

## 1.0 Purpose of and Need for Action

### 1.1 The Proposed Action(s).

The Sam Houston Ranger District proposes to improve habitat for various species of wildlife, including the Red-cockaded woodpecker (RCW), control non-native invasive plant species, and correct road and trail-related drainage and erosion problems in the Kidhaw Wildlife Habitat Improvement Project in Compartments 5 and 6 on the Sam Houston National Forest (NF). These activities will help meet the objectives in the 1996 Revised Land and Resource Management Plan for the National Forest and Grasslands in Texas (the *Plan*). The proposed action is briefly described below (see Chapter II for a detailed description of the proposed action):

- ◆ Thinning about 760 acres in pine-dominated forest communities, including about 150 acres of 25-year old loblolly stands;
- ◆ Thinning the hardwood component of mostly midstory trees on about 510 to about 10 trees per acre;
- ◆ Improving 4 miles of existing system roads; opening about 2 miles of temporary roads that would be closed and revegetated after use; decommissioning approximately 0.6 mile of existing system road;
- ◆ Controlling the midstory mechanically (mulch) on about 600 acres;
- ◆ Prescribe burning on approximately 820 acres on a one to five year cycle;
- ◆ Controlling non-native invasive plant species (NNIPS) encroaching on the blackland prairie in Compartment 5, stand 8 through herbicide treatment;
- ◆ Row thinning young pine-dominated portions of Compartment 5, stand 24, known as the Peden Tract, including

- planting native grasses in the resulting openings;
- ◆ Controlling NNIPS in portions of the Peden Tract (Compt. 5, stand 24), including planting native grasses;
- ◆ Improving space for a quarter-acre gravel parking area at the gated road accessing the Peden Tract (Compt. 5 stand 24);
- ◆ Controlling NNIPS along FM 149, National Forest System Road (NFSR) 219, Montgomery County-Taliaferro Road, and powerline rights-of-way (ROW) in the compartments;
- ◆ Removing barbed wire fences;
- ◆ Initiating a feral hog control program;
- ◆ Installing gates at intersections of powerline ROW and NFSRs 209 and 219 to reduce off-highway vehicle use and trash dumping; and
- ◆ Repairing erosion occurring where powerline ROW intersects with two unnamed tributaries of Kidhaw B ranch.

The Kidhaw Wildlife Habitat Improvement Project is located in Montgomery County on the west side of the Sam Houston NF, about two miles east of Richards, Texas. Compartment 5 lies north of Farm-to-Market Road (FM) 149, while Compartment 6 lies to the south. The eastern half of Compartment 5 was included in the 2006 Caney Creek Watershed Project and is not part of this project (see vicinity map in Appendix A).

### 1.2 Need for the Proposed Action

The Sam Houston District Interdisciplinary Team (ID Team) identified the need for the proposed actions by comparing the Plan's desired future conditions (DFCs) to the existing conditions in the Kidhaw Wildlife Habitat Improvement Project.

The Plan allocates land across the National Forests and Grasslands in Texas (NFGT) into management areas (MAs) and sets goals and objectives for the entire Forest as well as for

each MA. Management Area allocation is similar to zoning in that the ten different MAs in the Plan limit certain activities and set goals and objectives for these areas to meet or approach the DFCs. An MA is a selected grouping of national forest lands with similar land and resource characteristics, similar management goals, and common management prescriptions. Geographic areas, such as

wilderness or recreation sites, define some of these MAs, while others (riparian areas) cannot be defined in this manner.

The Kidhaw Wildlife Habitat Improvement Project encompasses about 820 acres in three management areas, shown below in Table 1-1:

**Table 1-1. MA allocations in the Kidhaw Wildlife Habitat Improvement Project**

MA	Description	Approximate Area (Acres)
2	RCW Emphasis	764
4	Streamside Management Zones	45
10b	Special Use Permit Sites (transmission lines, roads)	7

### 1.2.1 Improving Wildlife/RCW Habitat

The Plan describes general desired future conditions for the NFGT that consider a number of biological, physical, and social factors (the Plan, p. 43-45). Within MA-2, in which the majority of the Kidhaw Wildlife Habitat Improvement Project lies, the Plan describes specific desired future conditions and management emphasis for each forest community (the Plan, p. 98-102). The DFC and management emphasis are for open pine forests with large older trees, while offering a wide range of compatible uses, but primarily for the recovery of the RCW. Management goals include providing for viable populations of wildlife as well as providing users the opportunity to enjoy consumptive and non-consumptive use of wildlife.

The entire Sam Houston NF is a Wildlife Management Area (WMA), operated in cooperation with Texas Parks and Wildlife Department (TPWD). WMAs are established to perform research on wildlife populations and habitat, conduct education on sound resource management, and provide public hunting, hiking, camping, bird watching, and other outdoor recreation experiences (<http://www.tpwd.state.tx.us/huntwild/hunt/wma>).

This WMA is the second largest public hunting area and the most utilized by hunters in the state of Texas. The Sam Houston NF receives revenues from Annual Public Hunting permits to support hunter facilities and on-the-ground habitat management activities, such as the Kidhaw Project.

Pine dominates Compartments 5 and 6, and 70 percent of these forest communities are 73 years or older (571 acres). Habitat for RCW and wildlife in general, in these areas is less than ideal due to the heavily stocked stands and dense midstories. The potential exists to reduce the basal areas in C-5 and 6, helping to increase sunlight reaching the ground to encourage and support native grasses and forbs, improving habitat for various species of wildlife, including Eastern wild turkey, white-tailed deer, and various species of sparrows.

The potential also exists to control midstory vegetation. These areas have been prescribed burned in the past, but the hardwoods in the midstory have surpassed the size at which they may be effectively controlled by fire. Mechanical treatment would remove this layer of vegetation.

Prescribe burning of upland habitats in MA-2 will help to control small hardwoods and shrub species on the uplands, providing the opportunity for grasses and other herbaceous species to become established and flourish. Streamside Management Zones (MA-4) would be included within the burn areas, but would only burn to the extent that the fuels or site conditions allow. Prescribed fire would also reduce the fuel load, lessening the potential from damaging wildfire during adverse fire weather conditions. Prescribed burning would help to remove slash, needles, and leaf litter, which in turn would encourage growth of ground-level vegetation.

Table 1-2 displays the prescribe burn history for C-5 and 6 below. Although some perennial grasses and herbaceous species have become established, the herbaceous layer is in poor condition mainly because of the dense overstory and midstory. Continued prescribed burning at the higher proposed frequency, following the thinning and midstory control, would allow the development of grasses and herbaceous vegetation to meet the Plan’s DFC.

**Table 1-2. Prescribe Burn History for the Kidhaw Wildlife Habitat Improvement Project**

C-5	C-6
2008	
1998	
1994	
1989	
1981	

As the table shows, the portion C-6 in the Kidhaw project has no record of prescribe burning because of its location west of NFSR 219.

**1.2.2 Improving Wildlife Habitat on the Peden Tract**

Stand 24 is an acquired 90-acre piece of land, known as the Peden Tract. The Peden Tract consisted mainly of tame pasture while under

private ownership. Since the Sam Houston NF acquired this land, dense thickets of loblolly pine have grown up in places, while scattered remnant openings have been used for wildlife plantings. Non-native bermuda and bahia grass dominate the openings, along with other woody and herbaceous non-native invasive plant species. The potential exists to open the forested portions of the tract, while increasing native grasses and forbs in the understory through row thinning, NNIPS control, and planting of native grasses.

These actions would improve habitat for species such as Eastern wild turkey, Eastern fox squirrel, Henslow’s and grasslands sparrows, RCW, and Northern kestrel. These species use fire-maintained open woodlands and prairies with substantial ground cover of native bunch grasses and forbs.

Eastern wild turkey have been negatively affected by current habitat conditions resulting in population declines that have led to the closing of turkey hunting season on the Sam Houston NF and surrounding counties. This project’s objectives are compatible with turkey re-stocking habitat requirements established by TPWD.

Current access into the Peden Tract is limited by narrow roadsides (MTG-Taliaferro Road) and a gated entrance. In other words, narrow roadsides limit parking opportunities for hiking into the Peden Tract.

**1.2.3 Restoring Blackland Prairie**

Blackland prairies found within the Sam Houston NF are small grassland openings, in which the soils will not support pine-hardwood forest. The soils supporting these areas are heavy clay Vertisols, specifically the Ferris and Houston Black soils series, typified by a dark gray clay surface layer and high shrink-swell potential. The prairies are found in varying topographic positions, including uplands, sideslopes, and even valley bottoms.

NatureServe provides the following description of blackland prairies: “This community is naturally rare in the west Gulf Coastal Plain, occurring sporadically where areas of Vertisols are present. No high quality examples are known. All known existing examples of blackland prairies have been heavily degraded by past land uses; many more have been completely converted to other land uses. More than 20 examples occur on the Sam Houston National Forest, but all continue to be threatened by a variety of factors (NatureServe 2007).”

Where openings exist, they are dominated by perennial grasses and sedges, such as narrowleaf sumpweed, Texas wintergrass, smalltooth sedge, Cherokee sedge, and annual grasses like threeawn. The prairies also support several herbaceous plant species that are somewhat restricted to clayey Vertisol openings, including Whitehouse aster, smalltooth sedge, Indian-plantain, American basketflower, showy prairie-clover, bluebell gentian, and many others. The areas also contain more general herbaceous plants that are found in any kind of opening, including bushy bluestem, tenpetal anemone, prairie bluets, scarlet pea, purple horsemint, crow poison, and several others.

In recent years, blackland prairies on the Sam Houston NF have been degraded by livestock grazing, agriculture, oil and gas exploration, and fire suppression. Undesired trees and shrubs have encroached upon the prairies, from the edges. Woody species have almost completely encroached some of the prairies. Field data collected from these blackland prairies shows the following woody species: Eastern red cedar, deciduous dogwood, Texas sugarberry, roughleaf dogwood, gum bumelia, pasture haw, rusty blackhaw, green hawthorn, white ash, persimmon, loblolly pine, water oak, and winged elm.

C-5 contains one nine-acre blackland prairie, stand 8. The opportunity exists to treat some of the NNIPS, such as King Ranch Bluestem, helping to promote and sustain these unique plant communities and the benefits they provide as natural wildlife openings. Species that would benefit include Eastern wild turkey, Henslow’s and grassland sparrows, as well as the rare Texas ladies’ tresses plant (*Spiranthes brevilabris* var. *brevilabris*).

#### **1.2.4 Correcting Road-Related Drainage and Erosion Problems**

Another part of the DFC for MA-2 is a developed road system (the Plan, p. 87). Several low-standard roads provide access into C-5, and need limited improvement to maintain their utility and protect soil and water resources.

Some existing Forest Service system roads are not needed for long-term resource management. The opportunity exists to decommission these roads and remove them from the system.

#### **1.2.5 Controlling Non-Native Invasive Plant Species**

In 1999, President Clinton signed Executive Order #13112, which supports management activities that prevent the introduction of NNIPS and provide for their control. The order specifically directs government agencies to detect and respond rapidly to and control populations of NNIPS.

The Forest Non-Native Invasive Species Program Manager surveyed roads, the Peden Tract, and a powerline right-of-way (ROW), for NNIPS, and discovered several species present, such as Chinese tallow (*Triadica sebifera*), Chinese/European privet (*Ligustrum sinense*), Japanese climbing fern (*Lygodium japonicum*), Chinaberry (*Melia azedarach*), sorghum (*Sorghum halpense*), multiflora rose, (*Rosa multiflora*), Chinese wisteria (*Wisteria sinensis*), golden bamboo

(*Phyllostachys aurea*), and Mimosa (*Albizia julibrissin*) (USDA 2011a). These plants displace native vegetation and disrupt habitats as they become established and spread over time. Many non-native plants introduced for horticultural and agricultural use now pose a serious ecological threat in the absence of their natural predators and control agents.

Controlling these invasive plants would help to protect native ecosystems and biodiversity.

### **1.2.6 Controlling Non-Native Invasive Feral Hog**

Similar to the NNIPS described in the previous section, non-native invasive feral hog compete with native species, spread NNIPS through ground disturbance, and damage habitat. Current opportunities for feral hog control exist through recreational hunting and trapping. This project may allow resources for possible use of professional trapping as appropriate policy and regulations allow. In addition to managing impacts of feral hogs, TPWD reports that greater turkey poult numbers where professional hog trapping has been used.

### **1.2.7 Removing Barbed Wire Fences**

Several barbed wire fences remain in C-5, as well as many other portions of the Sam Houston NF from when livestock grazing was more common. Since grazing has been discontinued, the opportunity exists to remove these fences.

### **1.2.8 Correcting Erosion Problems on Powerline Right-of-Way**

A powerline runs through C-5. This powerline is frequently used by hunters on off-highway vehicles, as well as the pipeline ROW permittee, which has created ongoing erosion problems. These areas where erosion is occurring need to be fixed, to prevent further sedimentation into streamcourses. The opportunity also exists to install gates at the intersections of the powerline ROW and

NFSRs 209 and 219 to reduce off-highway vehicle use and trash dumping.

### **Desired versus Existing Conditions**

Table 1-3 compares the DFCs to the existing conditions of the biological and physical components of the environment in C-5.

Comparing the existing to the desired conditions highlights opportunities for change that exist in the project area. The ID Team developed the proposed actions specifically to address the opportunities for management identified by this comparison.

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**Table 1-3. Desired vs. Existing Conditions**

Desired Future Condition	Existing Condition	Needs	Management Opportunities
Manage habitat to provide for huntable wildlife populations, while maintaining populations of the many non-game species (the Plan, p. 47). Implement appropriate silvicultural practices that promote the diversity of the landscape (the Plan, p. 45).	Habitat is less than ideal in C-5 & 6 due to overstocked stands. Sunlight cannot reach forest floor because of dense forest. Herbaceous plants and grass species needed by various wildlife species are sparse.	Increase amount of sunlight reaching forest floor to increase herbaceous plants and grass growth, which will in turn improve huntable and non-game wildlife habitat through treatment of over-stocked stands.	Thin and reduce midstory and understory vegetation using a combination of methods such as mechanical treatments and prescribe burning..
Manage for a healthy, productive, and sustainable forest (the Plan, p. 47). Thin to maintain tree vigor and reduce SPB hazard and in stands where SPB hazard is moderate or higher (the Plan, p. 119).	Currently, many stands are dense, with basal areas ranging from 74 to 133 square feet per acre.	Improve forest health in C-5 & 6 through treatment of over-stocked stands.	Thin to reduce pine basal areas.
Protect and improve habitat for threatened and endangered animal species. (the Plan, p. 45). Midstory removal and control shall be completed in all clusters, replacement and recruitment stands. (the Plan, p. 110). Maintain a pine BA of 60-80 square feet and maintain a minimum spacing of 20-25 feet between dominant and co-dominant trees (the Plan, p. 119). Maintain hardwoods in the overstory and midstory scattered throughout the stands.	Currently, habitat for RCW C-5 and 6 is less than ideal due to over-stocked stands and a dense understory. RCW clusters, replacement, and recruitment stands have thick understories. Currently, these stands have pine basal areas which range from 74-133 square feet per acre.	Improve RCW habitat by applying treatments to over-stocked stands and dense understories.	Thin pines in RCW clusters, recruitment, and replacement stands, where basal areas exceed 85 square feet per acre to 70 BA. Reduce understory and midstory vegetation using a combination of methods, such as mechanical treatments, and prescribe burning.
Use prescribed fire as a tool to manage fire-dependent communities, for fuel reduction, and wildlife habitat improvement in combination with other treatments. Use prescribed fire to control the midstory, promote open upland forest communities, and to reduce fire hazard. Manage fire dependent ecosystems through a prescribed burning program, providing resource protection and ecological management needs (the Plan, p. 46, 62, and 104).	Woody understory species continue to dominate the understory of most of the area. Although some perennial grasses and herbaceous species have become established, the herbaceous layer is in poor condition due to the thick understory.  C-5 has been prescribe burned in 2008; C-6 was burned in 2010. Fuels have accumulated and the rapidly developing understory needs treatment to help create open upland forest communities.	Upland forest communities need to have reduction in the amount of understory and midstory hardwoods and woody vegetation that prevents the establishment of grasses and herbaceous vegetation.	Prescribed burning of uplands on a 1-5 year rotation could help to control small hardwoods and shrub species on the uplands, could increase grass and herbaceous growth, and reduce the fuel load.

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Desired Future Condition	Existing Condition	Needs	Management Opportunities
Revegetate or maintain permanent openings for wildlife using desired or appropriate native plant species (the Plan, p. 84).	Stand 8 is a blackland prairie. Stand 24 is a tract of acquired land containing several remnant openings dominated by non-native invasive bermuda and bahia grass.	Restore these openings to native plant species.	Remove woody debris and non-native invasive species from openings through cutting, prescribe burning, and herbicide use. Plant/seed with native plants.
A developed road system is evident in some areas in MA-2 (the Plan, p. 99).	Some roads in the project area have drainage problems that need correcting. Some roads would benefit from the addition of gravel on their surface. Some short, dead-end roads are not needed for regular management activities and could be eliminated.	<p>Improve road surfaces and drainage structures to reduce the amount of sediment produced from the transportation system.</p> <p>Roads that are not needed for long-term management need to be decommissioned.</p>	Restoring the road surface, adding crushed aggregate surfacing, clearing encroaching vegetation, and replacing drainage structures along roads could reduce erosion and sedimentation and improve fish passage. Decommissioning roads could also help eliminate some sources of sediment.
Detect and control populations of non-native invasive plant species (NNIPS) in a cost-effective and environmentally sound manner. Monitor NNIPS populations. Provide for restoration of native species and habitat conditions in ecosystems that have been invaded. NNIS management strategies must be considered for all proposed projects (Executive Order #13112 Invasive Species Letter from NFGT Forest Supervisor, August 30, 2007).	Surveys conducted in 2006 found several locations in C-5 and 6 invaded by NNIS, along FM 149, National Forest System Road 219, and Taliaferro Road. NNIS are also present in the blackland prairie in stand 8 as well as stand 24 (Peden Tract).	Work with Forest Botanist/Non-Native Invasive Species Program Manager to develop plan to control these known populations.	Control NNIPS occurring in C-5 & 6.

### 1.3 Public Involvement and Issues

The ID Team conducted scoping to determine the issues related to the proposed actions. Public notification began on March 10, 2011, when the district mailed a scoping letter to interested and affected agencies, organizations, and individuals. The letter outlined the proposed actions and requested their input. Comments received needed to address the proposed action and the purpose and need for this project, which is to improve habitat for various species of wildlife, including RCW, control non-native invasive plant species, and correct road and trail-related drainage and erosion problems. Based on public response and management concerns, the following issues have been identified:

1. Management activities such as logging and mulching could decrease hardwood competition. Protect site and size appropriate species such as white oak, Southern red oak, post oak, blackjack oak, bluejack oak, hickories, flowering dogwood, rusty blackhaw, flowering dogwood, dwarf pawpaw, white ash, winged elm, Allegheny chinquapin, gum bumelia, Mexican plum, sassafras, and blackgum on ridges and slopes where possible; and leave sweetgum, Eastern hophornbeam, red maple, winged elm, and water oak on mid to lower slopes and flats. Allow development of hardwoods into the canopy through the above-mentioned retention.
2. The proposed activities may increase soil erosion and sedimentation into streams.

Other issues and concerns will not be carried further in the analysis, but are addressed in the Issues Worksheet, in the project file.

### 1.4 Decision to be Made

The decisions to be made are:

- Whether or not to improve wildlife and RCW habitat by cutting pines and what method of cutting to use;
- Whether or not to improve wildlife and RCW habitat and reduce fuel loads and what prescribed fire actions to use;
- Whether or not to improve wildlife habitat on the Peden Tract and what actions to use;
- Whether or not to restore blackland prairie and what methods to use;
- Whether or not to control NNIPS and feral hogs and what methods to use;
- Whether or not to manage the transportation system in the compartments and what actions to take; and
- Whether or not to remove barbed wire fences and correct erosion problems along powerline rights-of-way and what actions to take.