



## **JULY 4TH STORM RECOVERY NEWSLETTER**

### **August 25, 1999**

#### **Summary**

**On July 4th, a massive storm raked northeastern Minnesota with straight-line winds exceeding 90 miles per hour. In less than 30 minutes, the storm cut a swath through the Superior National Forest, causing a blowdown that impacted an estimated 477,000 acres of the National Forest. Most of the blowdown occurred within the boundaries of the Boundary Waters Canoe Area Wilderness (BWCAW). The Forest supported Cook, Lake and St. Louis counties with search and rescue operations; 20 air medical evacuations were conducted. Heavy rains caused flash flooding that resulted in damage to roads, trails, culverts and bridges outside the wilderness. The Chippewa National Forest experienced impacts and damage from the high winds and rain that aggravated already high water levels, especially on Cass and Winnibigoshish Lakes. The storm caused serious erosion to lakeshores, significant damage to shoreline stabilization projects, and erosion of private and federal lands in the Forest. Though most media attention focused on the BWCAW, this storm impacted the entire northeastern portion of the State of Minnesota and neighboring Canadian lands.**

#### **Chronology of Significant Events**

- July 4 Storm strikes NE Minnesota at mid-day; front reaches Ely, MN at noon. Superior NF initiates search and rescue operations.
- July 6 Search & rescue incident command set up through Minnesota Interagency Fire Center.
- July 14 Regional Forester Robert T. Jacobs authorizes use of chainsaws in the BWCAW, where use of non-mechanical equipment is deemed unsafe.
- July 19 Search and rescue operations end.
- July 20 Wilderness recovery incident command continues clean-up.
- July 27 National Wildland Fire Prevention Team begins work, facilitating evacuation plans and fire prevention education.
- July 28 President Clinton declares eight Minnesota counties as a disaster area.
- July 29 Wilderness recovery team clears all portages and 95% of campsites in wilderness.
- Aug. 13 Wilderness Recovery Incident Command Team demobilizes; continued recovery efforts released to Forest.
- Aug. 16 Fire Prevention Team concludes work and presents report.
- Aug. 23 Fire behavior/fuels management specialists begin survey of blowdown this week; North Central Forest Experiment Station begins initial research assessment.

## Highlights

- Estimated recovery costs for Chippewa National Forest - \$1,300,000. Most serious impacts caused by erosion associated with flash floods and wave action on lakes; an estimated 1,000 acres of blowdown.
- Estimated recovery costs for Superior National Forest - \$20,300,000. Federal Emergency Management Agency will reimburse 75% of estimated \$1,000,000 search and rescue costs.
- The blowdown impacted 477,000 acres of Superior National Forest, or 16% of the 3,000,000-acre forest. Three hundred and sixty-seven thousand acres of the blowdown is within the BWCAW. The storm left a 12-mile wide, 35-mile long swath, running from west to east. The most severely impacted area outside the wilderness is the Gunflint Trail Corridor.
- The BWCAW is open to the public. Since last month's storm, crews have cleared and opened 1,520 impacted campsites, and 551 portages in the popular wilderness area.

## SUPERIOR NATIONAL FOREST STORM RECOVERY

### BWCA Wilderness

Since the July 4th storm, all portages have been opened; and 95% of the campsites are open and usable. During the recovery phase, following search and rescue operations, crews cleared and opened 1,520 wilderness campsites and 551 portages. They also cleared 15 miles of wilderness trail, but the majority of trails within the blowdown area still have much work to accomplish before they are passable. Clearing will not begin on the long distance trails (specifically the Kekakabic and Border Route) until we have more information concerning the risk of wildfire and visitor/work crew safety since major portions of these trails are in areas of severe blowdown. Visitors interested in hiking should contact the Forest Service for current information before making plans.

Because of the extraordinary conditions in the blowdown area and resulting threat to the safety of workers, Regional Forester Robert Jacobs authorized the use of motorized and mechanical equipment to clean up portages and campsites. Crews employed chainsaws to some extent at approximately 50% of campsites and portages under very specific guidelines. Although portages are passable and campsites open, much work remains to clear them to Forest plan standards. Other work includes draining and repairing portage tread, righting rootwads where appropriate, clearing new latrine sites, and repairing latrines. Next year, storm weakened trees that blow down over the winter into portages and campsites will have to be cleared. Now that portages are passable and most campsites have been cleared, the use of chainsaws has been temporarily halted, pending the end of the high use season in the BWCAW. Chainsaw use will resume in mid-September, under the same conditions as previously approved - only when the use of non-motorized equipment would pose unsafe working conditions for crews.

Adjacent to campsites and portages, downed trees form jackstraw stacks more than 15 feet high in places. Campers should avoid entering or climbing on deadfall to prevent injury. Avoid pitching tents under leaning trees and do not linger in potentially dangerous areas. Use extreme caution in cutting small downed trees or remove branches. They may be under tension from other downed trees and will snap or jump back unexpectedly, if cut.

Forest Supervisor Jim Sanders imposed fire restrictions in storm-impacted portions of the BWCAW. Open campfires are permitted in restricted areas (primarily the areas of heaviest blowdown) from 6:00 p.m. to 12:00 a.m. (midnight) only. Open campfires continue to be prohibited at any other time. Gas and propane stoves are allowed.

The blowdown has created fuelloads totally different from standing forests. Despite recent rainfall, two days of typical late summer weather will dry fine fuels (i.e. leaves, pine needles, twigs). This will result in a wildfire that can ignite and spread up to four times faster than in standing forest and spot fires that will easily jump all but the largest lakes, and pose a serious risk to fire fighters and visitors.

### **Fuels Assessment**

The storm resulted in a massive blowdown ten to 12 miles wide and 35 miles long. This blowdown created an unbroken corridor of fuels, estimated at 80 to 120 tons per acre, which poses a serious threat of wildfire. Two teams of specialists will evaluate the fuel loads over the next two months, to provide an assessment of the fire risk created by the July 4th storm. The first team is scheduled to begin work the week of August 15. The team will provide a risk assessment of wildfire, fuel models, and develop alternatives for increased fire suppression and fuel treatment, to reduce wildfire risk.

### **Gunflint Corridor**

Outside the BWCAW, the storm had the most serious impact along the Upper Gunflint Trail Corridor of the Superior NF. This area is a narrow strip of land about two miles wide and 30 miles long, situated near the eastern end of the BWCAW. The corridor consists of intermingled private and public land; a winding, single lane dead-end road provides the only entrance and exit to the Gunflint Corridor. On any given day during the summer season (which is also the fire season) 3,000 to 4,000 people may be in the corridor at one of more than 600 homes, youth camps, resorts or campgrounds. The blowdown provides a direct, unbroken path for wildfire to the upper Gunflint. A large wildfire could cut off the sole escape route for people in the corridor. Current conditions make fire suppression extremely difficult and dangerous. Immediate action is needed to reduce heavy fuel loads in the Gunflint Corridor to protect life and property.

In response to this need for immediate action, the Council on Environmental Quality (CEQ), the federal agency that oversees compliance with the National Environmental Policy Act (NEPA), has approved alternative arrangements for NEPA compliance, until December 24, 1999, for proposed actions that will help reduce extremely high fuel loading in the Gunflint Trail Corridor. These arrangements will include public involvement, environmental analysis, appropriate documentation, on-site monitoring, and full NEPA compliance for longer term restoration and abatement actions.

Fuel reduction will be accomplished through a variety of means, including commercial timber sales and non-commercial actions such as prescribed burning, crushing, or chipping, after considering such factors as resource concerns, cost and timeliness. The alternative arrangements include analysis needed to provide access across Superior National Forest land for State, County and private landowners to undertake actions needed within the Gunflint Corridor to address public safety concerns. Proposed actions will be limited to the removal of trees that are already down, dead, broken or severely root-sprung except in the instances of worker safety. In addition, actions will not take place in Research Natural Areas (RNA's) or potential RNA's, and tree removal will be avoided in riparian areas unless recommended by Forest Service experts. Priority attention will be given to actions in high public use areas, such as those in close proximity to residences, lodges, access routes, campsites and other structures used by residents and visitors to the area. Any roads constructed as a result of fuel reduction activities will be obliterated at the completion of the project.

Public involvement will be a key factor in identifying and implementing projects. Regular updates will be provided to interested members of the public through mailings, meetings, tours, and posting on the Superior National Forest homepage ([www.fs.fed.us/r9/superior](http://www.fs.fed.us/r9/superior)) to keep people informed of planned activities and opportunities to participate. Watch for the first of many documents (information request

for comments, preliminary environmental analysis, map of proposed areas for treatment) to be posted on the homepage by August 31.

### **Timber Sale Contracts**

At least 11 sales in the Gunflint Corridor, containing more than 60 cutting units, sustained damage from the storm. Straight-line winds toppled trees in most of these units, making it impossible to identify cutting unit boundaries. About 220 acres on other areas of the Forest require new boundaries. Staff continue to assess damage.

### **Superior NF Recreation Sites Outside Wilderness**

All campgrounds and developed recreational facilities in the Forest have been cleared and are open to use, but some look very different in the wake of the storm. Six campgrounds and associated developed sites were severely damaged by the storm - four along the Gunflint Trail, one near Isabella, and one near Aurora.

Several trails were also severely impacted by the blowdown and some dispersed camping areas as well. Further work to be done includes cleaning up and restoring dispersed camping areas and developing vegetation management plans for severely damaged campgrounds. We will replace some facilities and signs damaged by the storm. Crews are now concentrating on clearing winter trails in anticipation of the winter recreation season. As of August 13, crews had cleared 75 of 110 miles of trails in the Gunflint Corridor.

### **Roads**

Superior National Forest roads received heavy damage from flash floods caused by heavy rain on July 4; downed trees obstructed many roads. Since the storm, all but one main Forest road has been repaired and cleared. Only the eastern section of the Cross River Road (FR166) remains closed, possibly through the fall of 2000, because of the washout of a major culvert at the crossing over Blind Temperance Creek. One hundred miles of local access roads have been cleared. Clearing local Forest access roads will take two years to complete.

### **Special Use Permits and Permittees**

Many Forest permittees (i.e. privately held resorts, roads, summer homes on national forest land) experienced damage, some extensive. The storm hit many resorts in the Gunflint Corridor especially hard. All permittees in the Gunflint summer home group were impacted by the storm, and about half of the Bearskin summer home group sustained damage. In the Kawishiwi District, special use permittees report damage and impacts from downed trees, and erosion caused by flash floods and wave action on lakes.

### **Facilities and Administrative Sites**

The Seagull Guard Station house, warehouse and radio received substantial damage from the storm. Winds destroyed two sensors on remote weather stations. Damage to buildings includes lost and damaged shingles, gutters and fascia. More serious damage included several holes in roofs and possible damage to roof trusses. In addition, a tree crushed the corner of the roof and wall of the warehouse. High winds and falling trees flattened the radio tower. The East Bearskin Guard Station received minor damage.

### **Watershed and Soils**

The Forest continues to assess the impacts of heavy rain and windthrow on watershed, fisheries habitat and soils. In the immediate future, surveys will be conducted on streams, to evaluate the impact of the massive loading of woody debris and organic materials and determine if removal is needed. Additional evaluation and mitigation at boat landings, portages and campsites may be required. Fire and forest management activities will be coordinated to reduce the loss of the forest floor (from burning or site

preparation) by modifying techniques and prioritizing areas of activity. Researchers will investigate the nutrient loss in soils caused by erosion, site preparation and burning, to indicate the long-term effects of the storm on soil quality.

### **Cultural Resources**

Preliminary surveys and inspections of archeological sites indicate that root throw from blown down trees caused the most impacts to known sites. These sites will be monitored. No damage to historic structures has been reported.

### **Finance**

Superior National Forest's storm recovery will cost an estimated 20 million dollars according to preliminary assessments and will take as much as six years to complete. Cost estimates will be refined as evaluation of storm impacts and damage continues.

### **Planning**

The process to update the forest management plans for the Superior and Chippewa National Forests has been delayed as a result of the storm. Open houses will be scheduled later this year. The July 4th storm changed some resources in both forests. These changes will have to be documented and incorporated into the planning documents.

## **CHIPPEWA NATIONAL FOREST STORM RECOVERY**

### **Fuel Treatment**

The July 4th storm affected about 1,000 acres of forest on the Walker and Deer River Ranger Districts. Salvage of portions of the blowdown is being considered to reduce fuel loads; scoping of issues is currently underway.

### **Shoreline Stabilization**

Shoreline damage from sustained record high water and strong wave action from the storm and subsequent storms is concentrated on Lake Winnibigoshish and Cass Lake. These lakes comprise part of the headwaters of the Mississippi River, an American Heritage River. Damage is occurring on undeveloped shoreline as well as in the following areas:

#### *West Winnie Summer Homes (Lake Winnibigoshish)*

Approximately 5,500 sandbags were temporarily placed on 600 feet of unstable shoreline during July 29 to August 3, 1999. The sandbags proved effective during two high windstorms on August 8 and 9. In addition, a temporary floating, off-shore wave break was constructed along 400 feet of shore. One hundred thousand dollars is needed for a 2,000-foot permanent stabilization structure to be constructed in the spring of 2000.

#### *South Highbanks Summer Homes (Lake Winnibigoshish)*

High water and wave action threatened a 4,429-foot erosion control structure, completed in 1992. An Army Corps of Engineers design to repair earlier ice damage needs amending, to repair sheet piling damaged from continued high water. Three hundred forty thousand dollars is needed to prevent additional erosion at the toe and behind the sheet piling. Without repairs this fall, costs will increase due to continued erosion and ice undermining the structure.

#### *Plughat Point Summer Homes (Lake Winnibigoshish)*

Wind-driven waves continue to erode the shoreline of three summer homes. This site requires stabilization as it is supersaturated and slumping into the lake.

#### *Star Island Summer Homes (Cass Lake)*

The Forest Service, Minnesota DNR, Army Corps of Engineers, Soil and Water Conservation Districts and local residents toured erosion-impacted sites on Tuesday, August 10, 1999. Emergency sandbagging or other measures will be performed in late August. An erosion control design is being completed by the Forest Service to treat 2,000 feet of shoreline.

#### *Norway Beach Recreation Area Campgrounds (Cass Lake)*

Emergency sandbagging and log revetment work are completed at Cass Lake Campground, where erosion threatens campsites. Work has not yet been done at Wanaki Campground to protect heritage sites. A permanent stabilization design is needed for shoreline restoration.

### **Road Restoration**

All Chippewa forest roads are cleared for at least one lane of traffic. Funding is needed to replace culverts and gravel on road surfaces lost during the storm.

The July 4 storm caused a section of the Linden Lake Road to slide into an adjacent wetland, isolating private landowners. Temporary repairs were completed to provide access. Restoration of the wetland and an analysis of alternative designs for the road need to be undertaken.

A hydraulic analysis at two bridges on Batson Lake needs to occur. The storm caused water to overtop the bridges, eroding the bridge approaches.

### **North Country National Scenic Trail Restoration**

Blowdown in the Walker/Boy River area blocked several portions of the trail. The Forest Service has cleared approximately 20 miles of the 68-mile North Country Trail. Another 26 miles of severe blowdown along the trail will be cleared by contract for \$30,000. Additional funds are needed to clear debris from the storm on other trails forestwide.

### **Facilities and Administrative Sites**

#### **Knutson Dam and Breakwater**

The Forest Service has asked the Army Corps of Engineers to evaluate the affect of continued high water on the condition of Knutson Dam. The breakwater has been damaged by high water and wave action. Improvements could cost as much as \$315,000 if extensive repair to Knutson Dam and the breakwater is needed.