

USDA-FOREST SERVICE

FS-2500-8 (7/00)

Date of Report: 05/09/2006

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 1. Funding request for estimated WFSU-SULT funds
☐ 2. Accomplishment Report
☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible emergency rehabilitation measures)
☐ 2. Interim Report
☐ Updating the initial funding request based on more accurate site data or design analysis
☐ Status of accomplishments to date
☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Hughes Lake

B. Fire Number: mi-hmf-060082

C. State: Michigan

D. County: Oscoda

E. Region: 09

F. Forest: Huron- Manistee National Forests

G. District: Mio 05

H. Date Fire Started: 04/30/2006

I. Date Fire Contained: 5/5/2006

J. Suppression Cost: \$850,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline flipped (miles): 18 miles
2. Fireline seeded (miles): 3.5
3. Other (identify): 10 miles of brining. Note: Roads draining to Big Creek and Hughes Lake

are being treated to prevent erosion from first rain. Because of the excessively well drained sands of the area, the major source of sediment is from road runoff. The heavily travel roads are powdery and potentially the greatest source of sediment from fire activities.

L. Watershed Number: 040700070740, Au Sable River at Mio Pond

M. Total Acres Burned: 5950.5817 (New calculated the burned area)

NFS Acres (5283406) Other Federal () State () Private (53444)

N. Vegetation Types: 62 % Jack Pine, 20 % Red Pine, 10% Riparian, 8% mixed hardwoods

O. Dominant Soils: Typic Udipsamments (83%), Argic Udipsamments Lamellic Udipsomments (6%), Typic Haplosaprists (4%), Psammentic Hapludalfs (3%), others (4%).

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As a direct result of the Hughes Lake Fire, breeding habitat for approximately 54 pairs of Kirtland's warblers was destroyed within the three occupied areas. This habitat is lost and cannot be immediately restored because Kirtland's warblers nest in jack pine between 8 and 16 years old. The Treasure Map and Wigwam Warbler

areas (520 acres) were relatively young plantations and from past experience, natural regeneration of the jack pine will be spotty and not adequate to meet the KWEH needs.

Jack pine is considered the consummate fire species, requiring fire to open cones and prepare a mineral seedbed in order to regenerate naturally. Critical factors affecting the success of regeneration of jack pine following a fire are number and viability of seed, and exposure of mineral soil by reduction of the duff layer. Jack pine under optimum conditions can produce cones as early as three years of age, but viability of the seed is typically low until 15 years of age. Intense heat can also reduce viability of the seed. In addition, cone production is lower in densely stocked stands such as these. Therefore, while the receptive seedbed may be adequate, it is questionable whether or not adequate viable seed is present at the rates required. Again, jack pine in the occupied site within the burned area will not regenerate sufficiently to provide adequate habitat for Kirtland Warblers.

Because of the concern about how to regenerate the burned jack pine stands, some team members examined the planted and seeded areas and the naturally regenerated areas of jack pine within the No Pablo Fire of 2000. The No Pablo Fire is a few miles due east of the Hughes Lake Fire. On the No Pablo Fire, areas that were planted and seeded where at a sufficient density for Kirtland’s Warbler nesting habitat. The natural regenerated jack pine areas within the No Pablo Fire were smaller with very sporadic densities. Much of the naturally regenerated area does not meet jack pine stand densities sufficient for Kirtland’s Warbler habitat.

Threats to Forest Health from

Non-native Invasive Plants:

Several invasive plant species listed on Michigan’s state noxious weed list and the Forests’ Non-native Invasive Plant Species list are known to occur adjacent to newly exposed soils within burned areas or adjacent to fire suppression lines on the Hughes Lake Fire. The particular species that have a high probability of immediately invading the burned areas and fire suppression lines within the fire perimeter are:

- Spotted knapweed (*Centurea beibersteinii*)
- Smooth brome (*Bromus inermis*)
- Canada thistle (*Cirsium arvense*)
- Bull thistle (*Cirsium vulgare*)
- Orchard grass (*Dactylus glomerata*)
- White sweet clover (*Melilotus officinalis*)

Portions of roadsides and trails, old timber sale landings, and other disturbed areas within the Hughes Lake Fire, will serve as sources of invasive plant seed or rhizomes because they contain one or more of the above-listed plants and are now adjacent to mineral soil exposed by the fire. Reconnaissance is needed to determine which disturbed areas with the high-priority NNIS listed above are directly adjacent to areas that are highly susceptible to invasive because of fire disturbance. All of the plant species listed above have exhibited the ability to respond to disturbance by colonizing burned areas. In addition, spotted knapweed infestations continue expansion by exuding a chemical from their roots that kills neighboring plants.

If burned areas and fire suppression lines become infested with NNIS, the dry, sandy, nutrient-poor habitats that constitute 90 % of the habitat in the Hughes Lake fire areas listed above have the potential to become highly infested with NNIS. The Forests’ currently manage a significant portion of the areas surrounding the Hughes Lake Fire for prairies and barrens to support a wide variety of sensitive plant and animal species; such open areas are prone to NNIS invasion and having large NNIS infestations in the area threatens the Forests’ native biodiversity and Forest health. spotted knapweed is of particular concern in this regard.

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Additionally, fire suppression equipment brought in from other parts of the country or state has the potential to introduce non-native invasive plants that are not currently found on the Forests. If left undetected these introductions could expand and create additional degradation of plant communities on the Forests.

▲ Threats to Soils and Watershed from Unmanaged Recreation:

The burn severity estimate for the fire was 15% high, 75% moderate, and 10% low severity. Sampling in all severity types and found the duff layer to be intact in most areas. These areas had a moderate infiltration rate which is characteristic of this area. The drying trend prior to the fire resulted in only the very surface of the duff drying out. The fire left most of the O layer intact, consuming mostly last-year's leaf and litter. After passage of the flame front, most burning was limited to stumps, snags, and punk logs; only minor areas of the burn experienced a smoldering fire in duff; which consumed very small areas of the duff. The concern created by wildfire in an area with ORV trails is that it creates opportunities for ORVs to leave the designated trails. Multiple trips over the same location on an unauthorized trail would create bare soil and erosion. The fire reduces or eliminates vegetation making it much more "inviting" to leave the trail. The burn area is in an ORV use recreation area. There are ORV trails and an ORV campground (Meadows) within the burn area. The emergency cause by the fire is because of the burning of the vegetation much of the area is now accessible to ORV use. This has the potential to create erosion and reduce the amount of natural regeneration in the burn areas. The Jack pine and wetland areas within the burned area are of primary concern. Much of the jack pine is in Kirtland's Warbler habitat. Jack Pine stand characteristic in the area are scrubby, densely forested stands which by their nature are deterrents to ORV use when they are alive. The fire has created vast areas of jack pine mortality, which will not be a deterrent to ORV use. There are wetlands/riparian areas that are adjacent to Meadows Campground and are now easily assessable by ORVs. The burned over riparian vegetation will re-sprout, but for a few years the wetland/riparian areas will highly visible and likely to attract unmanaged ORV use. Although signing works to some degree to discourage unmanaged ORV use, conditions on the Forests have historically required patrolling to achieve meaningful levels of compliance.

▲ Threats to Cultural Resources:

There are fourteen cultural resource sites within the burned area. Field reconnaissance relocated (~~relocated or located?~~) nine properties, one new site was discovered and the four remaining sites were either low priority or not found. No heritage properties were encountered. All sites, with one exception, are located on highly permeable sandy soils and level ground. The site containing The Hughes Farm (F.S. 09040500146) and cemetery (civil war veteran's grave site) are situated ~~lies on~~ hilly terrain where greater potential for erosion damage exists. All sites have been made more visible due to loss of vegetative cover.

B. ~~B.~~ Emergency Treatment Objectives:

- Prevent the loss of life and risk to human health and safety.
- Reduce the risk to loss of property.
- Reduce the risk to TE&S species.
- Reduce risk of the spread of noxious weeds.
- Reduce risk of unmanaged recreation to ETS habitat and watershed health.
- Reduce risk of degradation of cultural resource sites.

~~Cultural Resources: Treatment objectives are to reduce damage or degradation of cultural resource sites that are more visible as a result of the fire.~~

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~~Site 09-04-05-0041, the Tyrrell Post Office and homestead, lies in the Meadows Campground. Most of the site's features were burned over. Fire intensity was low and no control lines affected the property. Campground rehabilitation and repair proposals, if any, need to be coordinated through the Huron National Forest Shared Services Archaeologist. The site should also be monitored closely because of its increased visibility.~~

~~Site 09-04-05-0257, a pre-contact Native American camp, also lies in the Meadows Campground. Very little of the site was burned over. Close monitoring and coordination of rehabilitation work also need to be accomplished at this location.~~

~~monitoring by heritage personnel to check for damage from vandalism and/or erosion.~~

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land 90 % Channel na % Roads 80 % Other 90 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	95	100
Channel	na	na	na
Roads	90	95	100
Other	90	90	100

E. Cost of No-Action (Including Loss): 58,275,000

F. Cost of Selected Alternative (Including Loss): 11,465,325

G. Skills Represented on Burned-Area Survey Team:

The BAER assessment team was Alix Cleveland (botany), Karen lee (GIS), Phil Huber (ETS Wildlife), Joe Gates (soils), Quent McNichols (Silviculture), John Davis (Archaeology), Dwight Devereaux (recreation) and Anna Jaramillo (hydrologist BAER Trainee), BAER Advisors Andy McNichols (reforestation), Greg Schmidt (botany), and Russ Synder (Archaeology)

☐ Hydrology ☒ Soils ☐ Geology ☐ Range ☐
☒ Forestry ☒ Wildlife ☐ Fire Mgmt. ☐ Engineering ☐
☐ Contracting ☒ Ecology ☒ Botany ☒ Archaeology ☐
☒ Fisheries ☐ Research ☐ Landscape Arch ☒ GIS

Team Leader: Wm. Patrick Fowler, Ph.D.

Email: wfowler@fs.fed.us Phone: 231-775-5023 x8732 FAX: 231-775-5551

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H. Treatment Narrative:

The following are proposed emergency treatments for the Hughes Lake Fire. Treatments are based on BAER objectives, team recommendation, team discussion, and line officer input utilizing known effective treatments for this area. Only treatments with high probability of success are proposed.

All cost estimates used Davis Bacon wage rates and consider contracting cost in developing estimates.

Structures:

Threats to Public Health and Safety:

Roads and trails – The objective is to provide for protection and safety from burned or weakened trees that probably would fall down within a year. Treatment: ASAP remove hazard trees on 15 miles of road and 3 miles of motorized trails within the burned area.

Lost sanitary structure – The objective is to provide for public health with adequate sanitary facilities at the motorized trail area and campground. Treatment: ASAP install one CXT toilet (pre-fab, requiring 1-day installation) in Meadows campground.

Land Treatments:

Threats to T&E Habitat – To mitigate the lost occupied Kirtland Warbler's habitat, 520 acres will be planted to recover Kirtland's Warbler nesting habitat that will be occupiable between 2012 and 2020. The team requests funding for the total cost of planting the 520 acres of occupiable habitat lost in the fire.

Threats to Forest Health from Non-native Invasive Plants: Do reconnaissance for locations where spotted knapweed, smooth brome, canada thistle, bull thistle, orchard grass, and white sweet clover infestations are located next to burned areas with exposed mineral soils. Treat infestations with high likelihood of expansion into burned areas to remove this year's seed source (hand-pulling, clipping, herbicide use in administrative areas). Seed burned areas adjacent to sites known to currently be infested with invasive plants. Seed portions of fire suppression line not seeded in post-suppression rehab. Monitor as described in the Monitoring Narrative section of this report.

Threats to Cultural Resources: Stabilize the Civil War Veteran's cemetery site by seeding and mulching and removal of hazard trees that may fall and desecrate the site. An archeologist is to be present for any rehabilitation work at the site within Meadows campground. Monitor all sites for a year following the burn.

Soils and Watershed

Channel Treatments: None

Roads and Trail Treatments:

Threats to Soils and Watershed from Unmanaged Recreation:

Structures: ASAP install one handicap accessible sweet smelling toilet in the Meadows campground. Add additional signs within the burn area reminding ORVs users to stay on designated trails. Patrol of the burned areas during high use recreation periods to keep ORV on designated trails. Place approximately 35 post and pole barriers, some gated, on right of ways and dead end Forest Service roads within the burned area to keep off road vehicles out of the wetlands and Kirtland's Warbler habitat.

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I. Monitoring Narrative;

Land Treatments:

Threats to T&E Habitat: Monitor to ensure KW Recovery Plan Standards are achieved through presence/absence and density surveys; monitoring to occur in 2007 and 2008.

Threats to Forest Health from Non-native Invasive Species:

Monitor Hughes Lake fire suppression staging areas, drop points, and roadsides for new NNIS that may have been introduced from non-local equipment through presence/absence surveys; monitoring is to occur during the summer and late summer of 2006 and during the summer and late summer of 2007. Monitor treated areas for effectiveness of treatments through presence/absence surveys; monitoring to occur during the spring and summer of 2007. Monitor dozer/plow lines for effectiveness of seeding and new occurrences of NNIS though presence/absence surveys; monitoring to occur during the spring and summer of 2007.

Threats to Cultural Resources: Monitor [9] sites within the burned area made more visible for damage from public interest, for one year through site visits.

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Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

Line Items	Units	Unit Cost	# of Units	WFSU SULT \$	Other \$	# of units	Fed \$	# of Units	Non Fed \$	Total \$
A. Land Treatments										
KW Reforestation	ac	500	520	\$260,000	\$0		\$0		\$0	\$260,000
Preventative seeding for NNIS control	ac	128	75	\$9,600	\$0		\$0		\$0	\$9,600
Detect and treat NNIS sources	ac	300	30	\$9,000			\$0		\$0	\$9,000
Cultural Resources seeding , mulching	sites	200	1	\$200			\$0		\$0	\$200
Subtotal Land Treatments				\$278,600	\$0		\$0		\$0	\$278,600
B. Channel Treatments										
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treat.				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
Heavy duty Gates	ea	1000	6	\$6,000	\$0		\$0		\$0	\$6,000
Barrier material, labor	ft	7.79	2500	\$19,475	\$0		\$0		\$0	\$19,475
Regulatory and directional signs	ea	150	22	\$3,300			\$0		\$0	\$3,300
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$28,775	\$0		\$0		\$0	\$28,775
D. Structures										
CXT Toilet	ea	20,000	1	\$20,000	\$0		\$0		\$0	\$20,000
Hazard tree removal along roads and trails	mi	2000	18	\$36,000	\$0		\$0		\$0	\$36,000
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$56,000	\$0		\$0		\$0	\$56,000
E. BAER Evaluation	days	2000	8		22,500					
				\$0	\$0		\$0		\$0	\$0
ORV Patrol	days	250	90	\$22,500	\$0		\$0		\$0	\$22,500
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$22,500	\$0		\$0		\$0	\$22,500
F. Monitoring										
Cultural resources	days	250	10	\$2,500	\$0		\$0		\$0	\$2,500
Noxious weeds	days	250	30	\$7,500	\$0		\$0		\$0	\$7,500
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$10,000	\$0		\$0		\$0	\$10,000
G. Totals				\$395,875	\$0		\$0		\$0	\$395,875

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PART VII - APPROVALS

1. /s/ Leanne M. Marten 5/9/2006
Forest Supervisor (signature) Date

2. /s/ John Phipps (for) 5/10/2006
Regional Forester (signature) Date

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