



Natural Hazards: Wildfires

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Saskatchewan Flood and Natural Hazard Risk Assessment - Workshop

¹Saskatchewan Research Council

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Introduction

- Fire has always been part of the natural forest environment
- Plant and animal species are adapted to survive fire or repopulate after fire
- Fire 'resets' forest ecosystems, stimulating new growth and reducing diseased vegetation
- Fire by itself is not a hazard, it becomes one when it threatens human values on the landscape (e.g. human life, infrastructure, valuable timber stands, water quality, etc.)

May



M. Johnston

August



M. Johnston

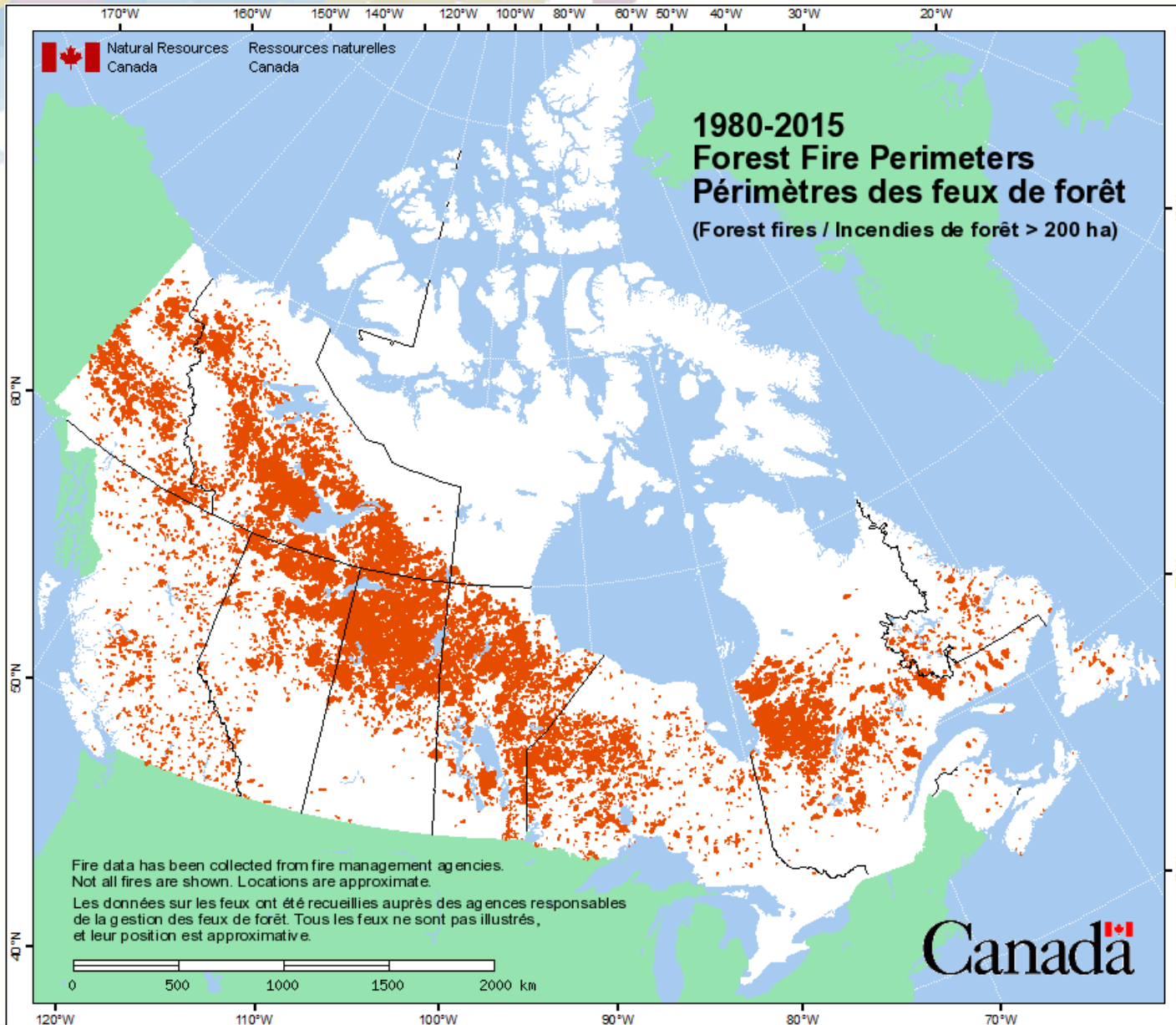
Define the hazard

- Saskatchewan has one of the highest rates of wildfire in the country
- On average, 50% of fires are human caused, but burn less than 10% of total area
- Average over 1990-2015:
 - Number of fires: 598 (min 302, max 1,266)
 - Area burned: 530,201 ha (min 3,885 ha, max 1,734,806 ha)
- 2010: 1,734,806 ha
- 2015: 1,721,912 ha
- Evacuations of northern communities
- Some loss of infrastructure
- Some loss of timber stands

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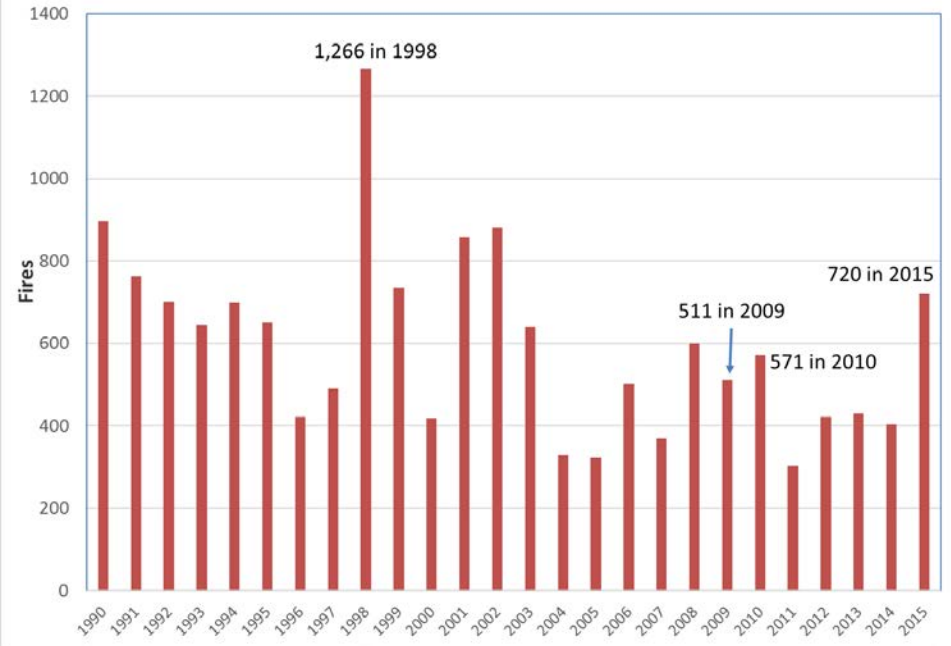
Fires in Canada, 1980 to 2015



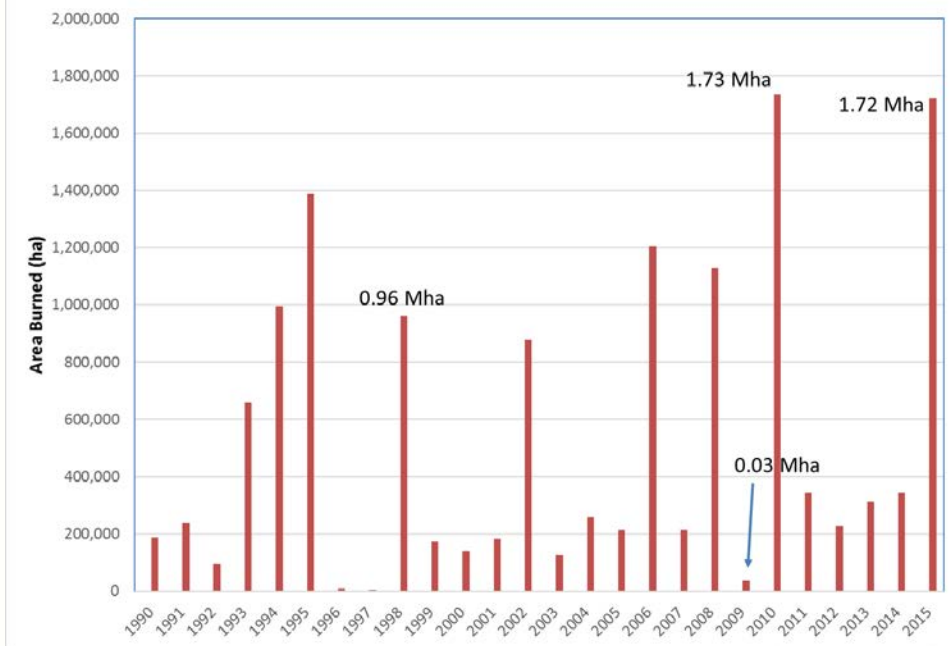
Source: Canadian National Fire Database, <http://cwfis.cfs.nrcan.gc.ca/ha/nfdb>

Historic exposure

Number of Fires in SK, 1990-2015



Area Burned in SK, 1990-2015



Source: Canadian National Fire Database, <http://cwfis.cfs.nrcan.gc.ca/ha/nfdb>

Historic impacts

- No public fatalities due to direct impacts of fire
- Some loss of life due to firefighting aircraft accidents
- Fires in 2015:
 - Over 250 occurrences of property damage, including cabins, vehicles, outbuildings, commercial properties, etc.
 - Over 10,000 evacuations

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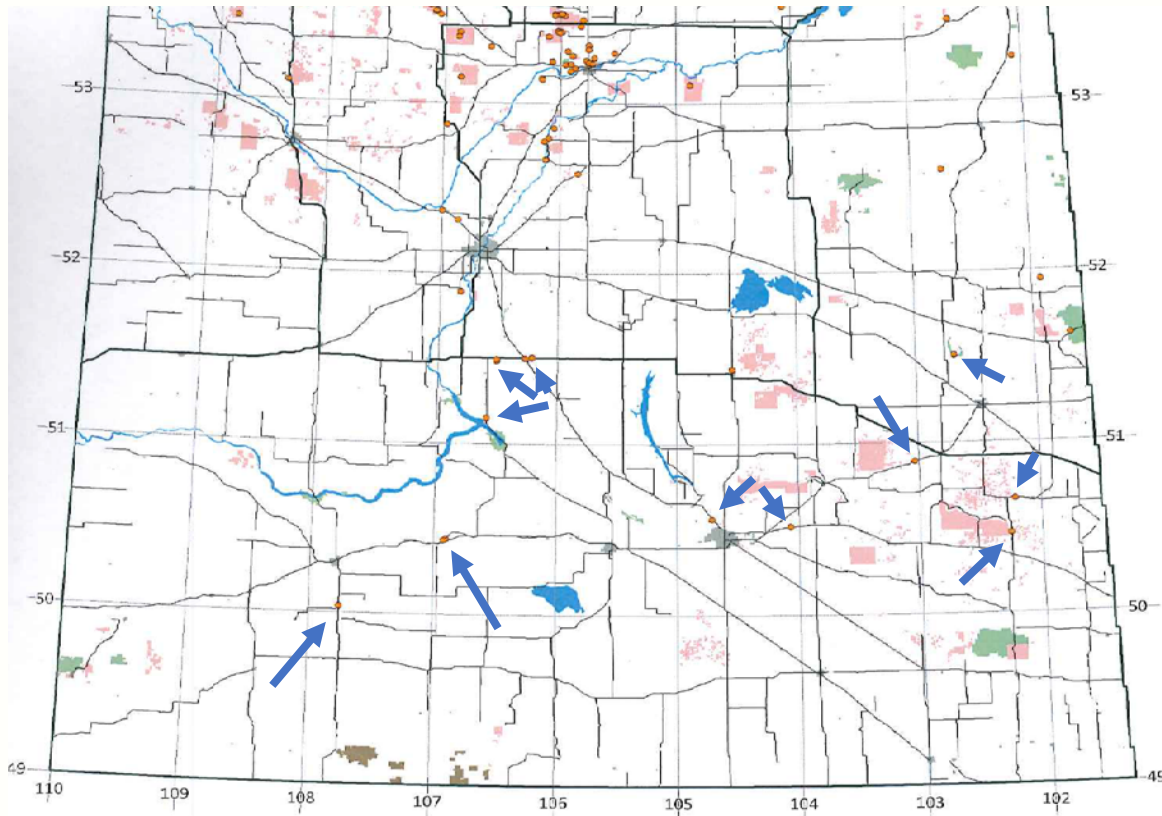
Historic impacts

- Would like to know more about grass fires – is there any central source of data?
 - We've heard that there is data at the Office of Fire Commissioner
 - Do you submit data there? Length of data set?

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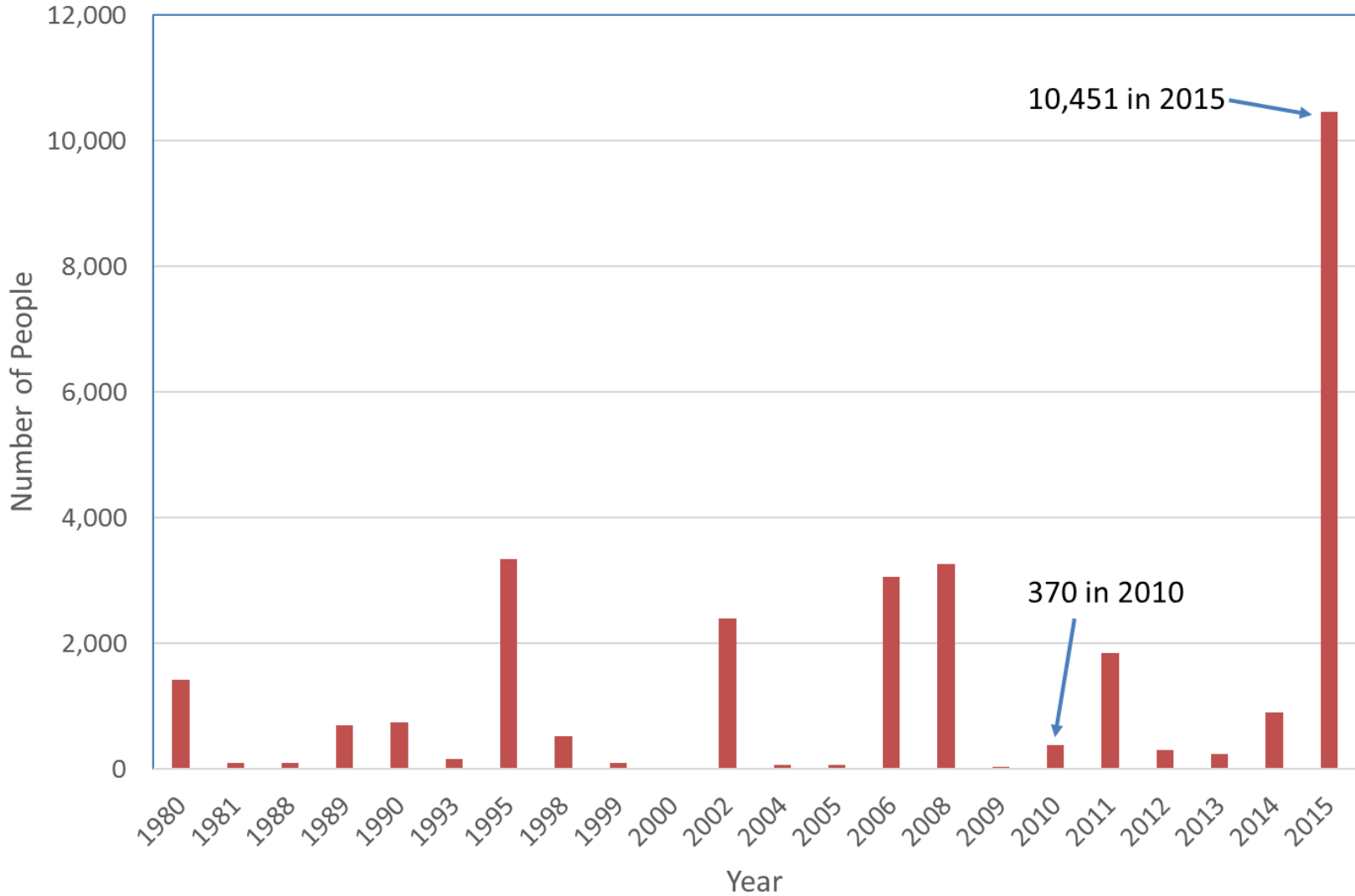
2016 Wildfire (Grassfire/brushfire in S. SK)



Were there more than these?

Source: Wildfire Management Branch

SK Wildfire Evacuations, 1980-2015



Current mitigation

- Provincial fire suppression capacity
 - Firefighter & Air support
- Biannual Strategic Risk Assessment
 - Done every 2 years; most recent 2017
- Fire behavior modeling, fuel type mapping
- Assisted by resources (personnel, air support etc) from other jurisdictions when needed, coordinated by the Canadian Interagency Forest Fire Centre.
- Hazard reduction in and around communities (FireSmart)
- Human-caused fire prevention education



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Conclusions

- Fire is a natural part of the Saskatchewan environment
- Becomes a hazard when human values are threatened
- Significant suppression capacity exists
- Hazard reduction programs have the greatest impact on reducing risk to communities
- Reducing the number of human-caused wildfires will significantly reduce risk of wildfire impacts to people and communities
- Community evacuations continue to be an important part of health risk mitigation



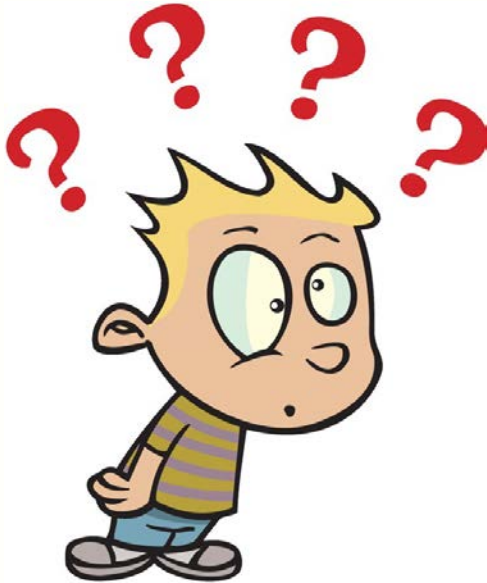
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Questions?

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References

Canadian National Fire Database:

<http://cwfis.cfs.nrcan.gc.ca/ha/nfdb>

Canadian Forest Service Fire Evacuation Database, contact:

Dr. Amy Christianson

Canadian Forest Service, Edmonton

Email: amy.christianson@canada.ca

Saskatchewan FireSmart program:

<http://www.saskatchewan.ca/residents/environment-public-health-and-safety/fire-safety/firesmart-prevent-and-prepare-for-wildfire>