SPC Links to Drought Monitoring and Prediction

Mike McDonald

Operations Program Supervisor

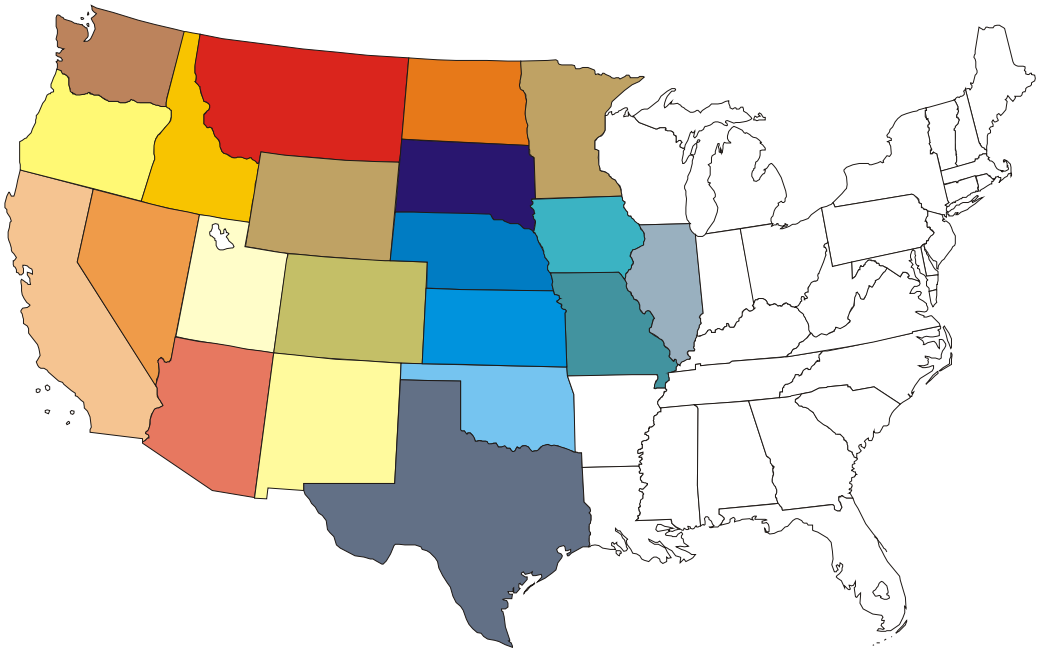
PASPC-Winnipeg

PASPC Area Responsibility

- PASPC-WWG
  - Manitoba
  - Srn Saskatchewan
  - Kivalliq
  - Baffin Island
- PASPC-EDM
  - Alberta
  - Nrn Saskatchewan
  - NWT
  - High Arctic

PASPC

Size of the PASPC's area of responsibility
if it were in the United States
(equal to approx. 65-70 U.S. Weather offices)



La superficie de la région de responsabilité
du CPTPA vis-à-vis les Etats-Unis
(l'équivalent d'environ 65-70 bureaux météorologiques américains)

- 52% of Canada's landmass
- 102 public fcst regions (S of 60)
- 32 public fcst regions (N of 60)
- Huge marine area

- PASPC:

14 Upper air sites

9 radar sites

5-6 forecasters on shift

- USA:

31 Upper air sites

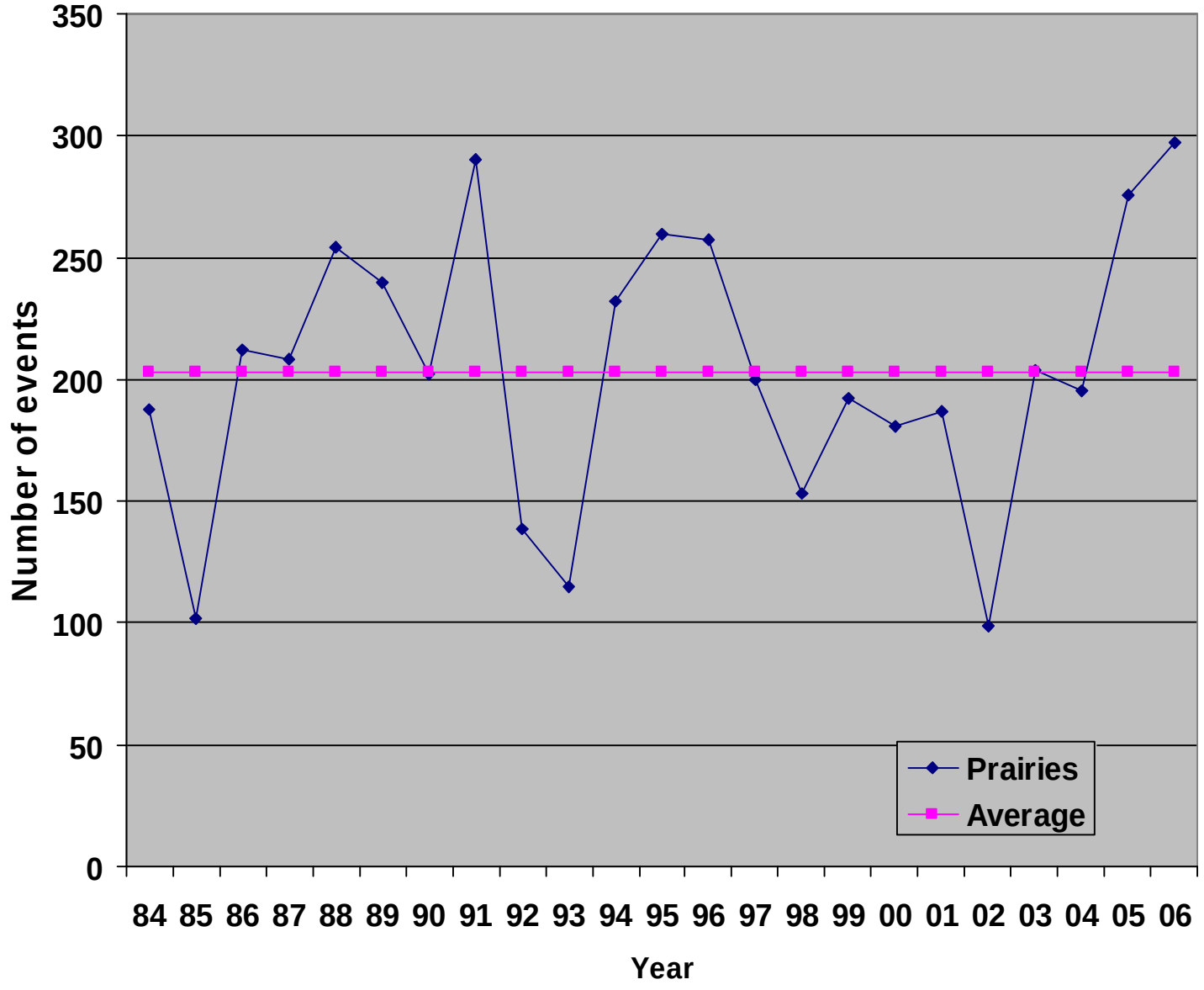
68 radar sites

150-200 forecasters on shift

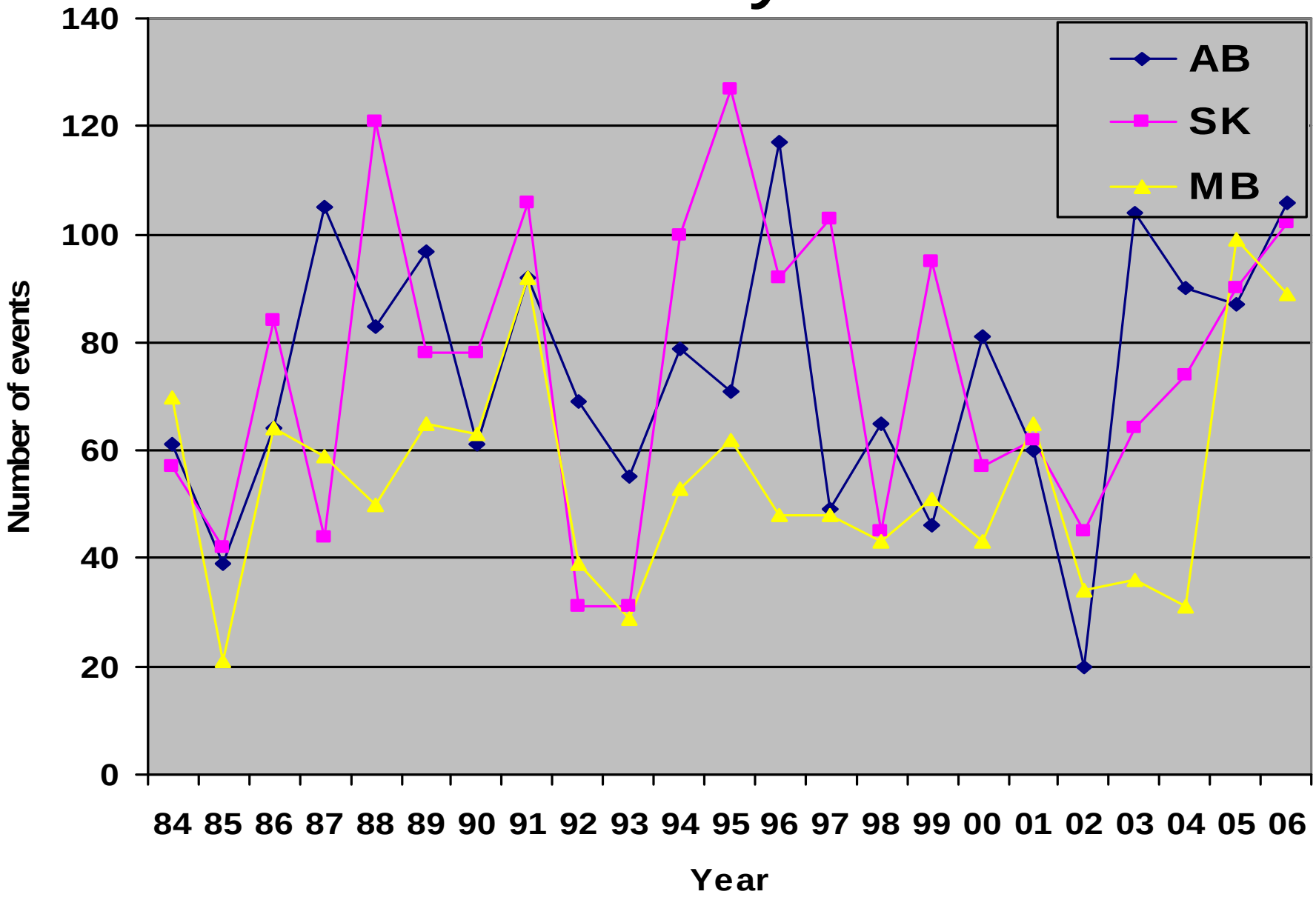
Effects of Drought to Wx Fcstg

- Blowing Dust part of public forecasts, also warning program (VSBY <1 km)
- BL moisture critical for convection
  - Impacts POP
  - Summer Severe Weather
  - Dry line (moisture discontinuity) favourable location of thunderstorm initiation.
  - Spatial west to east variability in the impact of drought to severe weather.
- Drought correlations to Forest Fire activity
  - Impacts Air Quality

Prairie Severe Wx Events



Svr Wx Events by Province

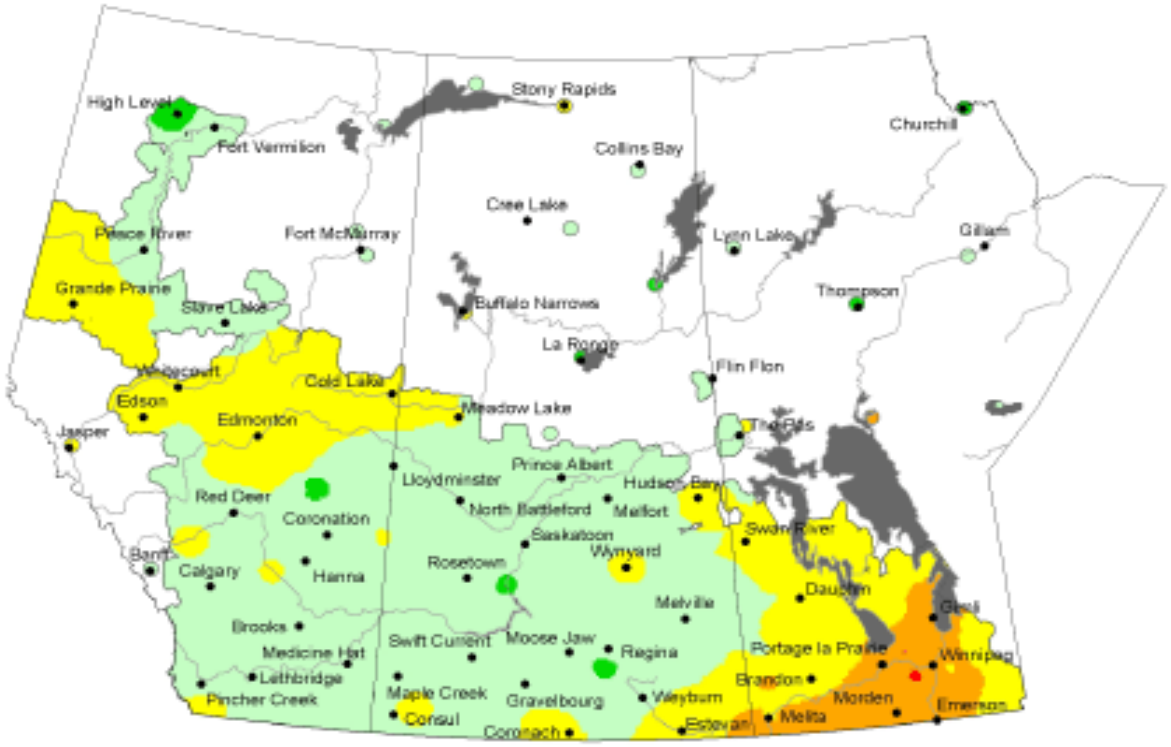


Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Canada

Percent of Average Precipitation (Prairie Region)

April 1, 2006 to August 31, 2006



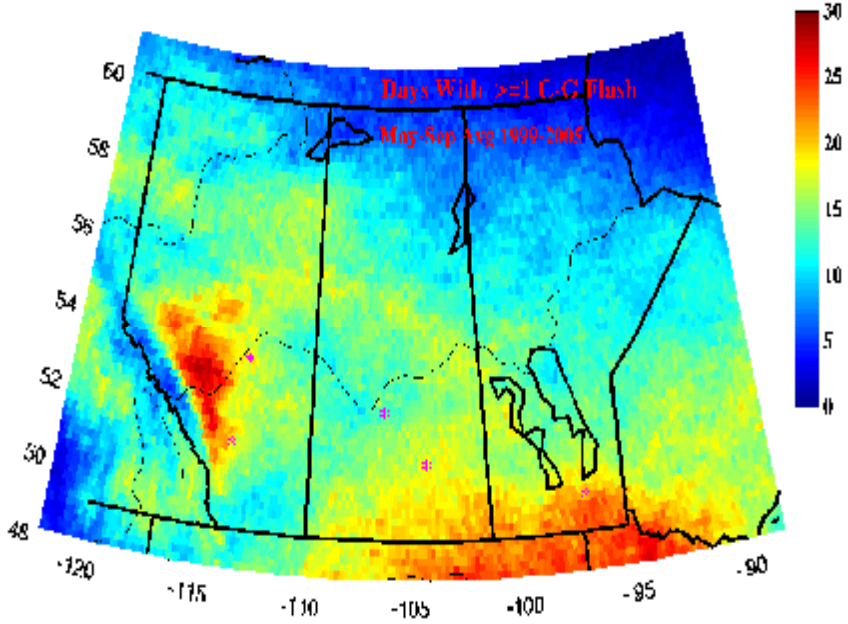
- < 40%
- 40 - 60%
- 60 - 85%
- 85 - 115%
- 115 - 150%
- 150 - 200%
- > 200%
- Extent of Agricultural Land
- Lakes and Rivers

Produced using near real-time data that has undergone initial quality control. The map may not be accurate for all regions due to data availability and data errors.

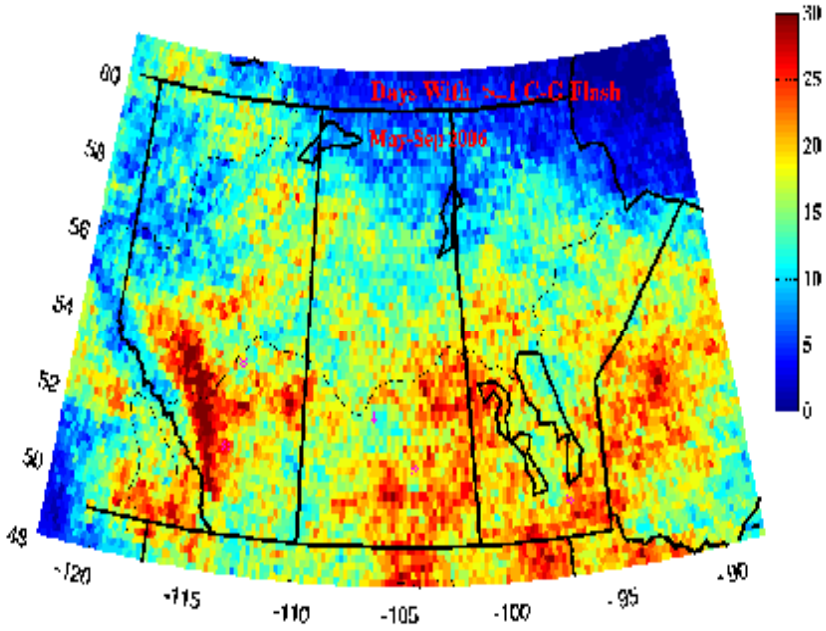
Prepared by Agriculture and Agri-Food Canada's National Agroclimate Information Service (NAIS). Data provided through partnership with Environment Canada, Natural Resources Canada, and many Provincial agencies.

Created: 09/01/06
www.agr.gc.ca/pfra/drought

Lightning Days



Avg Lightning Days 1999-2005



Lightning Days Summer 2006

Mutual Interests

- Higher resolution models to more accurately deal with boundary layer conditions, such as temp, dewpoint, convective initialization schemes. Verifications of these models.
- Predictive models of drought occurrence and severity.
- Improved situational awareness on what are the specific weather patterns conducive to creation of significant drought and weather patterns conducive to end of drought.