

Date of Report: 5/14/2007

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

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

**B. Type of Action**

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization 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:** Baraga Bump                      **B. Fire Number:** MI-OTF-000002  
**C. State:** Michigan                              **D. County:** Baraga  
**E. Region:** 9                                      **F. Forest:** Ottawa  
**G. District:** Kenton                              **H. Fire Incident Job Code:** P9DEP3  
**I. Date Fire Started:** 4/29/2007              **J. Date Fire Contained:** 5/4/2007  
**K. Suppression Cost:** \$ 500,000  
**L. Fire Suppression Damages Repaired with Suppression Funds**  
    1. Fireline waterbarred (miles): unknown at this time  
    2. Fireline seeded (miles): unknown at this time  
    3. Other (identify): unknown at this time  
**M. Watershed Number:** 040201040105 (040201040110)  
**N. Total Acres Burned:**  
    [374 ] NFS Acres    [ ] Other Federal    [598 ] State              [155 ] Private  
**O. Vegetation Types:** On LTA 15 (the gently rolling uplands) forest cover is primarily jackpine in various size classes but with seedlings and saplings predominating. Some stands are

less than fully stocked creating scattered grassy openings and savannahs. Within LTA 20 (the river valley) and the edges of LTA 15 are areas of trembling aspen, paper birch, red maple, white/black spruce and balsam fir. Scattered individuals and small groups of white pine, red pine, and red oak also occur throughout.

- P. Dominant Soils:** The majority of the burned area, and the most severe burn intensities falls within LTA 15 which is a nearly level, dry, sandy lake plain. Stabilized dune features are present throughout and slopes are generally less than 8 percent. Soils are coarse textured sand, deep, and excessively drained. Percolation rates are rapid and natural fertility is low.

A minor part of the burn area is located in LTA 20, which consists of very steep, unstable river valleys. These valleys contain evidence of landslides and other examples of downslope soil movement and erosion. Slopes are commonly 30 to 70 percent. Soils are quite variable depending on the parent material the river valley cuts through. In the burn area they are primarily coarse textured stratified sands and silts. Valley bottoms are stratified sandy and silty alluvium.

- Q. Geologic Types:** Bedrock Geology is buried by hundreds of feet of glacial till and outwash. It is primarily underlain by the Pre-Cambrian Era, Keweenaw System, Upper Keweenaw Series, Jacobsville Sandstone Unit consisting of interbedded pale and reddish colored sandstone. It is broken in places by faults and some volcanic intrusions and dikes.

**R. Miles of Stream Channels by Order or Class:**

1<sup>st</sup> order – 0.4 miles

4th order – 2.4 miles (Sturgeon River WSR Study segment)

**S. Transportation System**

**Trails:** 0.8 miles (ATV trails which are also roads closed to highway vehicle)

**Trails:** 0.4 miles (snowmobile Trails)

**Trails:** 0.5 miles (North Country Trail)

**Total Trails:** 1.7 miles

**Roads:** 1.3 miles (0.5 miles managed open to all vehicles and 0.8 miles closed to highway vehicles except ATVs)

**Roads:** 1.1 miles (Unauthorized roads – some of which travel along the pipeline)

**Total Roads:** 2.4 miles

**State of Michigan Roads within burned area:** 2.9 miles

**State of Michigan Trails within burned area:** 1.4 miles (North Country Trail)

1.5 miles (State ORV Trail)

**Total State Trails:** 2.9 miles

**PART III - WATERSHED CONDITION**

**A. Burn Severity (acres):** 1127 (low)      unknown (moderate)      unknown (high)

**B. Water-Repellent Soil (acres):** 0

**C. Soil Erosion Hazard Rating (acres): 1127 (low) 0 (moderate) 0 (high)**

**D. Erosion Potential: 0 tons/acre**

**E. Sediment Potential: 0 cubic yards / square mile**

**PART IV - HYDROLOGIC DESIGN FACTORS**

**A. Estimated Vegetative Recovery Period, (years): 1**

**B. Design Chance of Success, (percent): NA for proposed treatments**

**C. Equivalent Design Recurrence Interval, (years): NA for proposed treatments**

**D. Design Storm Duration, (hours): NA for proposed treatments**

**E. Design Storm Magnitude, (inches): NA for proposed treatments**

**F. Design Flow, (cubic feet / second/ square mile): NA for proposed treatments**

**G. Estimated Reduction in Infiltration, (percent): NA for proposed treatments**

**H. Adjusted Design Flow, (cfs per square mile): NA for proposed treatments**

## **PART V - SUMMARY OF ANALYSIS**

### **A. Describe Critical Values/Resources and Threats (narrative):**

The Baraga Bump Fire burned 1127 acres on the Kenton Ranger District of the Ottawa National Forest, The Copper Country State Forest, and Private land in Baraga County, Michigan from 4/29/07 to 5/6/07.

The fire burned through mostly jackpine and aspen level, sandy mixed forested and savannah uplands and in mixed conifer and hardwoods within a very steeply sloped river valley. The fire resulted in a burn severity of low throughout the burn area.

#### *Wild and Scenic Rivers*

Sturgeon Wild and Scenic River (WSR) Congressionally authorized Study segment is located within the burned area and forms the burned area boundary. Sturgeon River WSR designated Wild segment is located immediately downstream from burned area. The Study segment's river value's at risk are water quality and potential Outstandingly Remarkable Values (ORVs) which may include fish, geology, wildlife, botany, scenery, recreation, and heritage/cultural resources, however, ORVs have not been established for the Study River at this time. The Wild segment's river values at risk include water quality, and the fish, and geology ORVs. Further analysis of the river values are incorporated into the specialist summaries below.

#### *Soils and Water Quality*

Potential soil related values at risk are a reduction in soil productivity and increase in erosion potentials caused by the volatilization of surface organic matter and development of soil hydrophobicity (water repellency). Organic matter is important in nutrient storage and moisture retention. Hydrophobicity would increase surface runoff and decrease moisture infiltration. Increased erosion could contribute to sedimentation into the Sturgeon WSR Study and Wild River segments. This sedimentation could impair the water quality and geology river values.

Sampling for these soil conditions at numerous areas of the burn with the highest fire intensity indicated no significant reduction in soil surface organic matter and no evidence of soil hydrophobicity. Professional judgment of the BAER team Soil Scientist determined that no emergency soil mitigation treatments were needed to mitigate values at risk to water quality and geology associated with the Sturgeon WSR Study and Wild River segments.

Professional judgment of the BAER team Hydrologist determined that no emergency treatments were needed to mitigate water quality of the Sturgeon WSR Study and Wild segments due to the low fire severity and lack of hydrophobic soils. Any risks to the WSR segments result from fire suppression activities, which are mitigated through fire suppression rehabilitation and not through BAER.

#### *Botany*

Ecosystem Integrity/native plant diversity is threatened by the spread of invasive plant species due to the construction of dozer lines with off-site equipment that may result in the spread of invasive species through sensitive burned areas. Spotted knapweed, a non-native invasive species, is located nearby and can readily spread into disturbed areas. Unauthorized ATV use on National Forest lands, either cross-country or on unauthorized roads/routes or dozer lines, can spread spotted knapweed as well as the authorized cross-country use on State of Michigan lands. The boundary between the National Forest and State is not easily discernable on the ground and ATV operators may not realize when they crossing onto the National Forest where motorized use is more restrictive than State lands.

There are no Threatened, Endangered, or Sensitive plant species known in the area of the Baraga Bump fire.

Professional judgment of the Baer team Botanist determined that further detection review and emergency treatments are warranted and are further described below.

#### *Wildlife*

- *Aquatic Species and Habitats*- This includes listed mussels, insects and other species that depend on aquatic resources (i.e. loons and eagles) as well as the fish ORV for the Sturgeon WSR designated Wild segment and the potential fish ORV for the Study segment. These species would be at risk from the loss, impairment, or further degradation of water quality in the Sturgeon River or its tributaries. Siltation, run-off, and flow impairment in aquatic habitats are the limiting factors for determining whether an emergency situation exists or not for these species.
- *Kirtland's Warbler*- This species is a federally listed as endangered and is a jack pine obligate. Kirtland's warblers depend on a mosaic of jack pine stands in various densities and ages. This species would be at risk from the loss, impairment, or further degradation of this habitat mosaic. Jack pine regeneration in sufficient quantities and densities is the limiting factor for determining whether an emergency situation exists or not for this species.

Professional judgment of the BAER team Wildlife Biologist determined that further detection review is warranted and is described below. Other emergency treatments are not warranted at this time since the survey found that with the timing of the fire and fire severity (generally low) of the burn area, unacceptable loss to aquatic and Kirtland's warbler habitat resources probably did not occur. Kirtland's warbler habitat will continue to be suitable and is not expected to suffer degradation over time. An emergency situation involving listed species resources was not created by the fire event.

The risks to the wildlife values generally result from fire suppression activities, which are mitigated through fire suppression rehabilitation and not through BAER. Additional recommendations for the future management of the area are described in the wildlife specialist report.

#### *Heritage Resources*

The Baraga Plains is a rich cultural and historical environment which includes the historic Lac Vieux Desert – L'Anse Trail which bisects the burned areas. Native Americans living at Lac Vieux Desert and Keweenaw Bay used the trail for several hundred years as a mode of overland transportation between these two Ojibwe villages. The trail was also used extensively for both fur trade and missionary activities in the interior of the Lake Superior region. A combination of cultural and historic logging and homesteads are also within the burned area. These resources are at risk from erosion that could expose buried heritage resources.

Professional judgment of the BAER team Archeologist determined there is no known emergency to heritage resources on Forest Service lands within the Baraga Bump Fire from potential watershed erosion or soil loss due to low burn severity.

The primary concern regarding heritage resources as a result of the Baraga Bump Fire is the suppression related damage caused by construction of dozer lines and subsequent

rehabilitation of these lines, which are mitigated through the fire suppression rehabilitation phase and not through BAER.

### *Recreation*

Human life and natural resource impacts are the values at risk associated with recreation activities within the burned area. There are four areas of concern related to the values at risk:

- Baraga Plains ORV Trail – This trail is located on State of Michigan lands and the two direct effects of the burn to the trail include the crossing of the trail with constructed firelines, hazard trees along the trail. The intersection of firelines and trails would attract the OHV's and hasten the movement of the thin soil layer on any firelines, or the area adjacent to the constructed firelines. Secondly, hazard trees along the trail within the burn area that could potentially fall on the trail creating an unseen hazard, or fall directly on a user of the trail.
- North Country National Scenic Trail – This trail is located both on National Forest lands and State of Michigan lands and includes a spur trail to the Oren Krumm Shelter. The concern at the present time is informing the long distance through hikers, as well as any day hikers of the danger of falling snags and trees along the trail route within the fire area. The second area of concern is to ensure that the trail users will be able to navigate through the burn area as easily as possible by replacing the confidence markers that were along the trail. This is especially important now since the landscape has a similar look, which can mask the actual location of the trail.
- Roads open to the public on National Forest and State of Michigan lands - The immediate concern for travel routes is public safety within the burn area. Because some areas of the fire received fire severity to a degree that weaken many trees, the chance for snags and trees along the open roads to fall have increased. The immediate threat would be a hazard to the driving public along these open roads.
- National Travel Management Rule (TMR) – In compliance with the TMR, specific designations have been assigned to travel routes on National Forest lands within the burned area as displayed on the Motorized Vehicle Use Map (MVUM). This type of designation is only for national forest system lands, and does not necessarily correlate with designations for state forest roads and trails. The State lands are also open to off-road vehicle use. There is a concern that motorized vehicles may utilize fire lines as new travel vectors, particularly since the boundary between the Federal and State lands is not readily discernable on the ground. A natural gas pipeline traverses the burned area for about 1.2 miles and is not part of roads and trails open to motorized travel on the Ottawa National Forest. This pipeline is also a likely travel vector for motorized vehicles. These travel vectors can also spread invasive species as described in the botany section.

The WSR Study segment's potential visual a recreation ORVs were not impaired as a result of the fire.

Professional judgment of the BAER team Recreation Specialist determined that monitoring and emergency treatments are warranted and are further described below.

## **B. Emergency Treatment Objectives (narrative):**

### *Botany*

Prevent the establishment of invasive species into previously unoccupied sites within the burned area.

*Wildlife*

Insure jack pine regeneration response is adequate for federally listed Kirtland's warbler habitat.

*Protection/Safety*

Inform the public of potential hazards of entering the burned area and remove the safety hazards along designated trails/roads. Prevent unintentional unauthorized ATV and off-road vehicle use on National Forest lands.

**C. Probability of Completing Treatment Prior to Damaging Storm or Event:**

**Land 90% Channel NA% Roads/Trails NA% Protection/Safety 90%**

**D. Probability of Treatment Success**

	Years after Treatment		
	1	3	5
<b>Land</b>	90	90	90
<b>Channel</b>	NA	NA	NA
<b>Roads/Trails</b>	NA	NA	NA
<b>Protection/Safety</b>	90	90	90

**E. Cost of No-Action (Including Loss): 540,000**

**F. Cost of Selected Alternative (Including Loss): 67,440**

**G. Skills Represented on Burned-Area Survey Team:**

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

**Team Leader:** Darla Lenz

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**H. Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

**Land Treatments:**

Detect and treat invasive species with herbicide if it is located in the burned area on both NFS lands and state of Michigan lands. Treating on adjacent state lands will have a benefit to NFS lands. An agreement will be developed with the state.

**Channel Treatments:** None proposed

**Roads and Trail Treatments:** None proposed

**Protection/Safety Treatments:**

Hazard trees will be removed along the designated State ORV route and other public travel roads. The removal of approximately 145 trees is needed. This work will be done in spring 2007.

Approximately 15 cautionary signs are recommended along open roads as the public enters into the burned area are needed to inform them of the possible danger of falling trees and other hazards associated with the fire. This would occur on both National Forest and State of Michigan lands.

Approximately 15 closure signs are recommended at newly created access points within the fire. It is of great importance that these new travel vectors be signed as closed until such time they are rehabilitation sufficiently to prohibit travel. This closure is also need for the natural gas pipeline that traverses the burned area, and is not part of roads and trails open to motorized travel on the Ottawa National Forest. These closures are for two reasons, 1) to protect the public from hazards associated with the fire area, and 2) to protect the resource from further degradation until such time the rehabilitation can be completed. All signs will comply with the FS guidelines for size, placement, and materials.

The hazard tree removal and signing work is recommended for both NFS and state of Michigan lands as the public is traveling between state and NFS lands and boundaries are not well marked. There is a benefit to the Forest Service to do the work on state of Michigan lands as the public is accessing Forest Service lands from state lands. An agreement will be implemented with the state to do the work.

**I. Monitoring Narrative:**

**(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)**

***Botany***

Review the burned area for invasive species and treat as found with herbicide in order to prevent new establishment within the burned area. Detection review will occur for 5 days within the first summer following the fire.

***Wildlife***

Review the burned area for jack pine regeneration density and quantity for federally listed Kirtland's warbler habitat to determine if treatment is needed to insure that jack pine regeneration response is adequate. Review will occur one day annually for a three year period.



*Protection/Safety*

Monitor motor vehicle use to determine if use patterns warrant additional signing or other treatments. Monitoring will occur for 2 days within the first summer following the fire.

Part VI – Emergency Stabilization Treatments and Source of Funds						Interim #				
Line Items	Units	Unit Cost	# of Units	BAER \$	Other \$	# of units	Fed \$	# of Units	Non Fed \$	Total \$
<b>A. Land Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
Treat noxious weeds	gal	100	0.5	\$50	\$0		\$0	0.5	\$50	\$100
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$50	\$0		\$0		\$50	\$100
<b>B. Channel Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
<b>C. Road and Trails</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road &amp; Trails</i>				\$0	\$0		\$0		\$0	\$0
<b>D. Protection/Safety</b>										
Hazard tree removal	tree	50	70	\$3,500	\$0		\$0		\$0	\$3,500
Signing	sign	25	25	\$625	\$0		\$0	5	\$125	\$750
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$4,125	\$0		\$0		\$125	\$4,250
<b>E. BAER Evaluation</b>										
	day	250	16	---			\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				---	\$0		\$0		\$0	\$0
<b>F. Monitoring</b>										
	day	230	8	\$1,840	\$0		\$0		\$0	\$1,840
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$1,840	\$0		\$0		\$0	\$1,840
<b>G. Totals</b>				\$6,015	\$0		\$0		\$175	\$6,190
Previously approved										
Total for this request				\$6,200						

**PART VII - APPROVALS**

1. /s/ Bob Brenner May,14, 2007  
for Jo Reyer  
Acting Forest Supervisor Date
  
2. /s/ Forrest L. Starkey (for) May 18, 2007  
Regional Forester (signature) Date