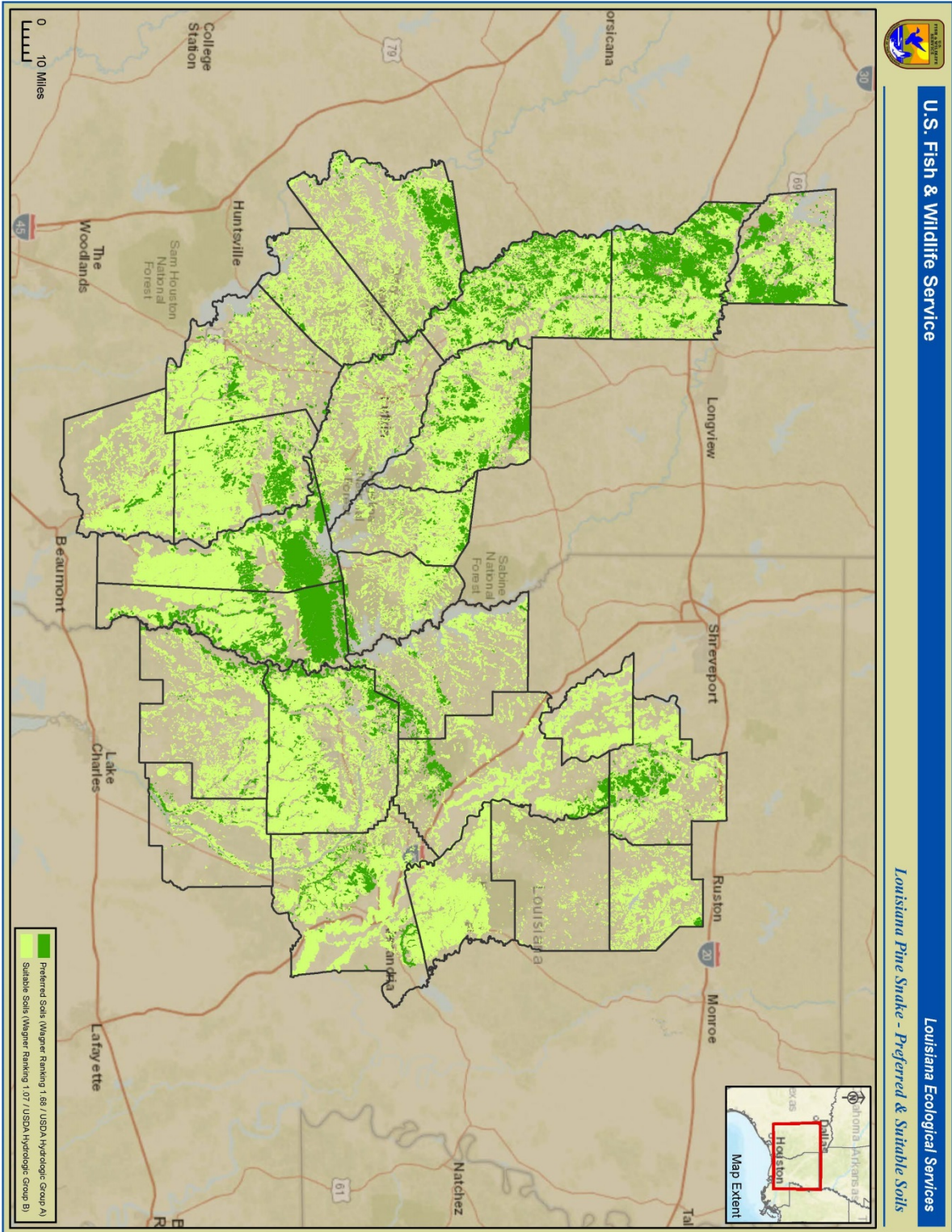
Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.						
In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "*" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.						
G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	No Action		Alternative 1		Alternative 2	
	Document all impacts (Attach Guide Sheets as applicable)	√# needs further action	Document all impacts (Attach Guide Sheets as applicable)	√# needs further action	Document all impacts (Attach Guide Sheets as applicable)	√# needs further action
•Clean Air Act <i>Guide Sheet FS1 FS-2</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Clean Water Act / Waters of the U.S. <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Coastal Zone Management <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Coral Reefs <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Cultural Resources / Historic Properties <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Endangered and Threatened Species <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Environmental Justice <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Essential Fish Habitat <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Floodplain Management <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Invasive Species <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
•Migratory Birds/Bald and Golden Eagle Protection Act <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Natural Areas <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Prime and Unique Farmlands <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Riparian Area <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Scenic Beauty <i>Guide Sheet Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

•Wetlands <i>Guide Sheet</i> <i>Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																											
•Wild and Scenic Rivers <i>Guide Sheet</i> <i>Fact Sheet</i>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																											
K. Other Agencies and Broad Public Concerns	<i>No Action</i>		<i>Alternative 1</i>		<i>Alternative 2</i>																												
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.																																	
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)																																	
L. Mitigation (Record actions to avoid, minimize, and compensate)																																	
M. Preferred Alternative	Preferred alternative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																											
	Supporting reason																																
N. Context (Record context of alternatives analysis)																																	
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.																																	
O. Determination of Significance or Extraordinary Circumstances																																	
Intensity: Refers to the severity of impact. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.																																	
<table border="0"> <tr> <td>Yes</td> <td>No</td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Is the preferred alternative expected to cause significant effects on public health or safety?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?</td> </tr> </table>							Yes	No		<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to cause significant effects on public health or safety?	<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?	<input type="checkbox"/>	<input type="checkbox"/>	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?	<input type="checkbox"/>	<input type="checkbox"/>	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?	<input type="checkbox"/>	<input type="checkbox"/>	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?	<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?	<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.	<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?
Yes	No																																
<input type="checkbox"/>	<input type="checkbox"/>	• Is the preferred alternative expected to cause significant effects on public health or safety?																															
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<input type="checkbox"/>	<input type="checkbox"/>	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?																															
P. To the best of my knowledge, the data shown on this form is accurate and complete:																																	
In the case where a non-NRCS person (e.g. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block to verify the information's accuracy.																																	
<input type="text"/> Signature (TSP if applicable)		<input type="text"/> Title		<input type="text"/> Date																													
<input type="text"/> Signature (NRCS)		<input type="text"/> Title		<input type="text"/> Date																													
If preferred alternative is not a federal action where NRCS has control or responsibility and this NRCS-CPA-52 is shared with someone other than the client then indicate to whom this is being provided.																																	

The following sections are to be completed by the Responsible Federal Official (RFO)		
<p>NRCS is the RFO if the action is subject to NRCS control and responsibility (e.g., actions financed, funded, assisted, conducted, regulated, or approved by NRCS). These actions do not include situations in which NRCS is only providing technical assistance because NRCS cannot control what the client ultimately does with that assistance and situations where NRCS is making a technical determination (such as Farm Bill HEL or wetland determinations) not associated with the planning process.</p>		
Q. NEPA Compliance Finding (check one)		
The preferred alternative:		Action required
<input type="checkbox"/>	1) is not a federal action where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
<input type="checkbox"/>	2) is a federal action ALL of which is categorically excluded from further environmental analysis AND there are no extraordinary circumstances as identified in Section "O" .	Document in "R.2" below. No additional analysis is required
<input type="checkbox"/>	3) is a federal action that has been sufficiently analyzed in an existing Agency state, regional, or national NEPA document and there are no predicted <u>significant adverse environmental effects</u> or <u>extraordinary circumstances</u> .	Document in "R.1" below. No additional analysis is required.
<input type="checkbox"/>	4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects and has been formally adopted by NRCS . NRCS is required to prepare and publish its own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. (Note: This box is not applicable to FSA)	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
<input type="checkbox"/>	5) is a federal action that has NOT been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.
R. Rationale Supporting the Finding		
R.1 Findings Documentation		
R.2 Applicable Categorical Exclusion(s) (more than one may apply)		
7 CFR Part 650 Compliance With NEPA, subpart 650.6 Categorical Exclusions states prior to determining that a proposed action is categorically excluded under paragraph (d) of this section, the proposed action must meet six sideboard criteria. See NECH 610.116.		
<p><i>I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy and based on that made the finding indicated above.</i></p>		
S. Signature of Responsible Federal Official:		
<input style="width: 150px; height: 25px;" type="text"/>	<input style="width: 150px; height: 25px;" type="text"/>	<input style="width: 100px; height: 25px;" type="text"/>
Signature	Title	Date
Additional notes		

Appendix IV

Potential Louisiana pinesnake habitat predicted based on validation model estimates for hydrologic soil groups. Hydrologic Group A = Preferred Soils; Hydrologic Group B = Suitable Soils.



Appendix V

United States Department of Agriculture



Natural Resources Conservation Service
Post Office Box 2890
Washington, D.C. 20013

AUG 2 2012

The Honorable Daniel M. Ashe
Director, U.S. Fish and Wildlife Service
Department of the Interior
1849 18th Street, N.W., Room 3356
Washington, D.C. 20240

Dear Director Ashe:

As you are aware, on March 8, 2012, Secretary of Agriculture Thomas J. Vilsack and Secretary of Interior Ken Salazar announced *Working Lands for Wildlife* (WLFW), a new \$33 million partnership with farmers, ranchers, and forest landowners to use innovative approaches to restore and protect wildlife habitat, including habitat for seven at-risk species. Our agencies have made significant progress since the announcement, working closely to develop conservation practices that will benefit the at-risk species and their habitats. These practices will enable America's farmers and ranchers to continue working their lands, while voluntarily furthering conservation activities targeted to imperiled species.

The purpose of this letter is to affirm the discussions between our agencies related to providing landowners participating in WLFW with predictability, as it relates to candidate species and the Endangered Species Act (ESA). We understand that the U.S. Fish and Wildlife Service (USFWS) is now completing conference opinions for three of the four candidate species identified in WLFW, including lesser prairie-chicken, gopher tortoise, and New England cottontail. Further, we understand USFWS completed an effective conference report for the greater sage-grouse, a candidate species also targeted by WLFW. Specifically, these documents analyze the effects of conservation practices developed through partnership of our agencies for landowners choosing to participate in these efforts, describing the benefits for the candidate species and their habitats. These documents particularly build on our on-going partnership to conserve two of these candidate species, namely greater sage-grouse and lesser prairie-chicken.

While the benefits from implementing the conservation practices are clear, we understand that some, such as prescribed burning, could have negative incidental impacts in the short run but significant benefits in the long run. An important aspect of this initiative is providing landowners who voluntarily sign up through WLFW with predictability about implications for them, if any, should the candidate species be listed in the future under ESA. We understand that USFWS can, under Section 7 of ESA, carefully analyze the positive and negative effects of conservation practices, much like USFWS is doing through conference reports and opinions, and

Helping People Help the Land

An Equal Opportunity Provider and Employer

The Honorable Daniel M. Ashe
Page 2

exempt through a biological opinion incidental take that is anticipated to occur to listed species from implementing conservation practices in the future. Confirmation that USFWS is willing to take this step, should any of the candidate species become listed, would provide important predictability as we look to sign up interested landowners in fiscal year (FY) 2012 and future fiscal years.

In addition, the program contracts signed by the Natural Resources Conservation Service and landowners under WLFW beginning in FY 2012 will range in duration from one year to 10 years and, in some cases, up to 15 years. While the program contracts have a specific time period, many landowners may voluntarily choose to continue implementing the practices after the contract ends. The actions of these landowners will continue to benefit the species and their habitats, providing the stewardship that furthers the mission of both agencies and the goals of WLFW. Offering landowners predictability under ESA will further encourage the implementation of the conservation practices into the future. I would appreciate your advice on how we might collectively achieve this goal.

Thank you for your partnership in WLFW. Our work together offers another example of the compatibility of working lands and wildlife species conservation. Please contact Jason Weller, Chief of Staff, at (202) 720-6580, if you have any questions.

Sincerely,



Dave White
Chief

cc:

Jason Weller, Chief of Staff, NRCS, Washington, D.C.

James Gore, Assistant Chief, NRCS, Washington, D.C.

C. Wayne Honeycutt, Deputy Chief for Science and Technology, NRCS, Washington, D.C.

Terrell Erickson, Director, Ecological Sciences Division, NRCS, Washington, D.C.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240



AUG - 3 2012

In Reply Refer To:
FWS/AES/52307

Mr. Dave White
Chief, Natural Resources Conservation Service
1400 Independence Ave., SW, Room 5105-A
Washington, DC 20250

Dear ^{Dave} Mr. White:

Thank you for your letter dated August 2, 2012 about the Working Lands for Wildlife (WLFW) partnership, which is successfully leveraging the capabilities and resources of our two agencies. We greatly appreciate the collaboration between the Natural Resources Conservation Service (NRCS) and U.S. Fish and Wildlife Service (Service) staff, and the leadership that you have shown to strategically target funding for working lands and sensitive species. This effort clearly demonstrates that productive working rural lands are compatible with the needs of wildlife and their habitats, achieving the missions of both NRCS and the Service.

The purpose of this letter is to describe the Service's approach to candidate conservation under the Endangered Species Act (ESA) and predictability for landowners who participate in WLFW. As referenced in your letter, the Service has recently completed conference opinions for three of the four candidate species involved in WLFW, including lesser prairie chicken, the eastern portion of the gopher tortoise's range, and New England cottontail. In addition, the Service had previously completed an effective conference report for the greater sage grouse, the fourth candidate species involved in WLFW. In these documents, the Service analyzed the effects to these species from the implementation of specific conservation practices by landowners who choose to participate in WLFW. These conservation practices and associated conservation measures were developed in partnership by our agencies to benefit the species and their habitats and be fully compatible with working lands.

The Service will be determining in the future whether to list each of these candidate species as threatened or endangered under the ESA. In the event that any of the species are listed, the Service is committed to validating the conference report and opinions as biological opinions for NRCS under section 7 of the ESA, and exempting any incidental take as described in the biological opinions associated with implementing the specified conservation practices. As a result, the predictability for landowners is clear. They will know that the conservation practices will continue to benefit wildlife for as long as they are implemented, and that any ESA issues associated with their implementation have been already addressed in full.

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You also asked how we might encourage landowners to continue to implement these beneficial conservation practices beyond the term of their program contract with NRCS. The Service also recognizes the value of landowners voluntarily choosing to continue implementing the conservation practices after each individual program contract with NRCS under WLFW ends. These contracts can extend from one to fifteen years in length, depending on the species involved and the conservation practices employed. Continuing the implementation of the conservation practices beyond this period would advance the longer-term goals of WLFW and both agencies' missions.

Should any of the candidate species in WLFW be listed in the future, the Service intends to exempt through section 7 any incidental take that is anticipated to occur from the implementation of the conservation practices if a landowner with a WLFW program contract voluntarily chooses to continue implementing the practices after the program contract ends. The Service will review the effects of implementing the specified conservation practices to these species over a 30-year period and exempt any incidental take anticipated to occur from their implementation. Each landowner involved in WLFW will have the sole discretion whether or not to continue implementing the conservation practices at the end of the contract with NRCS. If a landowner chooses, however, to continue implementing the conservation practices defined through our WLFW partnership, they will have predictability and the confidence in knowing that any ESA issues associated with their implementation over a 30-year period will have already been addressed in full. By taking this step, the Service hopes to encourage the long-term implementation of the conservation practices and associated conservation measures.

The Service also notes that two other species included in WLFW are already listed under the ESA, the Southwest willow flycatcher and the bog turtle. For these two species, the Service has completed biological opinions and exempted any incidental take anticipated in the biological opinions to occur from implementation of the conservation practices. In addition, the western portion of the gopher tortoise's range is currently listed (the eastern portion of the range is currently a candidate species as noted above), and the Service has completed a biological opinion and exempted any incidental take anticipated in the biological opinion to occur from implementation of the practices in this portion of the range. Furthermore, the golden-winged warbler is also included in WLFW. This species is neither currently listed under the ESA nor a candidate species for listing. Should the species status change in the future and the potential need for listing be considered, the Service intends to follow the same approach to ESA predictability for NRCS and landowners that has been used for the other species in WLFW.

As WLFW moves forward, we will have the opportunity to gauge the success of the conservation practices over time, and potentially gain information that will allow us to refine them and achieve even better results for landowners, NRCS, and the Service. The Service is committed to this approach of learning and adaptive management in partnership with NRCS and the landowners participating in WLFW. Any refinements to the conservation practices would be developed in full collaboration with NRCS, using information gained from on-the-ground implementation of WLFW.

The Service is also committed to developing more tools for landowners. We are particularly interested in pursuing partnerships using Candidate Conservation Agreements with Assurances with landowners, which can provide long term conservation options and regulatory certainty.

Thank you again for your leadership in working lands conservation. If you have any questions, please contact Gary Frazer, Assistant Director for Endangered Species, at (202) 208-4646.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. M. A.", is written over a horizontal line.

DIRECTOR