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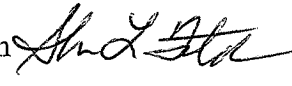
Southeast Regional Office
Atlanta Federal Center
1924 Building
100 Alabama St., SW.
Atlanta, Georgia 30303

DEC 04 2014

SER-PC

Memorandum

To: Superintendent, Congaree National Park

From: Regional Director, Southeast Region *for* 

Subject: Management Plan for Non-Native Wild Pigs within Congaree National Park /
Environmental Assessment – Finding of No Significant Impact

Attached please find the signed Finding of No Significant Impact for the Management Plan for Non-Native Wild Pigs within Congaree National Park / Environmental Assessment.

If you require further assistance or information, please contact Ben West, Chief, Planning and Compliance Division, at 404-507-5700.

Attachment

National Park Service
U.S. Department of the Interior

Congaree National Park
Hopkins, South Carolina

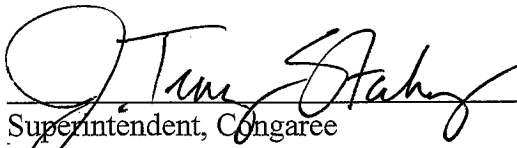


**ENVIRONMENTAL ASSESSMENT:
MANAGEMENT PLAN FOR NON-NATIVE WILD PIGS WITHIN
CONGAREE NATIONAL PARK**

**Finding of No Significant Impact
November 2014**

The selected alternative does not constitute an action that normally requires preparation of an Environmental Impact Statement (EIS). The selected alternative will not have a significant effect on the human environment. Some long-term adverse environmental impacts will likely occur, but will be negligible to moderate. Most impacts will be long-term and beneficial. There are no unmitigated adverse impacts on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, cumulative effects or elements of precedent were identified. Implementation of the selected alternative will not violate any Federal, State or local environmental protection laws.

Based on the forgoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Recommended:  10/30/14
Superintendent, Congaree National Park Date

Approved:  12/1/14
Acting Regional Director, Southeast Region Date

INTRODUCTION

In August 2014, the National Park Service (NPS) issued an Environmental Assessment (EA) analyzing impacts associated with a draft management plan for non-native wild pigs at Congaree National Park (“CONG” or “the park”). The EA evaluated two alternative courses of action for managing wild pig populations in the park.

The purpose of this document is to record the decision of the NPS and to declare a Finding of No Significant Impact (FONSI) pursuant to the Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act Of 1969 (NEPA).

Background

CONG was established by Congress as a unit of the National Park System in the Act of October 18, 1976 (Public Law 94-545, codified at 16 U.S.C. 459i et seq.). The park was created “to preserve and protect ... an outstanding example of a near-virgin southern hardwood forest situated in the Congaree River floodplain in Richland County, South Carolina.” Congress redesignated the monument Congaree National Park in 2003 (P.L. 108-108 [November 10, 2003]). Included within the park’s borders are 11,000 acres of old-growth forest, the largest contiguous tract of southern old-growth bottomland forest remaining in the United States.

In 1988, Congress passed the Congaree Swamp National Monument Expansion and Wilderness Act (Public Law 100-524 (October 24, 1988)). This Act, as amended by P.L. 108-199 (January 23, 2004), established the Congaree National Park Wilderness as a component of the National Wilderness Preservation System. As of October 2014, approximately 21,700 acres of the park are managed as designated wilderness. Another 140 acres are managed as potential wilderness. The designated wilderness at CONG represents approximately 82% of the total acreage (26,546 acres) within the park’s authorized boundary.

Wild pigs, also known as feral swine, wild boar, and feral hogs, include a mix of feral domestic stock, Eurasian wild boar, and hybrids between the two. Non-native wild pigs have been present in the Congaree and Wateree River floodplains for at least 200 years, if not substantially longer. By the late 19th/early 20th centuries, wild pigs were pervasive throughout the Congaree River floodplain. Decades later, individuals introduced Eurasian wild boar and hybrids between wild boar and domestic stock for hunting. Today, an entrenched population of wild pigs is present in the floodplain of the Congaree River, including the park.

Congaree National Park has long been concerned about the effect of wild pigs on park resources and has funded work to gather information on the park’s wild pig population, movements, diseases, and impacts on park lands. In particular, studies conducted through the U.S. Geological Survey’s South Carolina Cooperative Fish and Wildlife Research Unit at Clemson University have yielded information on wild pig impacts and improved understanding about the local non-native wild pig population. Results indicate that wild pig home ranges are compact and relatively homogeneous within the park when compared to other national and international wild pig populations, suggesting that there is an abundant resource base available to sustain this non-native species within the park. Based upon the findings of this work, it is likely that high levels

of disturbance occur within the home ranges of individual animals. Damage associated with wild pigs is widespread throughout the park.

Non-native wild pigs are a severe threat to the park's ecosystem and outstanding natural and cultural resources due to disturbance behaviors such as rooting, wallowing, and the development of established wildlife trails. Other threats include competition with and predation on native species; potential spread of non-native invasive plants; potentially aggressive behavior toward humans; potential degradation of water quality; and disease. At risk are bottomland hardwood ecosystem function, advance regeneration of bottomland hardwood canopy tree species, rare and imperiled species and ecological communities (including globally imperiled seepage forest communities and state listed plants), streams and stream banks, a variety of wetland and aquatic habitats, and numerous other natural resources. The planned restoration of longleaf pine ecosystem at the park would also be at risk of damage from wild pigs. Cattle mounds and dikes – historic earthen structures associated with agriculture and listed on the National Register of Historic Places – are also at risk from wild pig disturbance.

Non-native wild pigs cause physical and visual degradation of recreational resources such as hiking and canoeing trails and degrade the wilderness character of the park. Wild pigs can be a safety risk for park visitors due to potentially aggressive behavior. They can also pose a health risk from diseases such as swine brucellosis, pseudorabies, and hog cholera.

Purpose and Need for Action

The purpose of the action is to manage resource impacts associated with wild pigs and to reduce risks to human health and safety. The action is needed to address the numerous threats that non-native wild pigs pose to natural resources, cultural resources, and public health and safety at CONG and in surrounding areas.

Alternatives Considered

The NPS considered two alternatives in the EA process: a “No-Action” alternative and an action alternative.

Alternative A – No Action (Continue Current Management)

Under the No-Action alternative (Alternative A), the NPS would continue to implement an interagency agreement with the United States Department of Agriculture (USDA) Wildlife Services program to conduct limited wild pig management activities. These would include trapping and shooting, direct targeted harvest operations, and monitoring for disease. Monitoring of wild pig disturbance could also continue.

Alternative B – Implement Integrated Non-native Wild Pig Management Plan (Preferred Alternative)

The action alternative is NPS' preferred alternative and selected alternative. Under this alternative, the NPS will implement a comprehensive and sustained non-native wild pig management plan with the goal of reducing natural and cultural resource impacts associated with

wild pigs and reducing risks to human health and safety. Management activities will center on a sustained trapping and shooting program. The exclusion of wild pigs from small selected areas using fencing or curtain barriers could also be implemented in extreme cases to protect highly sensitive resources such as special status species or National-Register-listed or eligible sites at imminent risk of damage. All wild pig management activities will be coordinated through a single designated wild pig program officer from the Park's Resource Management program. Activities will include:

Trapping: Use of traps for wild pig management within CONG will be limited to live-capture traps. Kill-traps and snares will not be used. Trapping is the only method to effectively remove entire sounders. Sounders are composed of adult and sub-adult sows and their offspring and may range in size from four to forty pigs. A variety of live-capture trap types could be used, including but not limited to corral traps large enough to capture entire sounders. (These have been used previously at the park and are routinely used by USDA.) The latter will be made of livestock panels that can be disassembled, transported in sections, and reassembled on site. Portable, lightweight, single-catch traps constructed of chain-link fencing material, metal, or wood (similar in design to traps used at Cumberland Island National Seashore, Great Smoky Mountains National Park and elsewhere) may also be used. Trapping strategies will include deploying wildlife cameras at sites exhibiting wild pig damage to identify core use areas, identify entire sounders, and learn when sounders are habituated to the traps. Trapping will also be used in areas where direct shooting is not feasible for safety or other reasons.

NPS personnel or their authorized representatives (e.g., USDA Wildlife Services or Veterinary Services agents or contractors working in coordination with the NPS) will conduct all trapping. Traps will be placed and set in areas showing recent wild pig activity and those determined to be core use areas of individual sounder groups. Traps will be baited with appropriate bait that is most likely to attract wild pigs but not other non-target species such as deer (e.g., sour corn mash). Traps will be inspected within a minimum of 24 hours after they are set. Non-target wildlife captured in traps will be released immediately upon discovery. Escape holes for smaller non-target species will be included in the tops of wild pig traps during construction.

Shooting: Direct reduction of wild pigs by shooting will be an important wild pig management activity within and throughout the park (shooting will not be conducted outside park boundaries). Trained NPS personnel or their authorized representatives (e.g., USDA Wildlife Services agents working in coordination with the NPS) will conduct shooting of wild pigs. Shooting will be conducted while stalk hunting on foot, from ground blinds, and from temporary tree stands. Baiting may be used in combination with shooting to attract wild pigs to blinds or tree stands.

Only temporary, portable blinds and tree stands transported as a backpack unit, on a small trail cart (pushed or pulled by hand), or by all-terrain vehicle (ATV) and cart on existing roads when a trap is also being transported will be used in wilderness areas. Trucks and ATVs may be used for access and transport outside wilderness areas where these vehicles are currently approved for use. Motorboats may be used for access along the Congaree River. Non-motorized boats will be used for access and transportation on surface waters within the Park. Blinds and tree stands will be left in place over a few days and then will be moved for use elsewhere or removed from the field if not in use. Management personnel may establish primitive low impact campsites when

shooting in remote areas over a several day period. No fastening devices, nails, screws, stakes, wire, rope or other human-made materials will be left in the field. When feasible, shell casings will be collected and removed from the field after firearm use.

All personnel involved in shooting activities will be required to obtain NPS-approved wildlife control and firearms training and certification. Shooting areas will be defined in a planning setting prior to conducting operations. The designated wild pig program officer from the Park's Resource Management program will closely coordinate with law enforcement, maintenance, and interpretation personnel to ensure maximum safety. Shooting could be carried out throughout the park, except where limited by safety constraints. At times, shooting operations may be more focused in areal extent (e.g., highly sensitive areas thought to be at greater risk of impact by wild pigs, areas where wild pig sign is more abundant or where greater numbers of wild pigs are known to occur). Shooting may be conducted during day or night depending on wild pig behavior and activity, shooting effectiveness, and safety considerations. Records of pig reduction efforts will be made and kept up to date.

Firearms used to shoot wild pigs during direct reduction will include rifles and shotguns, of appropriate caliber and bullet weight. As required by the NPS' "Get the Lead out" initiative, only non-lead ammunition will be used for dispatching wild pigs during culling operations. See <http://www1.nrintra.nps.gov/BRMD/Gettheleadout/>.

Use of Dogs: Systematic tracking using trained dogs could be used as part of the overall wild pig management strategy at CONG. Tracking with dogs will be conducted by professional, trained NPS employees or their authorized representatives, which will include qualified, reputable contractors that are known to utilize well-trained dogs. Tracking dogs used at CONG will have to be trained to respond to commands from their owner and to only track the scent of pigs, thus reducing the likelihood of dogs harassing native non-target species. As with all activities related to wild pig management that may affect park neighbors, park neighbors will be notified in advance of any hunting with dogs. This type of hunting will be away from private property.

Protective Fencing: Fencing could be used in small selected areas to protect highly sensitive resources at imminent risk of damage by wild pigs. Fencing will be used in cases where wild pig impacts could result in irreversible damage or loss of a resource, and where fencing could effectively protect the resource. Fencing will also be limited to areas where installation will cause less damage to park resources than wild pig impacts. A limited number of small fencing exclosures could also be used for research and monitoring purposes. All research and monitoring exclosures will be sited so they will not be visible from major visitor use areas (boardwalks, trails, visitor center, parking areas, Cedar Creek, Congaree River, etc.). Fencing to protect sensitive resources will be out of view of visitors to the greatest extent possible. Fencing will not be installed in areas where surface water flow may be interrupted or where other hydrologic alternations will be likely (e.g., fencing will not be constructed across creeks, guts, or areas of channelized flooding). Fences will not be installed in areas where cultural resources will be impacted by fence construction. In cases where fencing at a site is no longer needed for resource protection, has proved ineffective, or where regular inspection and repair cannot be maintained, fencing will be removed from the field. Records will be kept for all fencing.

Protective Curtain Barriers: Protective curtain barriers, similar to those in use at Haleakala National Park in Hawaii, may be used for the same purposes and in the same manner described for protective fencing. Curtain barriers consist of heavy plastic sheets suspended from cable lines strung between posts. Curtain barriers, in contrast to fencing, can also be placed across creeks, guts, and other areas of channelized flow or flooding where fencing is not appropriate. These barriers provide a visual and physical barrier that effectively prevents wild pig passage along watercourses. Enough sheet material is used so that the plastic lays flat on the ground or water surface during low water periods, extending “downstream” of the upright portion of the barrier. During flooding or high water, the plastic moves up and down with the water surface so that flow and flood debris are not impeded. When water levels decline the plastic sheet settles back into place. Other than potential use in stream and channelized flow areas, use of curtain barriers will comply with specifications and restrictions described above for protective fencing.

Radio Tracking: Radio-tracking could be used in conjunction with shooting and trapping activities or for research and monitoring purposes. Trapping will be used to capture wild pigs to fit with radio collars. A small number of radio-collared pigs could be released and tracked to assist in locating remote wild pig aggregation areas where shooting or trapping will take place. This method is sometimes referred to as a “Judas pig” technique, and is often used to locate sounders and wild pigs in advanced stages of a management program, when animals are more difficult to find or are less numerous. In addition to the use of “Judas pigs,” radio-collars and tracking may be used for research and monitoring purposes, to investigate wild pig movement patterns, habitat preferences, home range sizes, and to calculate population estimates in support of the wild pig management program. The number of radio-collared pigs will be limited to the number needed to provide adequate statistical replication to address the research or monitoring question(s) being addressed. Fitting of wild pigs with radio collars will require that trapped animals be restrained and immobilized using a fast, safe, effective, and humane method.

Final Disposition: Wild pigs that are killed will be left in the field to decompose on the ground surface without burial. This is in keeping with practices nationwide. A small amount of quicklime could be used on the carcass to accelerate decomposition. Care will be taken when handling dead pigs to avoid contact with body fluids. All killed pigs will be moved out of view and at least 200 feet from visitor use areas such as hiking trails, boardwalks, canoe trails, parking areas, and the visitor center. Killed pigs will also be moved at least 200 feet away from the banks of relatively permanent surface waters such as Cedar Creek, Tom’s Creek, Wise Lake, Weston Lake, and the Congaree River. Due to health concerns and regulatory issues, wild pig carcasses will not be donated for human consumption.

Protection of Wilderness Character and Backcountry Resources: Per the Minimum Requirements Analysis conducted as part of the planning effort, mostly lightweight portable traps that could be transported by hand or on a small trail cart (pushed or pulled by hand) will be used in wilderness areas, where determined to be the minimum tool. Trucks and ATVs may be used for access and transport of traps outside wilderness areas, where vehicles are currently approved for use and where access is possible without expanding or altering existing dirt roads and trails. This includes upland portions of the park where numerous former logging roads are present. Motorboats will be used for access and transport of traps along the Congaree River.

Non-motorized boats could be used to transport traps within the park (such as along guts and creeks leading into the park from the river).

In wilderness and floodplain areas where former logging grades and sufficient trails are present, ATVs with wagons could also be used on existing grades and trails. Tree removal could be conducted to make roads passable but no other work will be done to maintain the existing roads. Tree removal and vegetation clearing will be kept to the minimum necessary to allow passage of an ORV. No new roads will be created. Mechanized equipment and motorized vehicles could be restricted by park management in wet conditions to minimize impacts to soils and vegetation. Additionally all wagons and ORVs will have to be equipped with light weight low pressure tires or other tires designed to reduce impact.

Coordination with Adjacent Landowners/Users: Coordination with adjacent landowners and users will be conducted to: inform them of wild pig management goals and activities at CONG; to exchange information on wild pig abundance, movement patterns, levels of disturbance, and wild pig management; to encourage the removal of wild pigs from adjacent lands; and to discourage activities that could result in pig introductions to the park (escaped livestock, etc.). Coordination with adjacent landowners and users could extend beyond immediately adjacent properties to include coordination and information exchange with other large land management entities on the floodplain. The park will also continue participating in the South Carolina Wild Hog Task Force, a partnership for wild pig management coordinated by the Clemson University Extension Service and comprising governmental and non-governmental members.

Public Information and Education: Public awareness of the wild pig management program will be promoted whenever possible. NPS personnel will work with community leaders to maintain communication and resolve any problems as quickly as possible. Information on the wild pig management program will also be regularly conveyed to park visitors.

Research and Monitoring: A wild pig monitoring protocol will be developed and implemented to support the wild pig management program at CONG. The objectives of the monitoring protocol will be: 1) to document baseline levels of pig activity and vegetation/soil disturbance prior to wild pig management at the park, and 2) to provide a means for periodically evaluating the effectiveness of wild pig management activities at reducing vegetation/soil disturbance within the park. Biological data will be recorded for each pig collected.

Environmental Consequences

The environmental consequences of the two alternatives were assessed using the following impact topics:

- Soils;
- Vegetation;
- Wildlife and special status species;
- Water Resources (water quality, wetlands, floodplains);
- Cultural resources;
- Wilderness character;

- Public Health and Safety;
- Visitor Use and Experience; and
- Park operations.

Section 4 of the EA provides a detailed description of the environmental consequences of each alternative. Direct, indirect, and cumulative impacts were assessed.

Alternatives Considered but Dismissed

Several wild pig management alternatives were considered but eliminated from detailed analysis due to incompatibility with conditions at CONG or due to other factors, as described below.

Park-wide or Large-area Fencing: Fencing the perimeter of CONG or large areas within the park to conduct fenced-zone removal of wild pigs and to prevent or reduce movement of wild pigs into the park was eliminated from further analysis due to: potential alterations that fencing could have on the natural movement of water, sediments, flood debris, native biota, etc. within and through the park; the frequent and severe damage that flooding would cause to fences; the prohibitive cost of installation and maintenance; impact to wilderness character; and impacts to the visitor experience.

Use of Snares: Snares and trapping methods other than live capture traps were eliminated from further analysis due to the concern that native non-target wildlife could be negatively affected by these methods.

Live Capture and Relocation: Live capture and relocation of wild pigs from CONG was eliminated from further analysis. Live capture and relocation of wild pigs is illegal within the state of South Carolina without a permit. Also, swine brucellosis and pseudorabies has been documented in wild pig populations at CONG and the surrounding area. Movement and relocation of live animals could result in infection of other feral populations and livestock.

Poisoning/Toxicants: Use of poisoning agents or toxicants was eliminated from further analysis due to the concern that native non-target wildlife could be negatively affected. Although research into species specific delivery methods is being conducted, no species specific delivery method has been found and no toxicants are currently registered for use with feral ungulates in the United States. If poisons/toxicants and species-specific delivery technologies for controlling non-native wild pigs are developed in the future, this alternative could be re-evaluated.

Contraceptives or Sterilization: Contraceptives or sterilization could be a low-impact means to reduce non-native wild pig populations; however, no effective or feasible means of sterilization or contraception are currently available for non-native wild pigs. Therefore, this alternative was eliminated from further analysis. If sterilization and contraceptive technologies for controlling non-native wild pigs are developed in the future, this alternative could be re-evaluated.

Public Hunting on NPS Property: Public hunting on NPS property was eliminated from further consideration for several reasons. First and foremost, public hunting is prohibited by the establishing legislation for the park and by applicable federal regulations (36 CFR 2.2). In

addition, public hunting is unlikely to contribute substantially to pig management efforts within the park. Recreational hunting can achieve reduction of animals with relatively low reproductive potential. However, animals with very high reproductive potential, such as non-native wild pigs, are much more difficult to control and require a well-focused, comprehensive, and sustained effort by wildlife reduction professionals. The substantial effort which would be required to manage public hunting at the park would be cost prohibitive and public hunting would be incompatible with other visitor uses currently established at the park.

Biological Controls: The use of biological controls, such as the reintroduction of predators, was eliminated from further analysis due to lack of feasibility and low likelihood of substantial contribution to wild pig management efforts within the park.

Selected Alternative

After review of the alternatives and consideration of comments received from the public, various agencies, and interested stakeholders, the NPS has chosen Alternative B as the selected alternative. The NPS has selected Alternative B for implementation because it meets the following specific objectives related to management of wild pigs, which were developed with park staff during internal scoping:

Objectives

General

- Manage the wild pig population at CONG to prevent further loss of resources.

Natural Resources

- Protect natural resources including soil, water, vegetation, and wildlife resources from impacts associated with continued unmanaged wild pig population growth.

Cultural Resources

- Protect cultural resources, including historic features and archeological sites currently threatened by non-native wild pig activity.

Health and Safety

- Reduce threat to visitor and employee health and safety by decreasing likelihood of visitor and wild pig interactions resulting in physical attacks or spread of disease.

Wilderness Character

- Reduce the presence of non-native wild pigs in CONG as a result of human work or activity (exploration and colonization, free-range livestock management, agriculture, introduction for sport hunting) that leaves a substantial mark on the wilderness landscape (abundant signs of rooting, wallows, pig trails).

Alternative B provides the most desirable combination of actions for meeting these objectives and fulfilling the park's mission to protect and preserve its natural and cultural resources. Alternative B was chosen because it provides the greatest benefit to park resources, while having only from negligible to moderate adverse environmental impacts (see "Impacts that may be both Beneficial and Adverse" below).

Avoidance, Mitigation, and Minimization of Potential Adverse Effects of the Selected Alternative

For all action alternatives, best management practices and mitigation measures would be used to prevent or minimize potential adverse effects associated with the project. These practices and measures would be incorporated into the project implementation documents and plans.

Resource protection measures undertaken during project implementation would include, but would not be limited to those listed in **Appendix A**. The impact analyses in the "Environmental Consequences" section were performed assuming that these best management practices and mitigation measures would be implemented as part of the action alternative.

Environmentally Preferable Alternative

Of the two original alternatives described above, Alternative B was identified as environmentally preferable in the EA. In light of the mitigation and best management practices listed in Appendix A and required by this FONSI, the NPS hereby determines that the selected alternative (Alternative B) is the environmentally preferable alternative.

Council on Environmental Quality (CEQ) guidance defines the environmentally preferable alternative as one that:

causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves and enhances historic, cultural and natural resources.

In this case, the preferred alternative (Alternative B) is also the environmentally preferable alternative. Alternative B would:

- Reduce the impacts of non-native wild pigs on natural and cultural resources;
- Improve the safety, healthfulness, and esthetics of the surroundings;
- Reduce risks to public health and safety;
- Provide better protection of natural and cultural resources for succeeding generations.

To a greater extent than the other alternatives, Alternative B would reduce the impacts of non-native wild pigs on natural and cultural resources while protecting and restoring park resources and values. Therefore, Alternative B is the environmentally preferable alternative.

Why the Selected Alternative Will Not Have a Significant Effect on the Human Environment

Consideration of the effects described in the EA, and a finding that they are not significant, is a necessary and critical part of this FONSI, as required by 40 CFR §1508.13. Significance criteria are defined in 40 CFR § 1508.27. These criteria direct NPS to consider direct, indirect, and cumulative impacts of the proposed action, as well as the context and intensity of impacts:

Context. This measure of significance considers the setting within which an impact was analyzed in the EA, such as the affected region, society as a whole, affected interest, and/or a locality. The selected alternative affects only the immediate local area, in terms of resources, employees, and/or visitors. Therefore, any possible impact is limited to this level of least significance.

Intensity. This measure of significance refers to the severity of impacts, which may be both beneficial and adverse, and considers measures that will be applied to minimize or avoid impacts. As directed by 40 CFR § 1508.27, intensity is evaluated by considering the following factors:

Impacts that 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.)

As detailed in the EA, and summarized below, the selected alternative will not result in significant impacts to the human environment.

Under the selected alternative, disturbance associated with limited vehicular access and the placement of traps, protective fencing, curtain barriers, blinds, and stands will generate impacts to soils, vegetation, and water resources (including water quality, wetlands, floodplains). Impacts from these activities will involve limited disturbance to soil and vegetation, with attendant impacts to water quality, wetlands and floodplains resulting from slight erosion of disturbed soils. Adverse impacts to soils, vegetation, and water resources will be negligible to minor, short-term, and highly localized. This alternative is intended to reduce impacts associated with pig disturbance (i.e., rooting, wallowing, soil disturbance, devegetation, consumption of plant and animal matter, etc.) resulting in a net positive effect on soils, vegetation, and water resources.

Impacts to wildlife and special status species will result from: limited vehicular access and the placement of traps; installation of protective fencing, curtain barriers, blinds, and stands; temporary capture of non-target wildlife in traps; use of dogs trained to only track the scent of pigs; and limited shooting activities. Adverse impacts will consist of limited disturbance to habitat, limited interruption to movement patterns across the floodplain, and stress from noise and the presence of dogs. Adverse impacts on wildlife and special status species will be negligible to minor and short-term. Use of non-lead ammunition will have beneficial impacts to scavengers and other types of wildlife that might otherwise ingest or be exposed to lead. The reduction of feral pig numbers will have a long-term beneficial impact on wildlife by reducing the number of reptiles, amphibians, and other fauna consumed by non-native pigs. Overall, the selected alternative will have a net positive effect on wildlife and special status species.

Management activities could result in flushing of the federally-listed wood stork and red-cockaded woodpecker from time to time. (Note: the red-cockaded woodpecker has not been spotted in the park since the late 1990s.) On the other hand, improvements to water quality could benefit the wood stork.

Impacts to cultural resources under this alternative will be negligible to minor substrate disturbance associated with the placement of traps, protective fencing, and other equipment. Minimization and avoidance of cultural resource impacts is addressed for these activities in Appendix A ("Mitigation"). The alternative will produce a net positive effect on cultural resources by reducing the amount of pig-related disturbance to earthen structures and other cultural resources.

Impacts on wilderness character will be minor to moderate, adverse short-term, and localized, resulting primarily from physical disturbance associated with pig management activities (including the use of motorized equipment in certain circumstances) and the placement of temporary human-built structures. However, over time the reduction of pig numbers will improve the natural quality of wilderness and produce a net positive impact on wilderness character.

Impacts to visitor use and experience and park operations will be adverse in the short term due to the use of weapons and the need for temporary closures in parts of the park while pig management activities are being conducted. In addition, the cost of the program will have an adverse impact on park operations. However, impacts to visitor use and experience and park operations will be beneficial in the long term. Visitors will be less exposed to potential aggression by pigs, the park's natural and cultural environments will improve, and costs will go down over time. Based on the EA analysis, most of the impacts of the selected alternative will be beneficial.

The degree to which the proposed action affects public health or safety

Under the selected alternative, threats to public health and safety will be minor to moderate, mainly associated with the tightly controlled use of firearms and tracking of pigs by trained dogs during wild pig management activities. However, public information and education activities will be conducted to inform park visitors and others about non-native wild pigs and wild pig management activities taking place in the park. Coordination with adjacent landowners and managers will serve the purpose of raising awareness with park neighbors. Shooting operations will be planned and coordinated with Law Enforcement, Interpretive, and Maintenance personnel, resulting in increased safety for park personnel and visitors. Temporary closures of small portions of the park will be conducted if necessary to protect visitor safety. The majority of shooting activity will likely take place outside main visitor use time-periods (during very early morning, late evening, and at night). Firearms training and qualification will be required for all staff participating in trapping and shooting activities. Firearm use will be monitored with violations resulting in severe penalties including immediate dismissal. The resulting impacts to public health and safety will be direct, long-term, and beneficial. The reduction in pig numbers

will also benefit public health and safety by reducing potential exposure to disease and aggression by pigs.

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

The selected alternative will reduce the number of non-native wild pigs in Congaree National Park, resulting in beneficial impacts to natural and cultural resources currently being adversely impacted by pig rooting and related behavior. Wetlands, in particular, will benefit from reduced rooting in the moist substrate. Plant survivorship will increase, water turbidity will decrease, and overall habitat quality will improve. Cultural resources – particularly earthen cattle mounds and dikes – will benefit from reduced rooting activity on sensitive surfaces, which results in erosion and loss of resource integrity. Areas adjoining the park will also experience beneficial impacts, as the park will function less as a reservoir of pigs dispersing to adjacent properties. Based on the EA findings, the NPS has determined that there will be no significant impacts to unique characteristics in the immediate vicinity or regionally. There are no other unique characteristics of the geographic area that are affected by the selected alternative.

The degree to which the effects on the quality of the human environment are likely to be highly controversial

Department of the Interior regulations implementing NEPA provide that the term “controversial” refers to “circumstances where a substantial dispute exists as to the environmental consequences of the proposed action and does not refer to the existence of opposition to a proposed action, the effect of which is relatively undisputed.” 46 CFR § 46.30.

There is no substantial dispute as to what the effects of the selected alternative are likely to be assuming adequate funding is secured to implement the alternative. Therefore, the effects from the selected alternative are not likely to be highly controversial.

The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks

The effects of the selected alternative are straightforward and easily predicted. The pig control measures described in the plan have been used in other NPS sites and their effects are generally predictable and well-understood. The NPS has determined that with respect to these actions, the extent and degree of uncertainty regarding impacts or unique or unknown risks is not significant.

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

Nothing in the proposed action establishes a precedent that will result in significant effects in the management of CONG or any other areas in the National Park System. The selected alternative prescribes measures for the management of non-native wild pigs that are consistent with NPS

practices at other parks where management of pigs is necessary for resource protection and visitor safety.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. (Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.)

The selected alternative will reduce the number of non-native wild pigs at CONG. Other pig reduction efforts are currently occurring at the local and state level, including on properties adjoining the park. Together these efforts will result in a cumulative reduction of pig numbers and related environmental impacts. These efforts are unlikely to ever eradicate pigs in and around the park; however, their cumulative impact is likely to be beneficial. Thus, there are no significant cumulative adverse impacts associated with the selected alternative.

The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural or historical resources

Under Section 110 of the NHPA, the NPS, as a Federal land-holding agency, is required to identify, inventory, and nominate properties to the National Register of Historic Places, and to exercise caution to protect such properties (16 U.S.C. § 470). Section 106 of the NHPA requires the agency to consider the effects of its actions on National Register-listed or eligible properties. Under the selected alternative, impacts to cultural resources under this alternative will be negligible to minor and will result from substrate disturbance associated with the placement of traps, protective fencing, and other equipment. Minimization and avoidance of cultural resource impacts is addressed for these activities in Appendix A (“Mitigation”). Over the long term, wild pig management will result in reduced impacts from non-native wild pig on cultural resources such as archeological sites and historic structures, including nine historic properties listed in the National Register of Historic Places.

In compliance with Section 106 of NHPA, the NPS has determined that implementation of the selected alternative will not have an adverse effect on historic properties, as defined in 36 CFR Part 800.5(d)(1). On September 11, 2014, (see Appendix B), the South Carolina State Historic Preservation Officer (SHPO) concurred with this determination.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973

Database reviews were performed to identify the presence of T&E species or potential habitat for these species in the project area. The results are set forth in Table 1 below:

Table 1: Federal and State-Listed Wildlife Species of Concern known to occur within CONG (Updated May 2013).

Scientific Name	Common Name	Federal Rank	State Rank
<i>Clemmys guttata</i>	Spotted Turtle		ST
<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat		SE
<i>Elanoides forficatus</i>	American Swallow-tailed Kite	SC	SE
<i>Haliaeetus leucocephalus</i>	Bald Eagle		ST
<i>Mycteria americana</i>	Wood Stork	LE	SE
<i>Picoides borealis</i>	Red-cockaded Woodpecker	LE	SE

* Federal Status: LE = endangered, SC = species of concern

**State Status: SE = endangered, ST = threatened

(http://www.dnr.sc.gov/species/pdf/SC_state_wide.pdf, February 23, 2012; accessed May 18, 2013)

Under the selected alternative, management actions could possibly affect two listed special status species: Wood Stork (*Mycteria Americana*) and red-cockaded woodpecker (*Picoides borealis*). Activities authorized by the alternative could result in flushing of the federally-listed wood stork and red-cockaded woodpecker from time to time. (Note: the red-cockaded woodpecker has not been spotted in the park since the late 1990s.) However, improvements to water quality could benefit the wood stork.

After applying the relevant criteria from the Endangered Species Act, the NPS concludes that implementation of the preferred alternative *may affect, but is not likely to adversely affect* any federally-threatened or endangered species (i.e., wood stork and red-cockaded woodpecker). By letter dated October 28, 2014 (see Appendix B), the U.S. Fish and Wildlife Service has concurred with this determination.

Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment

The selected alternative for the management of non-native wild pigs (Alternative 2) does not threaten a violation of any Federal, State, or local law or requirement imposed for the protection of the environment.

Impairment

In addition to reviewing the list of significance criteria, the NPS has determined that implementation of the selected alternative will not constitute an impairment to CONG's resources and values. An impairment analysis is attached hereto as Appendix C.

Public Involvement

CONG has long been concerned about the effect of wild pigs on park resources and funded work the 1990s and 2000s to gather information on the park's wild pig population, movements, diseases, and impacts on park lands. In particular, studies conducted through the U.S. Geological Survey's South Carolina Cooperative Fish and Wildlife Research Unit at Clemson University have yielded information on wild pig impacts and improved understanding about the local non-native wild pig population. Investigative work in the park identified issues and concerns that will need to be addressed in any plan for managing non-native wild pigs at CONG.

The EA was released for public review on August 25, 2014. The availability of the EA was announced through local and regional news media, targeted mailings to stakeholders and through the NPS Planning, Environment, and Public Comment (PEPC) website at <http://parkplanning.nps.gov/cong>. No public meeting was held due to a perceived lack of widespread public interest.

A total of 21 comments were received by the NPS during the EA comment period. A variety of views were expressed by commenters, ranging from support for the plan to requests that NPS not harm any pigs. A number of commenters expressed support for public hunting as an option for controlling pig numbers. (Note: By law, public hunting is not allowed in Congaree National Park.)

The majority of comments were from individual citizens, but comments were also submitted by the Friends of Congaree Swamp and the South Carolina Wild Hog Task Force. All of the substantive comments received on the plan and EA were submitted by these two entities.

Substantive comments consisted of questions about the selected alternative (Alternative B) and suggestions for clarifying and improving the plan. Responses to substantive comments are found in Appendix D to this FONSI. Some clarifying language was added to the plan in response to the comments, but no so substantive changes were made.

APPENDIX A

MITIGATION

MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Potential Adverse Effect on:	Mitigation Measure or Best Management Practice
Protection of Soils and Vegetation	<p>Lightweight portable traps and livestock panels that can be disassembled, tree stands, and blinds will be used in most areas. Likewise, use of fencing and curtain barriers will be restricted to small areas where their use is critical for the protection of highly sensitive resources. Movement of materials by vehicle (truck, ATV) will be restricted to areas where their use is already approved, with no expansion or alteration of existing roads or trails. During placement and installation of traps, stands, blinds, fences, and curtain barriers, care will be taken to avoid and minimize disturbance of vegetation and soils. Any backcountry camps would use only primitive, temporary, low impact materials and methods, and would be removed after use leaving no long-term signs of disturbance. Collected wild pigs would be left to decompose in place, and would not be buried or covered with soil, limiting soil disturbance and returning nutrients to the soil. If significant soil or vegetation disturbance does occur, soils would be re-contoured and the area seeded or planted with native species as necessary.</p>
Protection of Wildlife and Special Status Species	<p>Methods or actions that could result in negative effects or impacts on native, non-target wildlife are not planned or have been minimized. Snares, other kill-traps, poisons, and toxicants would not be used. Non-target wildlife captured in traps would be immediately released upon discovery and traps would be checked within a maximum of 24 hours after they have been set. Escape holes for smaller native species would be built into the tops of traps. Fencing would be of a height that would not restrict movement of white-tailed deer. Dogs could be used at Congaree as one wild pig management strategy. This management activity would be conducted by professional, trained NPS employees or their authorized representatives that includes qualified, reputable contractors that utilize well-trained dogs. Tracking dogs used at CONG would have to be trained to respond to commands from their owner and to only track the scent of pigs thus reducing the likelihood of dogs harassing native non-target species. Well-trained dogs return to their cage when they are called off the pig. Equipping tracking dogs with radio-collars would reduce the likelihood of escaped or lost dogs adding to the feral dog population that already exists at CONG. Captured pigs would not be relocated, limiting the introduction of non-native wild pigs to other properties and preventing the spread of wildlife disease.</p> <p>Impacts to special status species, particularly plants, would be avoided or minimized by the same means described above for protection of vegetation and soils, with care taken to limit disturbance during the transport, installation and removal of traps, and fences. In addition,</p>

	<p>review of known special status species' locations would be conducted when planning the placement of traps, fencing, and other equipment. Wild pig management personnel would be made aware of known special status species locations, and trained on recognizing special status species that could be affected by wild pig management activities (mainly plants). If these species are found during placement of traps or fences, placement activities would be temporarily stopped and plans re-evaluated. In most cases, traps and research exclosures could simply be moved to a comparable nearby location or reconfigured so that special status species would not be disturbed. For exclosures intended to protect a specific sensitive resource, more detailed planning would be conducted if potential special status species concerns are identified. In such a case, planning would include consultation with resource experts and the appropriate federal and state agencies. A localized special status species field survey would also be conducted, if needed. In most cases, placement of fencing near a special status species site would be intended to protect the resource from wild pig disturbance. Fencing would only be used in areas with special status species if the impacts of wild pig damage would be substantially greater than impacts associated with the installation of protective fencing.</p>
Cultural Resources	<p>Traps, fencing, curtain barriers, and other equipment would be placed to avoid impacts to cultural resources. Review of known cultural resource locations would be conducted when planning the placement of traps, fencing, and other equipment. Wild pig management personnel would be made aware of known cultural resource sites, and trained on recognizing potential cultural resources that could be encountered in the field. If potential cultural resources are found during placement of traps or fences, placement activities would be temporarily stopped and plans reevaluated. In most cases, traps and research exclosures could simply be moved to a comparable nearby location where cultural resources would not be disturbed. For exclosures intended to protect a specific sensitive resource, more detailed planning would be conducted if potential cultural resource impacts are identified. In such a case, planning would include consultation with NPS and state cultural resource experts. A localized cultural resource survey would also be conducted, if needed. In most cases, placement of fencing near a cultural resource site would be intended to protect the resource from wild pig disturbance. Fencing would only be used in such areas if the impacts of wild pig damage would be substantially greater than impacts associated with the installation of protective fencing.</p>
Protection of Water Resources	<p>Fences would not be used in areas where streams or other channelized flows are present, to avoid the retention of flood debris and the alteration of water movement. Where exclusion of wild pigs from such areas is necessary, floating curtain barriers would be installed instead of fencing. Collected pigs would also be moved at least 200 feet away from the banks of streams, lakes, and the Congaree River to protect water quality.</p>

	Other potential impacts to water resources would be avoided and minimized by the same means described above for protection of vegetation and soils, with care taken to limit disturbance during the transport, installation and removal of traps, fences, etc.
Protection of Wilderness Character	<p>All wild pig management actions would be subject to a minimum requirements determination to ascertain whether the action is necessary and appropriate in wilderness or potential wilderness. If the action is both necessary and appropriate to protect wilderness resources and values, the action would be further analyzed to determine the minimum tool necessary to accomplish the objectives of the proposed action. Whenever possible, the Park would use minimum impact methods to minimize or prevent damage to wilderness.</p> <p>Previously described protections for wilderness (under the preferred alternative) include plans to exclude trucks from use in wilderness and to only use ATVs for transport of traps and other materials in locations where they are already approved for use, with no expansion or alteration of existing roads or trails. Only lightweight portable tree stands and blinds would be used in wilderness areas, mainly transported by hand or human-powered trail cart if, through minimum requirements analysis, determined to be the minimum tool. Likewise, use of fencing and curtain barriers would be restricted to small areas where their use is critical for protection of highly sensitive resources. During placement and installation of traps, stands, blinds, fences, and curtain barriers, care would be taken to avoid and minimize disturbance of vegetation and soils. Traps, fencing, curtain barriers, stands, and blinds would also be promptly removed once they are no longer in active or effective use (traps could remain in areas if their future use was planned, e.g., periodic use in certain seasons for instance). Careful record keeping of trap and fencing locations, status, and usage would ensure materials are promptly removed and not abandoned in wilderness areas. Any backcountry camps would use only primitive, temporary, low impact materials and methods and would be removed after use leaving no long-term signs of human activity. All man-made materials associated with installation of traps, stands, blinds, and primitive camps would be removed. Sound-suppression of firearms would be used to reduce noise generation during shooting operations. Shell casings released during shooting operations would be collected and removed when feasible. Any unused bait would also be removed from trap and bait stations.</p>
Protection of Public Health and Safety, Visitor Use and Experience, and Park	Public information and education activities would be conducted to inform park visitors and others about non-native wild pigs and wild pig management activities taking place in the park. Coordination with adjacent landowners and managers would serve the purpose of raising awareness with park neighbors. Shooting operations would be planned and coordinated with Law Enforcement, Interpretive, and Maintenance personnel, resulting in increased safety for park personnel and visitors.

Operations	<p>Temporary closures of small portions of the park would be conducted if necessary to protect visitor safety. The majority of shooting activity would likely take place outside main visitor use time-periods (during very early morning, late evening, and at night). Firearms training and qualification would be required for all staff participating in trapping and shooting activities. Firearm use would be monitored with violations resulting in severe penalties including immediate dismissal. Sound suppression of firearm discharges would be used whenever possible to limit disturbance to park visitors and neighbors. Collected animals would be moved out of sight and at least 200 feet away from all main visitor use areas. Traps, fencing, and other materials would also be placed out of visitor sight to the greatest degree possible. Any research or monitoring enclosures would be placed out of visitor sight and at least 200 feet from visitor use areas. Fencing and curtain barrier materials would be colored dark green, dark brown, or black, to blend in with the surrounding environment. Captured wild pigs would not be relocated and released outside of CONG in accordance with South Carolina law. However, the use of “Judas pigs” could require capture and relocation of radio-collared individuals within the park. Personnel taking blood samples or handling blood samples during disease monitoring would use latex gloves, eye protection, and any other methods necessary to prevent contact with wild pig body fluids. Veterinary waste associated with disease monitoring would be disposed of properly following USDA guidelines. To reduce the impact of wild pig management on park operations, funding would be pursued for additional staff to support the activities associated with the proposed pig management program. As at the Great Smoky Mountains National Park, youth interns such as Student Conservation Association volunteers may also be involved with wild pig management. The USDA Wildlife Services agents would continue to participate in wild pig management. Additional funding for personnel, equipment, and supplies would be pursued as necessary.</p>
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APPENDIX B

CORRESPONDENCE FROM SOUTH CAROLINA DEPARTMENT OF ARCHIVES AND HISTORY And UNITED STATES FISH AND WILDLIFE SERVICE



United States Department of the Interior

FISH AND WILDLIFE SERVICE

176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407



October 28, 2014

Mr. Steven Kidd
Acting Chief, Integrated Resource Management
Congaree National Park
100 National Park Road
Hopkins, SC 29061

Re: Wild Pig Management Plan, Congaree National Park, Richland County, South Carolina
FWS Log No. 2015-I-0044

Dear Mr. Kidd:

The U.S. Fish and Wildlife Service (Service) has reviewed your October 22, 2014, letter regarding the proposed management of non-native wild pigs (*Sus scrofa*) within the Congaree National Park (CNP), Richland County, South Carolina. Previously, an Environmental Assessment (EA) was submitted to the Service for review on August 27, 2014; however, we did not provide comments at that time. The EA analyzed the effects wild pig management would have on the environment including federally protected threatened and endangered species. As required under section 7 of the Endangered Species Act of 1973 (ESA), you are now requesting the Service's concurrence with your determination of affect the project may have upon federally protected species.

The National Park Service (NPS) intends to implement a management plan that includes a sustained trapping and shooting program to remove wild pigs and thereby reduce their impacts to the natural resources within the CNP. Small scale use of fencing or curtain barriers may also be implemented to protect highly sensitive resources. The NPS considered the proposed activities and their potential to affect "special status species" which included federally threatened or endangered species. After review of the project the NPS concluded that the wild pig management plan may affect, but is not likely to adversely affect, the red-cockaded woodpecker (*Picoides borealis*) and the American wood stork (*Mycteria americana*).

Based on our review of the information received and of the project location, the Service concurs with your determination that the proposed activity is not likely to adversely affect the red-cockaded woodpecker or the American wood stork. Further, no designated critical habitat for any species occurs on the project site. Please note that due to obligations under the ESA potential impacts of this project must be reconsidered if: (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

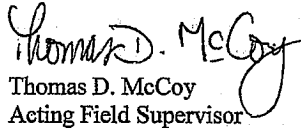
For informational purposes only, the Service has included a list of species that have been petitioned for listing under the ESA as well as Candidate Species. These species are collectively referred to as "At-Risk Species" (ARS). We have included a list of the ARS that may occur in Richland County, South Carolina. Although there are no Federal protections afforded to ARS, please consider including them during your project efforts. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at:

<http://www.fws.gov/southeast/candidateconservation>.

Two ARS species, Carolina-birds-in-a-nest (*Macbridea caroliniana*) and the Savannah lilliput (*Toxolasma pullus*), are known to occur in Richland County and may be affected by the proposed management plan. Carolina-birds-in-a-nest is a plant found in wet pine or swampy habitat within the CNP boundaries and may be impacted by management activities. We recommend that placement of fencing to trap the pigs within the park to avoid impacting this species to the maximum extent possible. The Savannah lilliput is an aquatic mussel and may be located in shallow streams and creek throughout the CNP. To avoid impacts to this mussel, we recommend no fencing or trapping occur within or adjacent to streams within the CNP.

Please contact the South Carolina Department of Natural Resources regarding potential impacts to State protected species. If the proposed project will impact streams and/or wetlands, please contact the U.S. Army Corps of Engineers, Charleston District. If you have any questions, please contact Mr. Mark Caldwell at (843) 727-4707, ext. 215 and reference FWS Log No. 2015-I-0044.

Sincerely,


Thomas D. McCoy
Acting Field Supervisor

TDM/MAC



IN REPLY REFER TO:

United States Department of the Interior

National Park Service
Congaree National Park
100 National Park Road
Hopkins, South Carolina 29061



SEP 04 2014

August 28, 2014

John D. Sylvest,
State Historic Preservation Office
8301 Parklane Road
Columbia, SC 29223

Dear Mr. Sylvest,

In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, we are writing to you concerning the proposed Wild Pig Management Plan and Environmental Assessment (EA) and Minimum Requirements Decision Guide (MRDG) workbook for Congaree National Park.

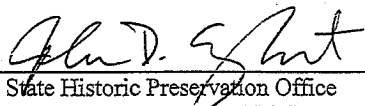
Non-native, wild pig related disturbances have been documented at nearly every archeological site within the park and the current management plan, Alternative A, is insufficient to reduce the ongoing damage. Alternative B, the preferred alternative, in the attached EA seeks to reduce the damage to historic structures and archeological resources within the park by implementing a comprehensive and sustained program of trapping, shooting, and placing barriers around archeological sites to prevent further damage to cultural resources.

We have attached the pertinent sections of the EA dealing with cultural resources. The only action that has the potential to affect cultural resources is the placement of protective fencing around known archeological sites. We feel that sufficient mitigations are in place in the preferred alternative to avoid an adverse effect to historic properties eligible or listed in the National Register of Historic Places. Also attached is the Assessment of Effect (AOE) form providing the NHPA/CRM specialist reviews of our regional staff. If you would like to review the complete EA and MRDG workbook please visit our website at <http://parkplanning.nps.gov/congwildpigs>

It is the determination of the National Park Service that the proposed preferred alternative will have **no adverse effect** to historic properties eligible or potentially eligible for listing in the National Register of Historic Places. If you concur with this determination, please sign on the line provided below and return this letter to us. If we have not received this response within 30 days, as provided by 36 CFR 800.5(b) and (c), then we will consider our responsibilities under Section 106 of the National Historic Preservation Act, as amended, and 36 CFR Part 800 to be completed.

I concur ☒

I do not concur ()


SC State Historic Preservation Office

9/11/14
Date

APPENDIX C

IMPAIRMENT ANALYSIS

IMPAIRMENT DETERMINATION

The Prohibition on Impairment of Park Resources and Values

NPS Management Policies 2006, Section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

What is Impairment?

NPS Management Policies 2006, Section 1.4.5, *What Constitutes Impairment of Park Resources and Values*, and Section 1.4.6, *What Constitutes Park Resources and Values*, provide an explanation of impairment.

Impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values.

Section 1.4.5 of *Management Policies 2006* states:

An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated.

Per Section 1.4.6 of *Management Policies 2006*, park resources and values that may be impaired include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and condition that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structure, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park, but this would not be a violation of the Organic Act unless the NPS was in some way responsible for the action.

How is an Impairment Determination Made?

Section 1.4.7 of *Management Policies 2006* states, "[i]n making a determination of whether there would be an impairment, an NPS decision-maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969 (NEPA); consultations required under Section 106 of the National Historic Preservation Act (NHPA); relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision.

Management Policies 2006 further defines "professional judgment" as "a decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision-maker's education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities relative to the decision.

Impairment Determination for the Preferred Alternative

This determination on impairment has been prepared for the preferred alternative described in Section 4.2 of the Management Plan for Non-Native Wild Pigs within Congaree National Park and

Environmental Assessment. An impairment determination is made for all resource impact topics analyzed for the preferred alternative. An impairment determination is not made for visitor use and experience, park operations and facilities, and public health and safety because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

Findings on Impairment for Soils

Under the selected alternative (Alternative B), pig populations at CONG would be managed via the following methods: limited vehicular access and the placement of traps, protective fencing, curtain barriers, blinds, and stands; the temporary capture of non-target wildlife in traps; the use of dogs trained to only track the scent of pigs; and shooting. Impacts to soils would be limited to the localized disturbance of upper soil horizons resulting from the use of vehicles and the temporary placement of traps and other structures. Impacts to soils would be limited in extent and highly localized. The selected alternative would **not impair** soils because soil functions would continue to function naturally and support a wide range of plants and other biota.

Findings on Impairment for Vegetation

Under the selected alternative, impacts to vegetation would be the result of limited vehicular access and the placement of traps, protective fencing, curtain barriers, blinds, and stands. Impacts would be very limited in extent and highly localized. The selected alternative would **not impair** vegetation because the number of plants affected would be small and plant communities at the park would continue to function naturally and persist into the future.

Findings on Impairment for Wildlife and Special Status Species

Under the selected alternative (Alternative B), the control methods for non-native wild pigs would allow native wildlife to escape uninjured back into their natural habitats. Use of non-lead ammunition would have beneficial impacts to scavengers and other types of wildlife that might otherwise ingest or be exposed to lead. Any adverse impacts from trapping and shooting (e.g., noise and stress from temporary confinement) would be negligible to minor, short-term, and localized. The selected alternative would **not impair** native wildlife species because the authorized shooting and trapping activities are designed not to injure or kill native wildlife. Similarly, these activities would not jeopardize the continued existence of any special status species.

Findings on Impairment for Water Resources (water quality, wetlands, floodplains)

Water resource impacts associated with wild pigs include increased stream bank and floodplain erosion, sediment contamination of surface waters and wetlands, fecal contamination of surface waters, impacts to hydric soils, impacts to wetland plants, impacts to wetland wildlife, etc. In addition, because CONG is primarily comprised of wetland and floodplain habitats and was established for the protection of these specific resources, all natural resource impacts, including

those described for soils, vegetation, wildlife, special status species, and water resources, directly translate to wetland and floodplain impacts and an overall loss of ecosystem and park functionality. The selected alternative would ameliorate these impacts by reducing pig numbers. Impacts to water resources associated with limited vehicular access and the placement of traps and stands would be negligible to minor, short-term, and highly localized. The selected alternative would **not impair** water resources because the net impacts to these resources would be beneficial.

Findings on Impairment for Cultural Resources

Adverse impacts to cultural resources under the selected alternative envisions would consist of minimal substrate disturbance associated with the placement of traps, protective fencing, and other equipment. Over time, however, this alternative would reduce impacts to historic properties and other cultural resources associated with wild pig rooting and other disturbance. The selected alternative would **not impair** cultural, historic, and archeological resources because the net impact of the alternative on these resources would be beneficial.

Findings on Impairment for Wilderness Character

Non-native wild pigs represent a readily visible and continuing human-caused intrusion into wilderness due to substrate and vegetation disturbance caused by rooting, wallowing, and the creation and use of game trails. These and other ecosystem impacts degrade the natural quality of wilderness. Reduction of the numbers of wild pigs at CONG would improve the natural quality of the park's wilderness. Adverse impacts to wilderness under this alternative would be minor to moderate, short-term, and localized, and would arise primarily from physical disturbance associated with pig management activities. The latter could include using ATVs on partially re-opened former logging roads, as well as the placement of temporary human-built structures (traps, protective fencing, curtain barriers, blinds, and stands). (Such non-conforming uses in wilderness would need to be approved by the Superintendent using the Minimum Requirements Analysis process.) The preferred alternative would **not impair** wilderness character because over time the reduction of pig numbers would improve the natural quality of wilderness and produce a net positive impact on wilderness character.

APPENDIX D

ERRATA SHEETS and RESPONSE TO PUBLIC COMMENTS

CONGAREE NATIONAL PARK

ENVIRONMENTAL ASSESSMENT

MANAGEMENT PLAN FOR NON-NATIVE WILD PIGS

ERRATA

The following substantive changes are made to Management Plan for Non-Native Wild Pigs and Environmental Assessment in response to public comment:

Page 28

After paragraph one, insert the following:

“It is estimated that the average annual cost of this alternative would be about \$22,298.”

Page 29

Line 18, and thereafter in document as appropriate:

Change “hunting” to “shooting.”

Page 29

Change the first full paragraph to read as follows (new language in italics):

“There is strong evidence that focusing on removal of entire sounders is more effective than removal of individual wild pigs through *shooting* (Holtfreter et al. 2010). A sounder is a group of wild pigs composed of adult and sub-adult sows and their offspring. Sounders may range in size from 4 to 40 pigs. Wild pigs *within CONG may be* territorial at the sounder level (Ilse and Hellgren 1995, Gabor et al. 1999, Sparklin 2009). *If wild pigs within CONG are proven to exhibit territorial behavior, this could allow* for strategic, localized management that would be more effective in the long term than randomly removing pigs. There is much variability within the wild pig population resulting in variation among sounders. Wildlife cameras can be used to identify each sounder. Wildlife cameras also assist in estimating population, number of sounders and their location, and identifying effective trap locations.”

Page 38

Insert the following as first full paragraph on the page:

“It is estimated that the initial startup cost for this alternative would be about \$178,381. Thereafter, the average annual cost of this alternative would be about \$45,237.”

Page 90

Insert list of common and scientific name of all biota referenced in CONG Wild Pig Management Plan and EA.

Page 93

Insert list of abbreviations used in CONG Wild Pig Management Plan and EA.

RESPONSE TO COMMENTS

As required by the National Park Service (NPS) Director's Order No. 12, set forth below are responses from the NPS to all substantive comments submitted on the document entitled "Management Plan for Non-Native Wild Pigs within Congaree National Park, and Environmental Assessment."

Substantive comments from various individuals and organizations have been consolidated in this document. Director's Order No. 12 defines a "substantive" comment as one that does one or more of the following:

- Question, with reasonable basis, the accuracy of the information in the EA.
- Question, with reasonable basis, the adequacy of the environmental analysis in the EA.
- Present reasonable alternatives other than those presented in the EA.
- Cause changes or revisions in the proposal.

For purposes of this document, the actual wording of the commenter has been used wherever feasible. Some comments have been paraphrased for brevity. Where the same or similar comment has been raised by multiple commenters, NPS has responded only once.

The comments, with NPS' response, are set forth below.

1. The park should allow hunting by private individuals to help control the non-native wild pig population.

As a general rule, private hunting is prohibited in all NPS units designated "national parks." (It is also prohibited in "national monuments," CONG's former designation.) This prohibition stems both from legislation passed by Congress and from regulations issued to implement the statutory ban. See 36 CFR 2.2. Therefore, the NPS is prevented by law from authorizing hunting by private individuals at CONG. Furthermore, even if private hunting were allowed, experience by a range of land management agencies has shown that public hunting is generally insufficient to control wild pig populations. As noted on p. 39 of the EA, animals with very high reproductive potential, such as non-native wild pigs, are difficult to control and require a well-focused, comprehensive, and sustained effort by wildlife reduction professionals.

2. I enjoy seeing wild pigs at the park; the NPS should not harm these animals.

The NPS recognizes that some people enjoy viewing wild pigs at the park. Agency personnel are likewise aware that some people object to the killing of wild animals on philosophical grounds. However, NPS policy requires that parks protect natural and cultural resources from damage caused by non-native flora and fauna. See *NPS Management Policies* (2006) sections 4.4.4.2 and 6.3.7. At CONG, non-native wild pigs have caused, and continue to cause, substantial damage to natural and cultural resources, as detailed in the plan and EA. Therefore, a "do nothing" approach is not appropriate in this instance.

3. *The statement on page 21 (i.e., "Wild pigs are territorial at the sounder level") is a source of debate at the moment among researchers and is not true for all wild pig populations. Information on home range overlap within Friebe and Jodice (2009) is not presented clearly enough to state whether or not sounders at CONG are territorial or not. Control activities using the "whole sounder trapping method" should be included in the management plan; however, you need to be careful about basing your plan on territoriality among sounders until it has been documented to exist at CONG. Again, it does not exist in all wild pig populations.*

The comment is noted and the text has been changed accordingly.

4. *Methods and metrics for success. Are you going to have in place a protocol to assess pre and post operations success that can be meaningful? Rooting activity, reduced impacts, population estimates? You mentioned it in a few areas but a well-defined method might be good.*

As noted on page 37 of the plan and EA, a wild pig monitoring protocol would be developed and implemented to support the wild pig management program at CONG. Precise monitoring methods and metrics of success have not yet been established. The proposed approach is summarized in the plan as follows:

The objectives of the monitoring protocol would be to: 1) document baseline levels of pig activity and vegetation/soil disturbance prior to wild pig management at the park, 2) provide a means for periodically evaluating the effectiveness of wild pig management activities at reducing vegetation/soil disturbance within the park, 3) provide key information to support adaptive adjustments to the wild pig management program over time. Monitoring would be based on a wild pig disturbance index or indices based on recognizable pig field sign such as rooting, tracks, game trails, wallows, etc. Monitoring would consist of a series of simple walking transects that may include segments of existing hiking trails, stream banks, slough margins, unimproved roads, old logging grades, and the interior of dominant forest types at the park (mixed bottomland hardwoods, cypress-tupelo swamps) and other targeted habitats or special resource sites as needed. These transects may also incorporate the existing large forest monitoring plots that were used for prior pig disturbance research in the park over several years preceding the onset of management (Zengel 2008), linking the monitoring protocol to prior baseline data. Tasks would include a brief review of recent literature on pig disturbance monitoring. A draft protocol would be developed and tested in the field during an initial baseline data collection event. Following the field testing and initial data collection, a written protocol would be finalized and park staff would be field trained in the application of the protocol. Specific details concerning the length and number of transects, monitoring frequency, and whether transects would be fixed and repeated or randomly selected for each monitoring interval would be determined during protocol development. A mix of approaches could also be prescribed to meet the needs of the park and the wild pig management program. Monitoring conducted just prior to leaf fall may best indicate cumulative disturbance over several weeks to months; while monitoring conducted shortly after leaf fall may best indicate new rooting over short time-frames, providing a snapshot of pig distribution and perhaps abundance (Zengel 2008). Photo-

quadrats, found to provide clear visual documentation of the differences in disturbed and non-disturbed areas in each habitat type (Zengle 2008), could also be used

Other research and monitoring efforts conducted in support of the wild pig management program could include the following: wild pig population estimates and monitoring, wild pig natural history studies, radio-tracking studies, habitat studies, food availability studies, studies on alternative or refined wild pig management techniques, monitoring of pig disturbance or other impacts on native ecosystems and species, etc. Methods to efficiently estimate and monitor wild pig population dynamics, and studies on pig disturbance or impacts focusing on native vegetation, soils, and aquatic habitats such as small creeks could be particularly valuable.

5. I noticed a research component. Will this be done solely by NPS/USDA Wildlife Services personnel or in cooperation with research institutions/graduate students?

Research designed to capture vital statistics of the wild pig population such as overall population, sex, age, weight, neck girth, incidents of disease (brucellosis and pseudorabies), etc. in the population would be conducted by NPS staff and/or their appointed representatives. Research institutions wishing to gather field data for additional research questions can apply for a permit to work with NPS staff and or their appointed representatives to collect this data.

6. There's no budget to compare alternative A with B. Is this usually the case in environmental impact documents? Seems it would be an important consideration. Costs vs. benefits

The NPS paid USDA Wildlife Services (WS) \$89,190 over six nonconsecutive years for disease monitoring and limited pig removal. This averages out to \$22,298 per year. This figure would be the approximate cost of Alternative A.

The initial startup cost budgeted for Alternative B is \$178,381. Follow-on costs for Alternative B average \$68,497 after the initial startup cost. A ten year total with the startup included would amount to \$452,372. This averages out to \$45,237 per year.

While alternative A is less expensive it does not provide the benefit of significantly reducing the wild pig population at CONG. Alternative B, while more expensive, does provide the desired result of limiting resource degradation.

7. Commenters were unsure why the park would no longer contract with USDA for some activities, given USDA's experience with hog control at the park, and the park's current lack of personnel trained in the effort.

The USDA's Wildlife Services (WS) primary function at CONG, given the amount of funding available, was to conduct disease monitoring services and perform damage management on a scale consistent with funding constraints. The desired goals outlined in Alternative B cannot be realized given the levels of funding that WS received. If Alternative B is approved, NPS or its appointed representatives could scale up the current efforts and accomplish the desired reduction in the wild pig population necessary to prevent continued resource loss. The funding necessary to

achieve these goals would be on a project-funded basis, since authorization to increase the number of permanent employees at CONG would have to be approved at the regional level.

8. Duration and scope of some eradication efforts. The extent of efforts was unclear in some cases; it seems as though fencing and curtain walls would be used in small areas, and would not remain in place for a long time, but we were curious what a small area would be, and what would be considered a reasonable timeframe for their deployment. Cattle mounds are most attractive to feral hogs during floods, and it was unclear whether the walls and fencing could be effective (or effectively monitored) in event of prolonged flooding. There was a general sense that curtain walls could affect too many other park species and should perhaps not be deployed.

The placement of curtain barriers in waterways would be used to prevent passage of wild pigs through sensitive areas. Curtain barriers would likely be used in combination with fencing to protect small areas of historic value or those that contain sensitive plant or animal communities. Due to the cost associated with purchasing, installing, and maintaining these devices it is estimated that their deployment would be on a very limited basis to protect threatened resources. Fences placed around cattle mounds would protect them from rooting and to eliminate them as safe havens during flooding. The fences are designed to primarily exclude pigs since deer can easily leap over the barriers to graze and other, small to medium mammals, can climb over the barriers. In the event of prolonged flooding, monitoring would be limited until the areas were accessible. The goal is to protect these historically significant sites from further damage that is certain to occur if no actions are taken.

9. The park discussed precautions near heavily-visited areas, but I was interested in details for efforts that would almost surely come into conflict with visitor use. Feral hog sounders are established near heavily-visited areas, especially this past year. How would the park manage sounders in areas where the park's activities would need to be more sensitive to park visitors (e.g., near the Boardwalk)? It was mentioned that shooting might be concentrated in seepage forests; some seepage forests where hogs are most prevalent are quite close to Cedar Creek (e.g., the seepage forest west of South Cedar Creek Landing); what measures would be taken to ensure recreational canoeing/kayaking would be safe during a hunt?

Sounders located near high visitor use areas such as the boardwalk would be most likely removed through trapping. These traps would be placed out of sight of visitors accessing the park via the boardwalk. Temporary closures of small portions of the park would be conducted if necessary to protect visitor safety. The majority of shooting activity would likely take place outside main visitor use time-periods (during very early morning, late evening, and at night). Notice of wild pig management activities and closure areas would be posted on the park's web site, social media sites and at the visitor center and in the field, using signage, trail and boardwalk barriers, and other appropriate means.

10. Would the park have a special program to target hogs during nesting? How would the park typically eradicate a nest?

There is no plan to target pigs at birthing sites. Rather the focus will be on trapping sounders as they move across the floodplain. The fecundity of wild pigs is extraordinary, with female pigs

typically giving birth to two litters per year. To have an impact on overall populations the park needs to remove 70%-90% of the pig population. When sows with young pigs are encountered they would be exterminated as humanely as possible to realize the stated goal of population reduction.

11. *Obtaining access via existing roads/jeep trails should be used sparingly to discourage poaching.*

Vegetation removal and tree clearing will be kept to the minimum necessary to allow passage of an ORV. The Minimum Requirements Decision Guide used to approve the use of motorized vehicles within the designated wilderness portions of the park limits the amount of clearing to the minimal necessary to deliver traps to remote locations within the park. Use of motorized vehicles is limited exclusively to former logging roads that will be gated if necessary to prevent public use.

12. *The plan should require sterilization of Judas pigs before release back into the wild.*

Sterilization is impractical since it would require the services of a veterinarian to sedate the female pig and perform the sterilization procedure. Funding for this is not available at this time.

