

Fuels and Fire Behavior Advisory

Minnesota's Forests and Grasslands

Effective July 16 2021 Valid for 14 Days

Subject: Minnesota's Fire Environment Goes from Bad to Worse to Start the Second Half of the Year.

Discussion: The fire environment in Minnesota, degrading since late winter of 2020, shows new signs of worsening conditions as streams and lowlands have dried up across the state. Major rivers are running at a mere trickle of their normal flows.

After a series of rainfall events passed by the state, from the end of June through the beginning of July, the overall effect was conditions holding in place over southern MN yet northern MN (mostly missed by any precip over the first 14 days of July) continues to experience extremely dry conditions.

At the time of this writing a protracted hot and dry stretch is in store for Minnesota, as a heat dome extends from the Northern Rockies north into Canada and east across the Northern Plains to the Western Great Lakes. This comes on top of already extremely dry conditions putting Northern MN in high potential for catastrophic large fires.

Photo - Black River Near Loman MN Running almost completely dry.



Difference from normal conditions: Fire danger indices from the Canadian Forest Fire Danger Rating System (CFFDRS) and the National Fire Danger Rating System (NFDRS) have been setting new record maximums already this year. The second half of July will set even higher benchmarks.

To date (July 1st – 14th) the fire count from all MN agencies is 143. The ten-year average for the entire month of July is 43. At this pace and with the outlook for the rest of the month, 300 – 400 fires are likely.

Summer fire seasons tend to be sporadic and limited in scope in MN however some of the state's largest wildfires have occurred in mid to late summer under lesser conditions in years past.

Active fires burning in the Quetico Provincial Park just across the Canadian border will draw on resources as those fires approach the US side. Early indications are that these fires have the potential to burn together and become one of the largest fires in the greater Boundary Waters area in many years. The Pagami Creek Fire of 2011 grew to a size of 92,624 acres (most of that growth occurred in a one-day wind driven event) and conditions this year could result in fires of similar magnitude

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Concerns to Firefighters and the Public:

- Expect increasing ignitions from lightning in forest fuels. Human caused ignitions from fireworks and equipment will be common as grass fuels typical to human habitation are cured and receptive.
- Deep burning fires in duff layers of forest fuels and organics soils common to lowland grasses will require intensive mop up and monitoring to ensure line security.
- Water from the air (aircraft or rainfall) will do little other than slow the forward spread of fires.
- Control lines in heavy duff/organic fuels may need reinforcement due to the possibility for smoldering fires to rekindle and escape.
- Existing build up, hot and dry conditions, and an extended amount of summer remaining will bring a very high risk of large catastrophic fires to the state.
- Extreme fire behavior, common under record setting conditions, will occur where fires, fuels, and weather (namely wind) align to create the worst conditions.

Mitigation Measures:

- Staff resources adequately to deal with increased fire occurrence and advanced fire behavior.
- Consider indirect and extended attack when making tactical decisions related to line placement and type.
- Discuss options locally, like mineral soil breaks using heavy equipment or indirect attack, to mitigate the amount of effort needed to create high levels of line security.
- Mop up and monitor fire lines thoroughly, don't underestimate the potential for holdovers in duff and organic soils.
- Brief out of state resources on current and expected fire behavior and familiarize them to the local fire environment.
- Discuss the limitations and mitigations for the use of lookouts in heavy timber and flat terrain.

Area of Concern: Minnesota, statewide, forest and grassland fuels

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Build Up Index (BUI)

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