



United States
Department of
Agriculture

Forest
Service

October 2009



Record of Decision

Northwest Sands

Chequamegon-Nicolet National Forest
Bayfield County, Wisconsin



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Acronyms Commonly Used in this Document

CNNF – Chequamegon-Nicolet National Forest

BE – Biological Evaluation

DEIS – Draft Environmental Impact Statement

EIS – Environmental Impact Statement

FEIS – Final Environmental Impact Statement

Forest Plan – 2004a CNNF Forest Plan

ID Team – Interdisciplinary Team

MA – Management Area (from 2004a Forest Plan)

NEPA – National Environmental Policy Act

NNIS – Non-Native Invasive Species

PR – Project Record

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Record of Decision

Northwest Sands Restoration Project USDA Forest Service Washburn Ranger District, Chequamegon-Nicolet National Forest Bayfield County, Wisconsin

Some Thoughts Before You Read this Document

Before you read this document, I want to share with you some thoughts and context for the decision I have made. Many decisions I make on a day-to-day basis are focused on managing how we as humans use National Forest lands (the product or recreation opportunity) such that the resources that it holds and the life that is dependent upon them are sustained. The decision I make here, while recognizing and providing opportunities for human consumption, is focused on land management for the primary benefit of the land itself and the species dependent upon it in the form of ecological restoration. I make this decision knowing that the actions contained within will show immediate and very tangible changes on the landscape that still only represent the beginning or continuation of what is really a decades-long restoration process. The focus of this work is on the Northwest Sands Pine Barrens, a very unique and rare ecosystem.

At the time of European settlement, there were approximately 2.3 million acres of pine barrens in Wisconsin (Curtis 1959). Today, only 1% of that total remains (Eckstein and Moss 1995). Due to this scarcity, pine barren communities are considered rare and imperiled both globally (G2) and in the state of Wisconsin (S2) by the Natural Heritage Inventory (WDNR 2007a). In a pine barrens ecosystem, plant communities with low densities of mature trees dominate and their pattern across the landscape is shaped and formed by natural disturbances like high wind events and fire. It is unlikely that the conditions that maintained this shifting mosaic of plants and trees will be seen across the vast landscapes that once numbered in the millions.

In 2004, a monumental decision was made in the Chequamegon-Nicolet National Forest Land and Resource Management Plan (Forest Plan) to remove 6,000 acres from the suited timber base (lands intended to produce and provide a sustainable source of timber for the public). These acres were added to the already designated Moquah Barrens special management area, increasing its size by 65%, a Forest Plan decision not taken lightly. As the scarcity of pine barrens compelled the Forest Service to increase the area designated for barrens management, so has it also instilled in me a sense of urgency to make sure that action is taken throughout the project area such that a tangible, real and measurable step towards a restored condition will have occurred over the life of this decision.

The following provides background and information about what makes the pine barrens rare, its importance, and what is associated with its unique nature. I will also describe what I mean by ecological restoration and how it applies to the very special place known as the Moquah Barrens.

PROJECT BACKGROUND

Background Information

Pine barrens (a type of savanna) are unique ecosystems found in the United States along the Atlantic coastal plains and the glacial outwash of the upper Midwest and Canada (Givnish 1993, Pregitzer and Saunders 1998). A pine barrens ecosystem is a type of plant community where mature trees (usually pines) are a component, but at low densities which allow grasses and forbs to become the dominant vegetation (Curtis 1959). The pine barrens of northern Wisconsin are located in three areas of the state: 1) the northwest barrens stretching from the Bayfield peninsula southwest through Burnett county to the St. Croix River; 2) several scattered parcels occurring in Vilas, Oneida, and Lincoln counties; and 3) the northeastern barrens occupying parts of Oconto, Marinette, and Florence counties (Eckstein and Moss 1995). Currently, less than 3% of the historic pine barrens in northwest Wisconsin are being managed for pine barrens and less than 2% of National Forest lands are designated for pine barrens management. After implementation of this project, the NW Sands project area will be one of the largest pine barrens management area in the state; second only to Crex Meadows Wildlife Area located in southern Wisconsin.

The Forest Plan describes the desired future condition of the Moquah Barrens core area and satellite barrens as relatively open and dominated by fire-adapted grass, forb, shrub, and tree species in a continually changing pattern of savanna-type communities (USDA FS 2004a, p.3-40). The literature supports that the vegetation components of open barrens, savanna, woodland, closed forest, and dense small trees are all part of the pine barren ecosystem. Analysis of the information gleaned from the General Land Office (GLO) survey notes from the 1850's shows that the Washburn Ranger District north of Highway 2 (where the NW Sands project area is located) was composed of a mosaic of closed canopy mixed red and white pine forest, semi-open red pine savanna, and open jack pine barrens (Radeloff et al. 1998, Kotar et al. 2002). There was a large area described as "savanna" in the general location of the present-day Moquah Barrens core area. For the NW Sands project, these components are planned for and characterized as:

- **Open barrens** is mostly open habitat in the pine barrens ecosystem with less than 1 tree per acre.
- **Savanna** is defined for this project as 1 to 40 trees per acre with red and white pine as the dominant tree species.
- **Woodland** is characterized as having 40-95 trees per acre with wide spacing (20-30 feet) between trees.
- **Closed forest** is characterized as having more than 95 trees per acre with the desired tree species being red, white, and older jack pine.
- The **dense small tree** component is characterized as having a high number of small tightly packed trees per acre, and the desired tree species is young jack pine.

Due to the dry conditions associated with sandy soil, fire played a large role in the creation, appearance, and maintenance of these five pine barrens ecosystem associated components, tending to encourage a suite of species that depend upon or are strongly associated with fire. Much as vegetation composition and structure are key to the form of the ecosystem, so is the function that fire plays as a process that maintains the form of this ecosystem. The NW Sands project proposes to re-establish fire as a key component in the restoration of the pine barrens.

The current condition of the NW Sands project area reflects a history that included: farming and abandonment; fire followed by decades of fire suppression; CCC tree planting; unmanaged ATV use that damaged vegetation; and, partnerships that helped restore a portion of the project area. The most degraded area is in the Open 26 ATV play area (now closed under the Forest Plan) where ATV use cut deep gullies and denuded the delicate sands.

By the 1960's, tree planting and fire suppression had caused open lands habitat to be closed in by brush and higher densities of trees. Concerns were raised regarding the sharp decline of the sharp-tailed grouse population, an open lands dependent species. This inspired the establishment of the 8,000-acre Moquah Wildlife Management Area (MWMA) (USDA FS 1965, Posner and Hildebrandt 2006). Since that time, the Forest Service has used a variety of tools such as timber harvest and prescribed fire to restore and maintain this area of pine barrens in a more open condition. Over the last forty years, efforts that started with a single species focus have evolved to a more restorative multi-species habitat emphasis. In the 2004 Forest Plan, the Forest Service added 6,000 acres and broadened its management to encompass restoration of the pine barrens ecosystem at a more comprehensive landscape level under Objective 1.4 (USDA FS 2004a, p.1-3). Prescribed fire is the primary management tool for this area as it most closely mimics the natural disturbance regimes that shaped the pine barrens (USDA FS 2004a, p.3-40). Much has been learned from these 40 years of experience and has been utilized to inform the actions and restoration goals laid out in the NW Sands project.

As with most ecosystems, an entire suite of plant and animal species is associated with the barrens. Many of these are beginning to return to the project area where past efforts in restoration work has occurred. Several Regional Forester Sensitive Species (RFSS) plants and wildlife associated with the pine barrens are present in the NW Sands area including ternate grapefern, sharp-tailed grouse, upland sandpiper, chryxus arctic and tawny crescent spot butterflies. But even with these efforts, the existing condition of much of the Moquah Barrens is dominated by closed forest and brushy lands as opposed to the open barrens, savanna, and woodlands that would have been more commonly found in a healthy pine barrens ecosystem.

Throughout my decision, you will see that I have placed the highest priority on restoring the pine barrens ecosystem. Due to the global rarity and small amount of pine barrens restoration currently in progress, it is important for me to see the Forest Service move aggressively to restore the range of components associated with a healthy pine barrens ecosystem. At the same time, we must recognize that we still have much to learn about this complex ecosystem and I want to ensure that our actions maintain some flexibility for adaptive management as the restoration process moves ahead.

I believe that a variety of other needs and desires can also be met – to the extent they are compatible with the restoration of a properly functioning pine barrens ecosystem. Our past experience with an experimental unit designed to test pine barrens restoration through burning without harvesting has been successful. In addition, the Forest Plan does not assume that any timber will be harvested in this area. With that in mind, I have determined that in most cases, we can increase the efficiency of our restoration projects and provide wood products and employment to the public through timber harvesting. Consequently, my decision recognizes the importance of restoring the barrens ecosystem on a landscape scale while also giving careful thought to providing wood products and considering the logistics and economics associated with the implementation of this project given the existing condition of the project area.

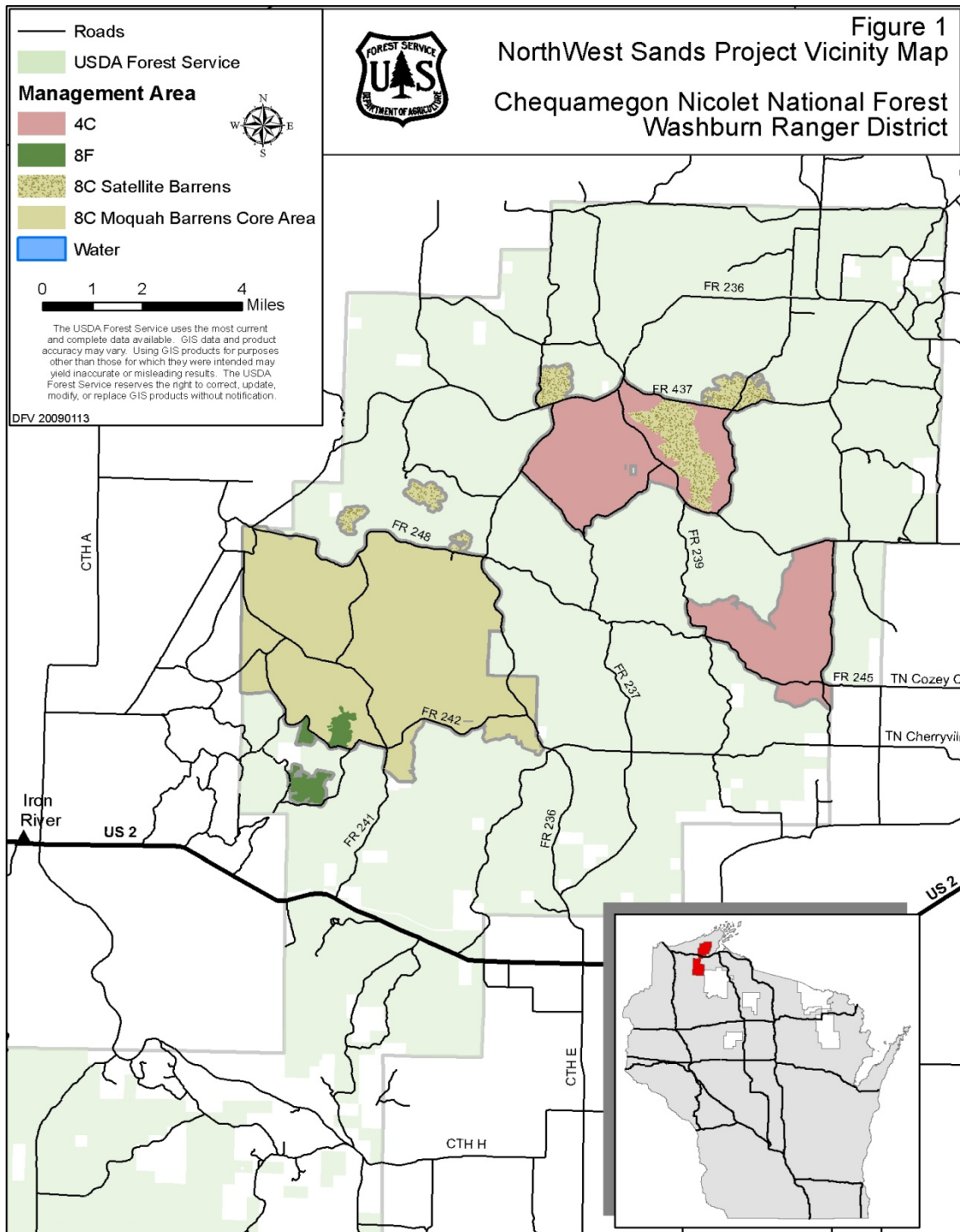
Location

The Northwest Sands project area is located in the northern portion of the Washburn Ranger District approximately six miles northeast of Iron River, Wisconsin. The legal description of the area includes lands lying within the National Forest boundary within T.49N, R.7W, Section 23-26, 35, 36; T.49N, R.6 W, Section 19-22, 27-33; T.48N, R.8 W, Section 12, 13, 24, 25, 36; T.48N, R.7W, Section 1-5, 7-11, 14-23, 26-36; T.48N, R.6W, Sections 2, 4-6, 10-16, 21-27; T.47N, R.7W, Sections 3-6, 8-10, 15-17, 20-22. The project area encompasses approximately 23,000 acres. While the project area contains some non-Forest Service lands, the Forest Service actions do not pertain to them.

Forest Plan Management Areas

The Northwest Sands project area is comprised primarily of pine barrens ecosystem . The Northwest Sands (NW Sands) project area encompasses three Management Areas (MA's) including 8C, 8F, and 4C (Figure 1). The desired future conditions of the three MAs (4C, 8C, and 8F) all emphasize pine barrens. The Forest Plan increased the area managed for permanent pine barrens (MA8C) by 6,000 acres for a total of approximately 15,000 acres. The NW Sands Project is a step towards restoring the project area to pine barrens. A description of each MA along with acres of each in the project area is displayed in Table 1.

Table 1 Northwest Sands Management Area Descriptions	
Management Area	General Direction
MA8C (15,000 acres)	The MA8C is composed of a large contiguous area named the Moquah Barrens Core area of about 13,000 acres and several smaller unconnected barrens areas referred to as "satellite barrens." The satellite barrens total approximately 2,000 acres of the MA8C. Their desired future condition is relatively open lands dominate the area, interspersed with mature trees, ponds, and other wetland types. Canopy closure varies from mostly open to 50% closure (scattered clumps of trees). Management activities such as prescribed fire and timber harvest are frequent and very evident. Forest inclusions are generally maintained but some are converted to open land through timber harvest or fire (USDA FS 2004a, p.3-40).
MA8F (500 acres)	8F's are designated as special management areas due to unique features. In the NW Sands project area, there are three 8F areas due to relic pine barrens features or pothole lakes. Management activities are generally limited unless it is needed to maintain the character of the area (USDA FS 2004a, p.3-54).
MA4C (7,400 acres)	Natural and plantation jack pine mixed with large temporary openings (up to 1,000 acres) that provide conditions similar to pine barrens. These surrogate barrens conditions are maintained through harvest on a regularly scheduled rotation of sites. Permanent pockets of pine and oak barrens communities exist (USDA FS 2004a, p.3-19).



Project Area Needs

An interdisciplinary team (ID Team) comprised of professional resource specialists conducted a review of the NW Sands area by assessing the existing vegetation conditions and comparing it to the desired future condition (DFC) that is described in the Forest Plan. A detailed roads analysis was also conducted in order to determine what type of road system is needed for long

term transportation needs and is also congruent with the goal of ecosystem restoration. This review and analysis identified the following opportunities (Purpose and Need, NW Sands FEIS Section 1.2) to initiate actions that would implement Forest Plan direction and restore the pine barrens ecosystem:

- In MA8C, restore the vegetation species composition and structure that typified the pine barrens that existed under a natural disturbance regime.
- Re-establish fire as a process in the restoration of the pine barrens ecosystem.
- Restore small, open areas and “pocket barrens” as a component of the overall landscape.
- Improve habitat for wildlife species that rely on the pine barrens ecosystem.
- Rehabilitate the closed ATV play area located in the Moquah Barrens core area.
- Provide a road system that meets the long-term transportation needs, fosters the restoration of the pine barrens ecosystem and reduces overall road density.

Issues and Other Resources addressed in the EIS

A variety of activities including timber harvesting and prescribed burning were developed to respond to the project area needs related to pine barrens and pocket barrens restoration. A description of these activities was shared with the public as the Northwest Sands Restoration Project Proposed Action in a scoping package in February 2008 and again in the Draft EIS in July 2009. Potential issues and impacts to various resources were identified as a result of public and agency input during these periods. These issues of concern and resources to be evaluated were used to generate alternatives and drive the scope of analysis. One key issue was analyzed:

1. The managing of 4,800 acres of open barrens with the desired brush cover of 30% may not result in adequate habitat for sharp-tailed grouse and other open-land associated birds of special interest (upland sandpipers, grassland sparrows, etc.).

Other resources that were also evaluated in the EIS included:

1. Soil Productivity
2. Water Quality
3. Air Quality
4. Non-native, Invasive Species
5. Threatened, Endangered, and Sensitive Species (TES)
6. Pine Barren Ecosystem
7. Economics

Alternatives Analyzed or Considered in the EIS

Three alternatives were developed for this project, two met the Purpose and Need, and a required No Action alternative. Alternative 1 was the No-Action, Alternative 2 was the Proposed Action (scoped with the public in February 2008), and Alternative 3 was developed in response to an issue generated during the initial scoping process. Alternative 3 proposed increasing the amount of open barren vegetation component within the Moquah Barrens Core area of the MA 8C to create a larger contiguous area of open barrens with less brush cover in the open areas than allowed in the Proposed Action.

DECISION

Based upon my review of all alternatives analyzed in the Northwest Sands FEIS, I have decided to implement a modified Alternative 2. The modification for Alternative 2 was developed to address concerns expressed about the amount of open barren component for open barrens dependent species such as sharp-tailed grouse and upland sandpiper. The single modification is an increase of 550 acres designated as open barrens resulting in an increase from 4,800 acres to 5,350 acres. My decision includes all relevant design features, management requirements, adaptive management, and monitoring provisions as described for Alternative 2 in the NW Sands FEIS (see Appendixes C - D). My decision has considered public and agency input, the analyses in the FEIS, the Northwest Sands Biological Evaluation and all associated planning records found in the Northwest Sands Project Record File.

As the responsible official for this decision, I have carefully considered the environmental consequences disclosed in the NW Sands FEIS. I believe the conclusions in Northwest Sands FEIS are solidly and comprehensively supported by the analytical documents in the project record. The information displayed in Table 2 shows the activities and outcomes of my decision. Appendix A and B to this document identify which activities apply to specific stands for the selected alternative. Additional details on the development and description of Alternative 2 can be found in Chapter 2 (Section 2.2) of the Northwest Sands FEIS.

My decision includes the following (based on the Decision Framework outlined in the NW Sands FEIS, section 1.4):

- 1. Which, if any, forested stands should be managed to modify species composition and stand density to create the varying pine barrens vegetation components;***

In MA8C, restore the vegetation species composition and structure that typified the pine barrens that existed under a natural disturbance regime:

The modified Alternative 2 would use timber harvest on approximately 6,225 acres and prescribed fire on 14,700 acres to restore the vegetation species composition and structure and to foster barrens restoration. Refer to Appendix A for a visual display of Alternative 2's proposed action.

- Heavy harvest of 2,470 acres, moderate harvest of 1,835 acres, light harvest 35 acres, clearcut harvest of 395 acres and sub-merchantable harvest across 1,490 acres.
 - Biomass treatments will follow and are in conjunction with the timber harvest treatments. Biomass includes 2,485 acres of topwood removal and 1,835 acres of topwood removal optional.
- Mechanically treat approximately 940 acres which includes up to 640 acres of roller chopping and 300 acres of other mechanical treatment (i.e. brushsawing or re-distributing slash with heavy equipment).
 - The above total includes butterfly refugia maintenance.

I am aware that some situations may arise that prevent implementing certain aspects of the project as originally planned and I am committed to an adaptive management approach for resolving those situations. This is described more fully further on in this document and in the NW Sands FEIS.

Re-establish fire as a process in the restoration of the pine barrens ecosystem:

Approximately 14,700 acres will be prescribed burned at least one time, with most areas burned multiple times. The use of prescribed burning will allow fire to continue as an ecosystem process that changes or enhances the structure and composition of the existing vegetation to be more consistent with a healthy, restored pine barrens. Because pine barrens is a fire-adapted ecosystem, proper restoration requires that fire be present on the landscape. Prescribed burning is the only tool that can most closely replicate the effects of fire on that ecosystem.

Restore small, open areas and “pocket barrens” as a component of the overall

landscape: Approximately 285 acres is proposed to be treated with timber harvest, mechanical brush control, and/or prescribed burning to create and maintain pocket barrens and upland openings in the MA 4C portion of the project area. Of those 285 acres, approximately 125 acres of pocket barrens will be restored by thinning and/or using prescribed fire. Another 35 acres (part of the total 285 to be treated) is currently a red pine stand with numerous small openings. Harvesting corridors between the openings and burning that area would create a new pocket barrens complex in an area that would have historically provided such habitat. Approximately 100 acres (also part of the total 285 to be treated) of existing pocket barrens would only need brush control through mechanical means and prescribed burning to maintain the desired vegetation structure and composition. The remaining 25 acres are small openings that will be brushed and/or prescribed burned to prevent natural succession to woody plants.

Improve habitat for wildlife species that rely on the pine barrens ecosystem:

Approximately 5,350 acres of the Moquah Core area will be managed as an open barrens component to benefit sharp-tailed grouse habitat. Also, at least one one-acre or greater patch of recently burned dead conifer trees will be managed for the black-backed woodpecker. Three areas will be maintained open with mechanical equipment and not burned to provide refugia for fire sensitive species of butterflies. The largest area (80 acres) is a pipeline/powerline corridor that is maintained open without fire by the utility company, under a special use permit. The other two refugia (14 and 15 acres) will be kept open with a brush cutter mounted on a tractor or similar equipment.

Rehabilitate the closed ATV play area located in the Moquah Barrens core area: The ATV play area will be rehabilitated by reshaping and filling in gullies, cutting trees to place in gullied areas, seeding and mulching, and planting trees. Although the play area is closed and these activities will improve the rate of re-vegetation on the site, it will continue to be highly visible to the public, therefore education signs will be posted at the site explaining pine barrens restoration and the damage that can occur from ATVs.

Provide a road system that meets the long-term transportation needs, fosters the restoration of the pine barrens ecosystem and reduces overall road density;

- 45 miles of roads will be decommissioned (40.5 of the 45 miles are currently closed on the ground by vegetation, 4.5 of the 45 miles are open on the ground). These roads were determined to be no longer needed during the roads analysis process.
- An estimated 19.5 miles of temporary roads will be constructed (12.5 of those miles will be road reconstruction on existing corridors) to facilitate timber harvest. They will be decommissioned after use.
- 0.5 miles of road will be converted to trail.
- 2.5 miles of road will be converted to fireline.
- 0.5 miles of fireline will be converted to road.

- Actual road construction and reconstruction mileage may vary depending upon site conditions, especially the temporary construction mileage estimates.

Table 2 Management activities and outcomes associated with the Selected Alternative Acres rounded to the nearest 5 acres, miles rounded to the nearest 0.5			
<u>Timber Harvest</u>	<u>Biomass Treatment</u>	<u>Acres</u>	<u>Harvest Type Total Acres</u>
Heavy Harvest	Topwood Removal	1,490	Heavy Harvest Total 2,470
	Topwood Optional Removal	910	
	Topwood Stays Onsite	70	
Moderate Harvest	Topwood Removal	980	Moderate Harvest Total 1,835
	Topwood Optional Removal	830	
	Topwood Stays Onsite	25	
Light Harvest	Topwood Optional Removal	35	Light Harvest Total 35
Clearcut Harvest	Topwood Removal	15	Clearcut Harvest Total 395
	Topwood Optional Removal	60	
	Topwood Stays Onsite	320	
Sub-merchantable Harvest	None	1,490	Sub-merchantable Harvest Total 1,490
<u>Total Acres of Biomass Treatment for All Harvest Types</u>			<u>Total Biomass Harvest</u>
Biomass Topwood Removal		2,485	5,810 (includes 1,490 acres of Sub-merchantable Harvest)
Biomass Topwood Removal Optional		1,835	
<u>Total Acres Mechanical Treatment</u>			<u>Total Acres Mechanically Treated</u>
Mechanical		300	940 640*
Acres receiving roller chopping		640	
<i>Total acres of roller chopping treatment (acres x number of treatments)*</i>			
<u>Prescribed Burning (1 or more burns)</u>		<u>Acres</u>	
Total Acres Prescribed Burned		14,700	40325*
<i>Total acres of prescribed burning treatment (acres x number of treatments)*</i>			
<i>*Recurrent activity acreage estimates from conceptual implementation strategy. This strategy is discussed in detail in the NW Sands FEIS Chapter 2, Section 2.4.</i>			

2. What design features, if any, should be applied to the management actions implemented to ensure that the activities are environmentally acceptable, and meet the intent of current direction, regulations and law;

All project design features and management requirements identified the NW Sands FEIS will be implemented to minimize potential adverse impacts that may result from implementing the proposed management activities (Appendix C). The Design Features are listed in Table 3.

Table 3 Northwest Sands Project Design Features	
Resource	Design Feature
Air Quality Design features for Burn Block Units A,B,F, I & J (Appendix C – Map 11 in NW Sands FEIS)	Burn block would be burned in one day if the dispersion index is good or excellent, or each be divided and burned over a two-day period or be restricted to specific wind directions to protect nearby sensitive receptors.
Air Quality Design features for Burn Block Units E,G & H (Appendix C – Map 11 in NW Sands FEIS)	Burn block would be burned in one day if the dispersion index is good or excellent, or be restricted to specific wind directions to protect nearby sensitive receptors.
Non-Native Invasive Species	All off-road equipment used on this project shall be cleaned before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds. "Off-road equipment" includes equipment used in site preparation, prescribed burning, and gully rehabilitation. Equipment will be considered clean when visual inspection does not reveal soil, plant material, or other such debris. Prior to moving Off-road equipment from a unit that is shown to be infested with NNIS, the equipment needs to be cleaned of seeds, soil, vegetative matter, and other debris.
Non-Native Invasive Species	Require seeding of disturbed sites such as landings and skid trail with native or desirable non-native species (FSM 2081.03 1995)
Non-Native Invasive Species	Any known NNIS infestations within or adjacent to high risk stands will receive control treatment two consecutive years prior to soil disturbance activities. 130 high risk stands in Alternative 2. 144 high risk stands in Alternative 3.
Recreation Management	Recreation design features for using a trail as a haul route for a timber sale. See Appendix C.
Recreation Management Closure of Temporary Roads Off Existing Trails	When closing temporary roads off trails reclaim the first 300 feet (or the distance necessary to prevent viewing the road from an intersecting or adjacent travelway, including motorized trail). This action may involve restoration of the natural topography, scarification of the roadbed (deep disking), utilizing erosion control measures, planting trees (may include transplanting of larger trees with equipment); and (or) placing natural obstructions that blend into landscape.
Recreation Management Temporary Road Construction Off Existing Trails	Design temporary roads off existing trails to be on upland locations with maximum slopes of 10% and contact engineering when temporary road placement is questionable due to slope or the turning radius for large trucks and equipment.
Regional Forester's Sensitive Species Bald Eagle	Timber harvest activities within 660' of the bald eagle nest will be limited to the time period of August 1 to February 15 to avoid disturbance to the eagles. Large, supercanopy trees suitable for eagle nesting or perching will be retained within 660' of the nest. Proposed clearcuts would retain large remnant red pine and white pine as reserve trees, which would keep the habitat suitable for bald eagles.
Regional Forester's Sensitive Species Northern Goshawk	Within a 30-acre buffer surrounding a goshawk nest activities that reduce canopy cover will not occur and out to 330 feet beyond that buffer only activities that do not lower canopy closure below 80% and that are considered uneven-aged management can occur. Project activities within the 30 acre buffer will not occur from February 15 to August 1.
Regional Forester's Sensitive Species Sharp-tailed Grouse	Periodic hand treatments (chainsaw, brushsaw) will be done to cut brush at active sharp-tailed grouse leks (used within the past 5 years) that obstruct visibility from 2' above ground above a 2-5% rise in the line of sight, adjusted for topography.

Table 3 Northwest Sands Project Design Features

Resource	Design Feature
Regional Forester's Sensitive Species Wild Comfrey, Ternate Grapefern, Canada Mountain Ricegrass, & Russet Cotton-grass	Any known NNIS infestations within and adjacent to stands that contain sensitive plants will receive control treatment two consecutive years prior to any soil disturbing activities.
Regional Forester's Sensitive Species Wild Comfrey, Ternate Grapefern, Canada Mountain Ricegrass, & Russet Cotton-grass	A 100-foot "no activity" buffer zone will encompass the sensitive plant population and if dozer-lines and/or skidding trails for stand access cannot be rerouted to avoid the "no activity" buffer zone then qualified personnel (District Plant Ecologist) will survey the proposed routes prior to layout to avoid any known sensitive plants.
Water Quality	Best management practices for prescribed fire (WDNR 2003) will be following for all prescribed burning activities and be part of the individual burn plans.

3. What monitoring requirements, if any, should be employed to assure activities are implemented as intended, and were effectively designed to meet Forest Plan standards and guidelines and the project objectives;

Monitoring

Within the Northwest Sands project area there are several populations of Regional Forester Sensitive Species (RFSS); Northern wild comfrey and Ternate Grapefern. Several design features were developed to minimize potential adverse impacts that may result from implementing the proposed management activities. In addition, due to the current high level of non-native invasive species in the project along road corridors, several design features were developed to minimize the risk of spread into the open barrens. Both the design features for the RFSS plants and NNIS (see Table 3) will be monitored for their effectiveness.

Monitoring for the NW Sands project includes the following, additional details can be found in Appendix D:

- **Adaptive Management Trigger Point 1: Part A Brush Density - Prescribed Burn**
- **Adaptive Management Trigger Point 1: Part B Brush Density – Rollerchopping**
- **Adaptive Management Trigger Point 2: Heavy Fuel Loads**
- **Adaptive Management Trigger Point 3: Whitepine Cone Crop**
- **Adaptive Management Trigger Point 4: Length of Time Between Prescribed Fire (8-12yrs)**
- **Adaptive Management Trigger Point 5: Roads**
- **Implementation Monitoring Non Native Invasive Species (NNIS)**
- **Implementation Monitoring Wild comfrey and Ternate Grapefern (RFSS plants monitoring)**

Monitoring for Adaptive Management

Due to the ecological complexity of the NW Sands pine barren restoration project, monitoring plays a large role in the implementation. First, an adaptive management approach was designed for this project so there is a built-in continuous assessment (monitoring – "If X happens...") and process for improvement ("...then the corrective action will be taken"). This type of administration allows managers to stay within anticipated impacts and continue to assess and monitor activities. Table 4 below summarizes the adaptive management strategy that will be followed for the NW Sands project. Below are adaptive management examples:

-
- If access routes are not adequate to prevent erosion in the harvest areas, the design features of this project require that another type of treatment (i.e. prescribed fire) be used to restore the desired structure to the area. We have found that road beds and furrows created more than seven decades ago are still evident on the ground. To minimize those long-term effects, this project restricts timber hauling routes in the MA 8C core area to road beds that already exist. Providing wood products in this restoration project will not be done at the cost of damage to the soils or loss of ecosystem components that will take decades or centuries to repair.
 - In addition, some of the existing roadbeds have not been used for many decades and there will be some road widening for modern equipment to operate. The resulting impacts of the widening will still be much less than the creation of an entirely new road bed. However, if widening of a road would require removal of pine trees larger than 14" dbh, I have decided that the value of such a limited resource in this ecosystem (we are only now beginning to regain some of the large pine trees historically common in the project area) compels us to find an alternate route or treatment. The importance of the large pine trees is also reflected in our plans for timber harvest. In order to enhance the rate at which the project area progresses toward the desired condition, harvest operations would select the smaller pine and leave the larger trees to grow into the larger size classes. Since trees larger than 14 inches dbh represent a desired component that is under-represented in the project area, they would not be harvested.

Table 4 Adaptive Management Monitoring and Summary of Trigger Points					
Goal, Indicators, Methods and Timing					
Trigger	Goal	Indicator	Method	When to Collect	Action or Adapt:
Trees have been harvested, leaving heavy fuel loads and (or) hardwood regeneration	Reduce hardwood sprouting and slash by burning 1-3 years after harvest & to have slash located in the appropriate areas to achieve the desired fire intensity	Current stand composition, brush density in adjacent stands, topwood prescription, payment unit closure date	Timber sale preparation process & unit prescription writing	Prescription writing and post harvest inspection	Move slash to appropriate stand, prepare burn plan and secure funding
Alternative 2: >50% brush cover or 30% cover by brush taller than 7'	Maintain barrens in a mostly open condition. Determine if prescribed burning is needed.	Brush height and density across the large management blocks (Core Area blocks A-J, or individual satellite barrens or pocket barrens).	FIREMON monitoring plots are used to determine the rate of increase in brush cover and height, which complements an extensive ocular survey of conditions across the burn block	Annual Basis, one growing season after burn	Schedule a prescribed burn to reduce brush
Alternative 2: >50% brush cover or 30% cover by brush taller than 7'	Maintain barrens in a mostly open condition. Determine if prescribed burn was effective or if follow-up mechanical treatment is needed.	Large areas (>100 acres) of a block did not burn intensely enough to reduce the brush height/density below the trigger point.	Ocular survey of conditions across the burn block	Post-burn within one growing season	Schedule a mechanical roller chop treatment to reduce brush

Table 4 Adaptive Management Monitoring and Summary of Trigger Points

Goal, Indicators, Methods and Timing					
Trigger	Goal	Indicator	Method	When to Collect	Action or Adapt:
White pine have produced a desirable cone crop (typically every 3-10 years) in stands where pine regeneration is a goal	Have adequate seed bed for white pine seed in areas where established white pine seedlings are not present or a few.	2 parts: Lack of white pine seedlings. Abundant seed/cone crop.	Evaluate seedlings if desired densities are not present. Evaluate cone/seed crop. This should include ocular estimates of abundant cone crop.	Information on seedling abundance could be collected any time the seedling would be visible (snow free conditions) If this is determined. Cone crop takes two years to mature.	Maybe no action. Just one additional consideration when developing the objectives and goals of the burn plan when in these areas.
The site was last burned 8-12 years previously	Restore fire as part of the ecosystem and encourage fire dependent species regeneration	No occurrence of fire in the past 8-12 years	Records of prescribed and wildland fire	Annual basis	If a prescribed burn has not occurred in the past 8-12 years, add block to the implementation schedule

Table 4 Adaptive Management Monitoring and Summary of Trigger Points

Goal, Indicators, Methods and Timing

Trigger	Goal	Indicator	Method	When to Collect	Action or Adapt:
<p>Harvest and transport of timber in the 8C core area – anticipated soil disturbance > 13%, pine trees >14” dbh interfere with access, or new roads are created.</p>	<p>Accomplish treatments with no road construction in 8C core area other than that designated on existing corridors. Utilize relic road beds, railroad grades or existing corridors to minimize soil disturbance</p>	<p>Combination of terrain features, skid distance and soil types indicates susceptibility to soil disturbance from harvest equipment.</p>	<p>Pre-harvest: Visual inspections of terrain, skidding distance, and existing roadbed. During implementation: visual inspection of damage to soils caused by harvest equipment</p>	<p>During sale preparation and implementation</p>	<p>Where field review shows designated access corridors would not meet resource protection goals, an alternative route on an existing road bed, if available and meets resource goals may be used. Where alternative access is not available, or for harvest units in which resource damage is determined to be likely or is beginning to occur will have the treatment method changed to a suitable replacement, such as cutting or girdling trees to the desired density without removal, or using prescribed fire to achieve the desired density. If an alternative treatment is not feasible, change the desired condition of the area to closed forest.</p>

Additional Activities

In addition to the harvest, prescribed burning, and road activities described by alternative above, the following would be carried out under all action alternatives. Activities such as fireline construction, log landings, and the others listed below are essential in order to achieve project objectives

- Fireline (both dozer-line and hand-line) would be constructed to implement the prescribed burning. In most cases, existing firelines and roads will be used; however, areas that have not been previously burned, such as the satellite barrens, and portions of the Moquah Core area along the project area boundary, will require 15 miles of new fireline construction. Following each prescribed burn, constructed firelines will be made impassable for motor vehicle traffic. Firelines will also be evaluated and rehabilitated if needed by seeding with native forbs and grasses and installing water bars.
- Helispots (helicopter landing) site designation was completed in the Moquah Core area to assist in the prescribed fire implementation of the action alternatives. Eight sites were identified that fit the helispot criteria; these sites would need improvements to create a helispot. Improvement activities may include brushing, tree removal, and (or) ground leveling of the touchdown pad.
- Road treatments that are components of the action alternatives include road decommissioning and temporary road reconstruction. Road decommissioning consists of “activities that result in the stabilization and restoration of roads to a more natural state (36 CFR § 212, FSM 7703).” This action may involve restoration of the natural topography, scarification of the roadbed, utilization of erosion control measures, tree planting; and (or) the placement of natural obstructions that blend into landscape.
- Landings for logging operations will be constructed for the purposes of processing and decking logs for transport. Log landings require leveling an area wide enough to accommodate a working area for processing along a road with sufficient space for a log truck to pass and then turn around. The area also needs to be clear of trees to sort logs into different products and to store log decks. In addition, if the harvest area requires whole tree removal, landings may need to accommodate slash. Bulldozing or grading actions will be limited to the minimum required to meet these needs. Log landings are needed in each payment unit of the timber sale and for each 60-80 acres of harvest. Landing size will range from $\frac{1}{4}$ acre to $\frac{1}{2}$ acre in most cases. Depending on harvest equipment, season of operation, slash requirements, timber markets, and amount of volume harvested, landing size in rare instances may reach 1 acre. Approximately 6,250 acres are proposed for harvest in the action alternatives, which would roughly require 80-100 landings and occupying a total area in the neighborhood of 20-50 acres. The type of disturbance that we are trying to limit within the core area is different than typical timber harvest considerations. Wherever possible, portions of road surfaces and road sides would be utilized for landing space, to minimize the need for construction. However, careful consideration would be necessary for landing construction on roads to decrease the interference to traffic. The following are ways landing size and disturbance could be minimized within the MA8C Core area during implementation: increase sale unit size; place landings where minimal soil disturbance will take place; utilize road and corridors for landings; and limit the numbers of sales utilizing the road system at the same time.

DECISION RATIONALE

I have selected a modified Alternative 2 because I believe it provides the greatest attainment of the project's purpose and need, meets the Forest Plan's goals and objectives of restoring pine barrens and addresses an issue brought forward by our partners and public. The modified Alternative 2 is based upon three main principles:

1. Meeting the Purpose and Need of the project
2. Consistency with the Forest Plan Goals and Objectives
3. How the Alternative addressed the Issues raised during the analysis

1. Meeting the Purpose and Need of the Project

The main purpose and need of the NW Sands project is to restore the pine barrens ecosystem. This includes the restoration of the structure and species composition of the vegetation, the creation of habitat conditions needed for wildlife, and to the extent possible, the re-creation of natural disturbance processes, such as fire and windthrow, which are essential components of a properly functioning pine barrens ecosystem. Restoring an ecosystem is a vast undertaking, which will require decades (or longer) and numerous successive actions to accomplish. In order to better understand the components of the pine barrens restoration, the ID team sought peer review from researchers, university professors and other state, federal and county government staff that have worked in the pine barren ecosystem.

Need 1) In MA8C, restore the vegetation species composition and structure that typified the pine barrens that existed under a natural disturbance regime.

In order to initiate pine barrens restoration on a landscape scale across the Northwest Sands project area five different components of the pine barrens ecosystem were formulated:

Table 5: Desired NW Sands Vegetation Components of the Moquah Barren Core Area		
Component	Brief Description	Desired Percentage
Open barrens	Very open (<1 tree/ acre) Brush cover < 30-50% and under 7ft tall Desired tree species = red, white, & jack pine	50 – 75% in general equal representation of each
Savanna	Mostly open (1-40 trees/acre) Brush cover < 30-50% and under 7ft tall Desired tree species = red, white, & jack pine	
Woodland	A 'park like' forest (40-95 trees/acre) Brush cover < 30-50% and under 7ft tall Desired tree species = red & white pine	15 - 30%
Closed forest	Typical forest conditions (>95 trees/acre) Brush cover < 30-50% and under 7ft tall Desired tree species = red & white pine	5 - 15%
Dense small trees	Many small trees, difficult to walk through Desired tree species = jack pine	5 -10%

The Northwest Sand ID Team took into consideration Forest Plan direction, the literature, existing forest conditions, logistics of implementation, and species dynamics when addressing these five components. The Forest Plan describes the desired future condition of the Moquah Barrens core area and satellite barrens to be a relatively open savanna-type community where fire-adapted grass, forbs, shrubs, and tree species are dominant (USDA FS 2004a, p.3-40) which has been addressed by assigning a higher percentage (75%) to open barrens and savanna.

The modification to the proposed action in my decision does not mean that I value sharp-tailed grouse more than the areas originally designated for savanna component that will be changed to open barrens habitat to benefit the grouse. I believe the amount of area to be managed as savanna component in my selected alternative will still meet the purpose and need for this project very well. MA8C core area will still be managed for 33% savanna and 42% open barrens. While they will not have equal representation in the core area, when the satellite 8C barrens areas are considered along with the MA8C core areas, there will still be more area managed for savanna than open barrens even with the modification.

Alternative 1 does not move towards the restoration of the pine barren ecosystem resulting in continued loss of pine barrens species composition and structure.

Need 2) Re-establish fire as a process in the restoration of the pine barrens ecosystem.

The role of fire is a critical process in the restoration of the pine barrens ecosystem. An ecosystem is defined not only by the physical features present, such as soils and vegetation, but also by the processes, such as fire and windthrow (Niemuth 1995), that drive the functioning of that ecosystem. Historically, fires played a large role in shaping the vegetation composition and structure of the pine barrens (Eckstein and Moss 1991, Radeloff et al.1999). Various aspects of the fire regime, such as the intervals between fires, changes in fire intensity, seasonality, and the patterns in which the fires burned across the landscape combined to create conditions that cannot be replicated by other means (Phillips et al. 2007).

The modified Alternative 2 entails prescribed burning to restore the desired vegetation structure followed by periodic burns that provide an 8-12 year fire interval to maintain the vegetation and the natural role fire plays in the ecosystem. In contrast, the lower tolerance for brush cover in Alternative 3 would require more intensive treatments that are soil and root (or rhizome) disturbing, such as a higher reliance on roller chopping, as well as more frequent burning. With such a low tolerance for brush in Alternative 3, it is questionable as to whether we would eventually be able to move to the desired 8-12 year fire interval.

Implementation of the modified Alternative 2 will also allow fire to play a more natural role in the open barrens, since ignition tactics would be designed to follow Forest Plan guidance (USDA FS 2004a, p.3-41) to allow fuels and topography to determine fire intensity, whereas implementation of Alternative 3 would have involved modifying lighting tactics to intentionally kill scattered groves and individual young pine trees in the open barrens. Those tactics (as well as the associated roller chopping) would also be likely to reduce survival of scattered, mature (fruit producing) barrens associated shrubs, such as juneberry, pin cherry, and hazel, many of which are important food sources for barrens associated wildlife. Thus, the more intensive lighting tactics needed to implement Alternative 3 would reduce the diversity of vegetation structure and composition that we would expect to find in a naturally functioning open barrens component. For these reasons, although Alternative 3 would be likely to implement more prescribed fire as a vegetation control tool in the NW Sands project area, I believe implementation of the modified

Alternative 2 better fits the need to re-establish fire as a process in the restoration of the pine barrens ecosystem.

Need 3) Restore small, open areas and “pocket barrens”

Restoration of open areas and pocket barrens are proposed in both Alternative 2 and 3. These pockets of barrens habitat are especially valuable in MA 4C because they provide permanent reservoirs of barrens habitat in the dynamically changing surrogate barrens surroundings. Thus, the pocket barrens serve as a source for barrens associated species to repopulate adjacent large areas of surrogate barrens which are allowed to grow into forested stands before being harvested to create temporary barrens habitat.

Alternative 1 does not restore these areas resulting in the density of pine and the encroachment of shrubs into these openings continues to increase, thereby, decreasing their ecological value as pocket barrens.

Need 4) Improve habitat for wildlife species that rely on the pine barrens ecosystem

Alternative 1 does not move towards the restoration of the pine barren ecosystem resulting in continued loss of the pine barren habitat for those species that rely on this ecosystem. Restoration of the pine barrens ecosystem that will in turn improve habitat for its associated wildlife species is proposed in Alternatives 2 and 3. Since the pine barrens ecosystem is comprised of a number of habitat types and restoration efforts can vary greatly in method, scale and timing, the benefits to barrens associated wildlife will also vary.

Alternative 2, as modified, would be somewhat better than Alternative 3 for improving black-backed woodpecker habitat, since the additional acreage converted to savanna (as opposed to being converted to open barrens) would provide more opportunities for using intense fire to kill trees to reach the desired structure, which would provide the favored habitat for the black-backed woodpecker. In contrast, even patches of dead trees are undesirable in the open barrens under Alternative 3, since those trees may inhibit movement and lower the habitat value for sharp-tailed grouse.

Alternative 3 provides more of the contiguous open barrens habitat required by sharp-tailed grouse and upland sandpipers than Alternative 2. In response to several comments from the public and after careful consideration of the landscape scale patterns proposed for the project area, I find that there is an opportunity to increase the amount of open barrens by changing the desired condition of some of the previously designated savanna areas in Alternative 2 in order to not only provide more contiguous open habitat, but also to remove some of the “walls” of trees that were identified as a behavioral barrier for sharp-tailed grouse movement. Thus, while the modified Alternative 2 will still provide less open barrens habitat than that identified in Alternative 3, the areas of highest concern are being addressed.

In contrast to concerns about the amount of open lands, the brush cover triggers and responsive actions (i.e. when to use fire vs. roller chopping) identified in Alternative 2 appear to be better supported by the sharp-tailed grouse literature, as well as public comment, than those identified for Alternative 3. As I described for Need 2, above, the brush cover triggers and ignition tactics (as well as the associated roller chopping) that would be used under Alternative 3 would also be likely to reduce survival of scattered, mature (fruit producing) barrens associated shrubs, such as juneberry, pin cherry, and hazel, many of which are important food sources for barrens associated wildlife, including sharp-tailed grouse.

Similar to the differences between Alternative 2 and Alternative 3 regarding sharp-tailed grouse habitat, the greater extent of open barrens proposed for Alternative 3 would benefit rare

butterflies, whereas the brush cover triggers described for Alternative 2 would be more beneficial. This is because the species of concern rely on open habitat, but the triggers for Alternative 3 would entail burning while the habitat is still being used by the species, leading to a loss of some colonies and the burning interval may be too short to allow adequate recolonization by some species in some large areas between burns.

Since there are pros and cons associated with each alternative in respect to wildlife species that rely on the pine barrens ecosystem, I have decided to listen to the public comments and resource specialists and improve on the “pros” of Alternative 2 by making the modification to increase the amount of open barrens habitat, while maintaining proposed the brush cover triggers, which are already beneficial to barrens associated wildlife. In this way, we can continue to enhance the restoration of all aspects (vegetation, wildlife and natural processes) of the pine barrens ecosystem.

Need 5) Rehabilitate the closed ATV play area located in the Moquah Barrens core area

The rehabilitation of the closed ATV play area located in the Moquah Barrens core area is proposed in Alternatives 2 and 3. The closed ATV play area would be rehabilitated by restoring native ground cover and other vegetation as a part of restoring pine barrens, aesthetics and soil productivity. Alternative 1 does not rehabilitate the play area resulting in continued erosion and does not move this area towards a pine barren ecosystem.

Need 6) Provide a road system that meets the long-term transportation needs, fosters the restoration of the pine barrens ecosystem and reduces overall road density

The last need identified in the Northwest Sands Project Area was to provide an efficient and safe road system. A roads analysis was conducted for the project area that resulted in recommendations that would provide a safer and more efficient transportation system. Alternatives 2 and 3 all propose road activities consistent with the recommendations from the roads analysis and are similar in the amount of miles proposed for closure and decommissioning. Alternative 1, the No Action Alternative, by contrast does not decommission or close any roads; therefore, in comparison to the other action alternatives it does not provide the most efficient and safe road system.

2. Consistency with the Forest Plan Goals and Objectives

The 2004 Chequamegon-Nicolet Forest Plan comprehensively considered the range and diversity of habitats that would be needed in order to provide the forests conditions, resources, and outputs to serve the needs of the public. The NW Sands Project lies in an area of the forest allocated for pine barrens. There are two areas within the Chequamegon Nicolet National Forest which focus on large open areas, MA8C Riley Lake Wildlife Area and Moquah Barrens Area. The MA8C acres are very different than the rest of the Forested areas in terms of soils, site productivity, and forest tree species. In addition, Moquah Barrens and Riley Lake Wildlife Area are also very different from each other. The majority of the Riley Lake Wildlife Area is a wetland in contrast to the dry sandy soils of the Moquah Barrens. These differences have lead also to differences in understory plant and wildlife species that are dependent on pine barrens ecosystem.

The Forest Plan set aside this area to restore the mosaic of pine barrens components that once dominated the area. The Plan intended for Northwest Sands project area to be managed for pine barrens and removed these MA8C acres (along with others such as designated Wilderness MA5) from the lands suitable for timber production. This area emphasizes a different, and equally important, suite of natural resource values and human uses at a Forest-wide or landscape scale. Pine barrens in Northwest Sands Project Area were not relied upon by the

Plan to assure the viability of “interior hardwood” species, such as the northern goshawk or pine marten. Instead, the Plan intended there must also be enough areas to provide habitat conditions favorable to species such as black-backed woodpecker, chryxus arctic and tawny crescent spot butterflies, upland sandpiper, and others.

I considered the promise the Forest made with the public to manage this project area as pine barrens and the context of Northwest Sands restoration acreage compared to the greater ecological landscape. Since all Northwest Sands alternatives were similar in minimizing environmental consequences, the key factor in my decision was how the alternatives achieved the desired conditions described in the Plan for Northwest Sands management areas (4C, 8C and 8F). With the exception of Alternative 1 (No Action), both action alternatives implement the Forest Plan’s description of a desired future condition of the Moquah Barrens core area and satellite barrens to be a relatively open savanna-type community where fire-adapted grass, forb, shrub, and tree species are dominant (USDA FS 2004a, p.3-40). Also, both action alternatives restore the same acreage of small, open areas and “pocket barrens” within the ranges specified by the Forest Plan (USDA FS 2004a, p.3-20).

The action alternatives would also have a long term beneficial impact on black-backed woodpecker, sharp-tailed grouse, chryxus arctic and tawny crescent spot butterflies, upland sandpiper and ternate grapefern. This determination was a result of the proposed pine barrens, pocket barrens, and opening restoration, which would improve habitat for the species in all alternatives.

My decision to implement a modified Alternative 2 will improve pine barren ecosystem within the project area through the restoration of the structure and species composition of the vegetation, create habitat needed for wildlife, and to the extent possible, the re-creation of the natural disturbances processes, such as fire and windthrow. I feel that the modified Alternative 2 best meet’s the project’s purpose and need, and, responds well to Forest Plan direction pertinent to restoring the pine barrens ecosystem and transportation management (USDA FS 2004a, p.3-39 and 2-26, Appendix BB).

3. Issues Raised During Analysis of the Project.

Also of high importance in my decision was how well each alternative addressed the issue regarding the size of open lands component of the Proposed Action that was raised during the analysis process. There was concern that managing 4,800 acres of open barrens with the desired brush cover of 30% may not result in adequate habitat for sharp-tailed grouse and other open-land associated birds of special interest (upland sandpipers, grassland sparrows, etc.). They suggested that the open barrens vegetation component should be increased since it is the least common vegetation component in the greater Northwest Wisconsin pine barrens ecosystem and because it would improve habitat for wildlife species.

I am also very concerned about area sensitive wildlife species that inhabit the pine barrens ecosystem, such as the sharp-tailed grouse. I have carefully considered suggestions to increase the area managed as open barrens in order to provide more habitat for the sharp-tailed grouse and other open barrens associated species and have decided to modify the proposed action to increase the amount of area managed as open barrens to approximately 5,300 acres. While this does not reach the theoretical goal of 10,000 acres to provide a long-term genetically viable population, the project area will have the second largest acreage of open habitat available among the nine areas recognized by the State of Wisconsin as being managed for sharp-tailed grouse. Only Crex Meadows Wildlife Area will have more acreage of suitable habitat available for sharp-tailed grouse.

The project area, as well as the other seven sharp-tailed grouse areas in Wisconsin, will likely need periodic supplemental stocking of sharp-tailed grouse to maintain genetic diversity and the State of Wisconsin is already planning for this need. Since the genetic needs of the species can be met through the Wisconsin's sharp-tailed grouse management strategy, I do not believe it is in the best interest of barrens restoration to manage 10,000 acres of the 13,000 acre 8C core area in one habitat type. Keeping in mind that my priority is for pine barrens restoration, I take satisfaction in knowing my decision provides a contiguous area of habitat for sharp-tailed grouse second in size only to Crex Meadows Wildlife Area, while still maintaining the diversity of structural components identified in the purpose and need for this project.

In addition, this strategy of significant but prudent conversion to open barrens allows more options available for adaptive management as we implement and monitor the project. If in future years, we find that there is a compelling need for more open barrens habitat, it would be much easier to remove trees from areas being managed for savanna, woodland or closed forest and restore open barrens than it would be to find that we are lacking in the savanna or woodland components and try to re-establish large trees in areas where they have been removed to create open barrens. In other words, removing more trees in the future, if desired, can be accomplished much easier than it would be to get large trees back once they have been removed.

Therefore, I believe a modified Alternative 2, that follows the triggers developed for the proposed action and the increased acreage managed for open barrens, best fits the purpose and need for this project. The discussions under the Decision Rational for Needs 2 and 4 further describe how this choice is the best fit for this project.

Other Alternatives Considered

In addition to the selected alternative, I considered two other alternatives. More details on these alternatives can be found in the Chapter 2 of the NW Sands FEIS Section 2.2 and 2.4.

Alternative 1 - No Action

Alternative 1 is the No Action Alternative. Under this alternative, none of the specific management activities proposed by the Northwest Sands project would occur. None of the proposed activities including pine barrens restoration, timber harvesting, prescribed burning, opening maintenance, and road decommissioning would be implemented. Ongoing and permitted uses such routine road maintenance would continue to occur within the project area.

I did not choose Alternative 1 because it does not respond to any of the Purpose and Need components (NW Sands FEIS, Chapter 1) and therefore none of the identified objectives would be met. Specifically, since there would be no restoration management activities under this alternative, the imperiled pine barrens ecosystem will continue to disappear. The management area 8C will not have the vegetation species composition and structure that typified the pine barrens that existed under a natural disturbance regime. Fire will not be re-established as a process in the pine barrens ecosystem. The effects of no action would result in 85% of the project area having a high departure from its historic fire regime (NW Sands FEIS, p. 2-24). Less than 1% would remain in its fire regime. Fire exclusion would result in the encroachment of shrubs and trees on the open barrens and savanna. In the woodland and closed forest, the encroachment of shrubs and shade tolerant tree species would occur along with the loss of shade intolerant species such as jack pine.

I believe the progress that can be seen in the past restoration efforts in the Moquah Barrens core area within the project area reveal a strong case that we can effectively restore pine barrens habitat. Furthermore, if none of the management activities proposed are undertaken, the existing pine barren habitat would start to revert back to a forested landscape and the habitat for species that rely on this open land such as RFSS butterflies and sharp-tailed grouse would be diminished.

This alternative would not provide an avenue for restoring small, open areas and “pocket barrens” as a component on the landscape to their desired conditions as described in Chapter 3 of the Forest Plan. Nor would it rehabilitate the ATV play area or provide a safe, efficient, and effective road system that meets the long-term transportation needs (NW Sands FEIS, p. 1-5).

Alternative 2 – Proposed Action

Alternative 2 was modified and is the selected Alternative for the Northwest Sands Project. All of the initial components for the proposed action are included in the modified alternative and they adequately met all three of the criteria under the decision rationale.

Alternative 3 – Concerns Regarding the Open Barrens Component

Alternative 3 was developed to address the concern regarding the size and characteristics of the open lands component in the proposed action. It was designed to increase the open barrens acres and lowering tree density and shrub cover beyond what was proposed in Alternative 2. Under Alternative 3, the Desired Future Condition (DFC) for the area would designate more acres to the open land component and manage these acres more intensively by prescribed fire and mechanical treatment. For example, it incorporates the suggestion to keep the brush cover in the open barrens component lower than 20% and shorter than 5 feet to benefit sharp-tailed grouse.

I did not choose Alternative 3 in its entirety since the lower tolerance for brush cover would require more intensive treatments such as a higher reliance on roller chopping, as well as more frequent burning. For additional details, see the discussion under Need 2 and Need 4 starting on page 19.

Other Alternatives Considered but Dropped From Further Analysis

I considered an alternative suggested by a respondent who thought there would be a decrease in the economic returns on the original investment of establishing some of the red pine stands proposed for harvest. The concern was focused on the proposed action to harvest these stands before their age of maturity in an effort to rapidly convert them to pine barrens. The stands of concern fall within the MA 8C laid out in the Forest Plan. They were identified in the Forest Plan for pine barrens and removed from the suitable timber base. I believe the ID team identified the most efficient way to restore the pine barrens ecosystem. In addition, a preliminary economic analysis showed that the action Alternatives developed, Alternatives 1 and 2, had higher present net value that would yield more dollars and return on the original investment compared to growing the trees over time and conducting multiple harvest entries.

The main reasons for eliminating this alternative from further detail was that it does not meet the Purpose and Need of the project or the intent of the Forest Plan for this management area. The Forest Plan directs the restoration of the pine barrens communities through the objectives under Goal 1.4. These objectives emphasize the restoration of natural disturbance regimes, structural and compositional features, and other characteristics that are currently underrepresented on the

Forest (USDA FS 2004a, p.1-2). The Forest Plan states that prescribed fire is the primary management tool for MA 8C (USDA FS 2004a, p.3-40). Additionally, results of this economic analysis, along with the alternative's increased need for additional fire line and failure to accomplish the re-establishment of fire in these pine stands were all considered in reaching the conclusion to dismiss this alternative from further study.

I also considered an alternative suggested by a respondent to take a slower approach in achieving the desired future condition for the vegetative components. The suggested alternative included multiple thinnings in the red pine stands to provide a some level of revenue over time which could be re-invested to meet future goals through mechanical treatments and prescribed burning in the project area. I feel that the Forest Plan has already made a higher level decision to remove this area from the suitable timber base and restore it to pine barrens. Such an alternative that delays the movement of these pine stands to the desired future condition would not support Forest Plan direction, nor is it consistent with Northwest Sands Purpose and Need for restoring the vegetation structure.

See the NW Sands FEIS Chapter 2 Section 2.3 for a description of the individual components suggested and the foundation for not analyzing the suggested alternatives in detail.

Environmentally Preferred Alternative

When an environmental impact statement has been prepared, the Record of Decision must identify all alternatives that were considered, "...specifying the alternative or alternatives which were considered to be environmentally preferable" (CEQ, Section 1505.2 (b)). The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in the NEPA's Section 101. Ordinarily, this means the alternative 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.

I have reviewed all three alternatives with respect to these criteria. Alternative 1, (No Action) differs substantially from action alternatives in that it proposes no new activities. This alternative would not meet the purpose and need as defined for this project and therefore would allow for further departure from the structure and composition consistent with a pine barrens ecosystem and would not enhance the natural resources in the project area.

All of the action alternatives are designed to minimize environmental damage and protect resources—none of these alternatives would exceed Forest Plan thresholds and the NW Sands FEIS did not identify any significant, adverse effects (NW Sands FEIS, Chapter 3). Alternative 2 and 3 have similar harvest areas but differ in the type of harvesting techniques and prescribed burning activities; however, they are similar in amount of road closures and decommissioning. Since Alternative 2 has the least amount of mechanical treatment (rollerchopping acres) it could be considered to be environmentally preferable.

Environmental Protection Agency (EPA) Recommendations

During the 45-day public comment period, the EPA submitted a letter assigned a rating of "Lack of Objections." They asked that two points be clarified or added to the NW Sands FEIS. We have considered EPA's suggestions and included appropriate updates and responses in the NW Sands FEIS.

Public Involvement and Issues

A noteworthy amount of public, tribal, and other agency involvement has occurred throughout the life of this project. The following summarizes the public involvement process that has occurred for the Northwest Sands Project:

- February 14, 2008: A letter detailing the proposed action and maps of the proposed treatments was mailed to approximately 100 groups and individuals. These groups and individuals had indicated on Washburn District's most recent mailing update to be interested in vegetation management projects or were believed to be potentially affected by the Northwest Sands Project. Several ads were placed in the local newspapers and a public meeting was held on February 28, 2008.
- December 17, 2008: Notice of Intent to prepare an environmental impact statement was published in the Federal Register. This notice asked for public comments on or before January 10, 2009.
- February 14, 2008: A letter of consultation was sent to interested Tribal contacts and some subsequent meetings occurred.
- July 2009: A 45-day public review period was initiated by publication of the Notice of Availability (NOA) of the DEIS in the Federal Register, as well a news release in the Ashland Daily Press and County Journal. Several public field trips were also hosted during this time.
- July 2009: A letter announcing the availability of the Draft EIS on the forest website or mailing of a hard copy of the Draft EIS were distributed to approximately 100 interested individuals including; Federal, Tribal, state, county and local agencies.
- October 2009: On October 16 a Notice of Availability (NOA) of the NW Sands FEIS in the Federal Register.

During the initial scoping period 12 responses were received. In addition to expressions of either support for or opposition to the project, respondents voiced a variety of concerns relative to the potential adverse impacts on air quality, wildlife habitat, funding, and forest vegetation. Alternative 3 was developed in response to comments from the initial scoping package.

In response to the DEIS, a total of 17 responses were received during the legal comment period. Most of the comments pertained to sharp-tailed grouse, acres of open land component, hunting access, and economics. In addition, meeting and/or conference calls were held with various respondents to seek clarification regarding a potential issue raised in their response letters. No additional alternatives were developed in response to comments on the DEIS.

FINDINGS REQUIRED BY LAWS AND REGULATIONS

Consistency with the 2004 Forest Plan

I have compared the goals, objectives, and mitigation measures of the NW Sands Project with those in the 2004 Chequamegon-Nicolet National Forest Land and Resource Management Plan and find them consistent as required by the National Forest Management Act Section 1604(j). I have reviewed all applicable requirements of the Forest Plan in conjunction with my selected action. I find my selected action to be consistent with the 2004 Forest Plan.

1973 Endangered Species Act, as amended

Species lists were provided to the Forest Service by the U.S. Fish and Wildlife Service in 2004 and 2006. Analysis of the species indicated that actions authorized in the selected alternative will have no effects on any federally listed species (NW Sands FEIS, Section 3.3.8). In September 2008, during the Proposed Action scoping process, the U.S. Fish and Wildlife Service and the Forest Service conducted a field trip of the project area to address the potential effects of this project to Kirtland's warbler.

During the draft EIS review process the U.S. Department of Interior, Office of Environmental Policy and Compliance, stated in their letter that the proposed action was consistent with the long-range strategy for the Forest set forth in the Forest Plan and found that the DEIS adequately addressed the concerns of the Department regarding fish and wildlife resources, as well as species protected by the Endangered Species Act.

Clean Water Act

No long-term detrimental water quality effects are expected to occur from sedimentation, large woody debris removal, water temperature increases, or lateral sub-surface flow in wetlands due to the nature of the project locations and the application of Forest Plan standards and guidelines, Best Management Practices, and design features (NW Sands FEIS section 1.7.2.4 and section 3.2.2). The use and effectiveness of Wisconsin's Forestry Best Management Practices for Water Quality across all ownerships in Wisconsin, including the National Forest, have been monitored by interagency teams; the field evaluations indicated that ninety-nine percent of the time no adverse impacts to water quality occurred when Best Management Practices were applied correctly where needed. Based on this, I am confident that water resources will be protected during harvest treatments.

National Historic Preservation Act

A number of cultural and historical sites occur within the Northwest Sands area. Buffers will be implemented to eliminate the risk of direct or indirect impacts. Forest Service timber-sale contracts contain enforceable measures for protecting any undiscovered cultural resource that might be encountered during sale operations. All sites will be protected until evaluation is completed. Nominations for listing in the National Register of Historic Places to the State Historic Preservation Office will be made upon completion of evaluations.

The State Historical Preservation Officer has been consulted, and the provisions of 36 CFR part 800 are being complied with. The Forest Service has completed the Section 106 review for all timber harvest related activities displayed in the NW Sands FEIS. I have determined, consistent

with the Forest Service direction on cultural resources, that there will be no significant effects on cultural resources.

Executive Orders

Executive Order 11990

Executive Order 11990 requires Federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the destruction or modification of wetlands. There are a total of approximately 210 acres of wetland within the Northwest Sands project area, not including small isolated wetlands. Wetlands will be protected in the project area through adherence to Forest Plan standards and Guidelines and Best Management Practices for water quality (Appendix D).

Executive Order 12898

Executive Order 12898 directs Federal agencies to identify and address the issue of environmental justice (i.e., human health and environmental effects of agency programs that disproportionately impact minority and low-income populations). I determined that the Northwest Sands Project will not have a disproportionate effect on minority or low income communities, based on the Environmental Justice analysis conducted (NW Sands FEIS, section 1.7.2.5).

Federal and State Permits

No Federal and State permits are necessary to implement the proposed activities.

APPEAL RIGHTS

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. A written Notice of Appeal must be submitted within 45 days after the date the notice is published in the Daily Press, Ashland WI. The publication date in the newspaper of record is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other means. Submit the Notice of Appeal to:

Jeanne Higgins, Appeal Deciding Officer
ATTN: Appeals & Litigation
USDA Forest Service – Eastern Region
626 E. Wisconsin Ave.
Milwaukee, WI 53202

Facsimile number: (414) 944-3963
e-mail: appeals-eastern-regional-office@fs.fed.us

Appeals must meet the content requirements of 36 CFR 215.14. At a minimum, your Notice of Appeal must include:

- Your name, address, and if possible, telephone number
- Signature or other verification of authorship (i.e. scanned signature for e-mail)
- Identification of lead appellant if multiple names are listed on the appeal
- The name of the project being appealed, the name and title of the responsible official (see below), and the date of the decision.
- A statement that your document is an appeal filed according to 36 CFR 215

Normal business hours (for hand-delivered appeals) are 7:30 a.m. - 4:00 p.m., Monday-Friday, excluding holidays. Electronic appeals should be formatted in TXT, RTF, DOC, PDF or other Microsoft Office-compatible formats.

Contact Person

The NW Sands FEIS and supporting documents are available for public review at the Chequamegon-Nicolet National Forest office, Washburn, WI and on the Forest website at http://www.fs.fed.us/r9/cnnf/natres/eis/wash/NW_Sands/index.html. For further information on this decision, contact Jennifer Maziasz, NEPA Coordinator (715) 373-2667.

IMPLEMENTATION

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

This project will be implemented in accordance with Forest Service Manual (FSM) and Handbook (FSH) direction for Timber Sale Project Implementation in FSM 2431.3 and FSH 2409.24. This direction provides a bridge between project planning and implementation and will ensure execution of the actions, environmental standards, and mitigations approved by this decision, and compliance and other laws.



Spring Rosales
Washburn Ranger District Ranger
Chequamegon-Nicolet National Forest

10/16/2009
Date

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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