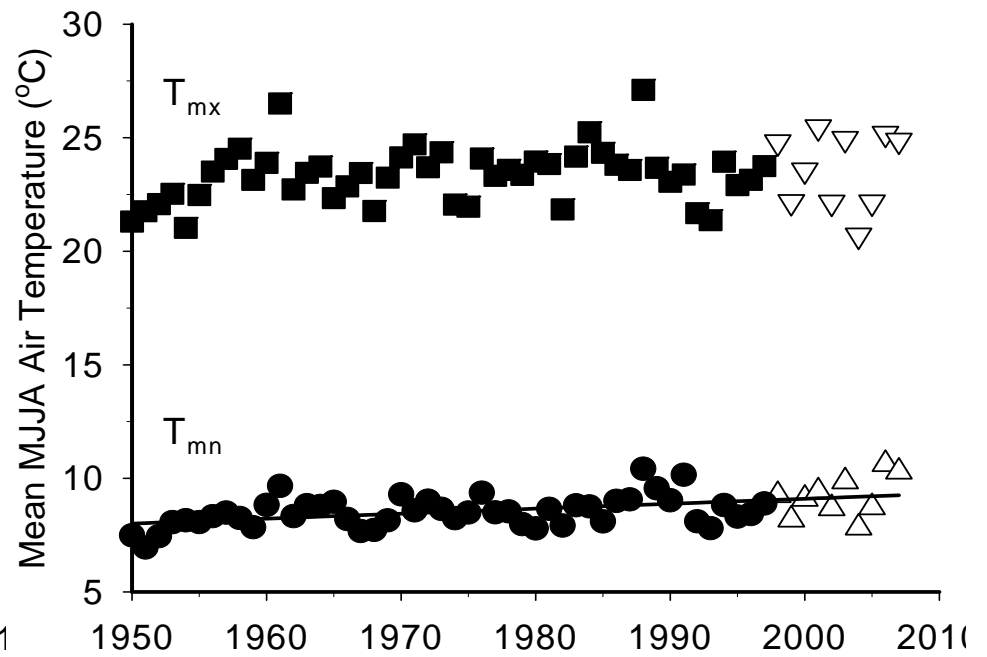
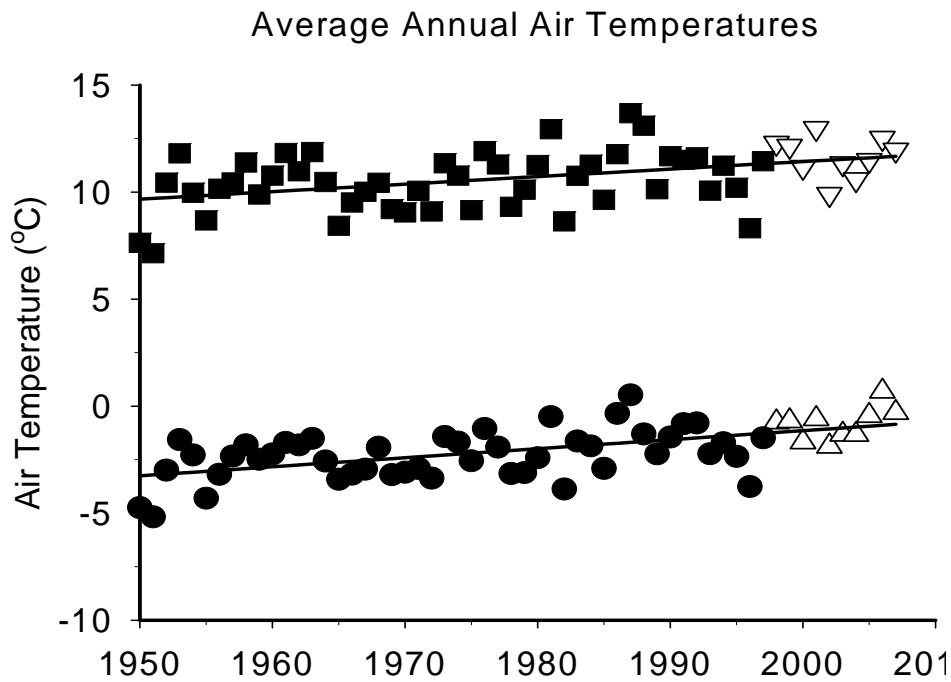
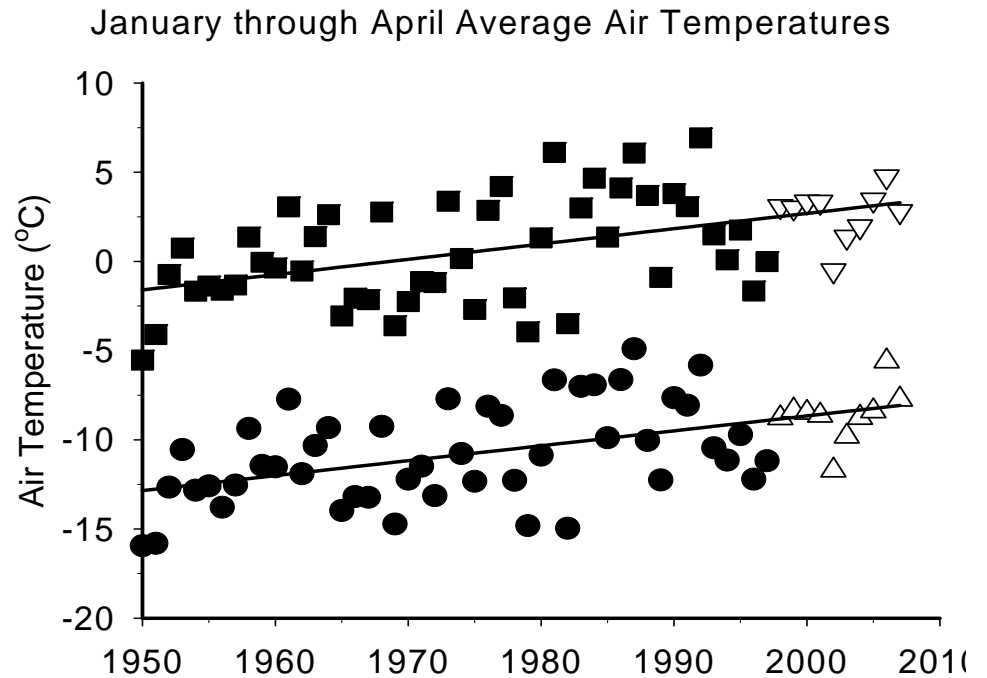


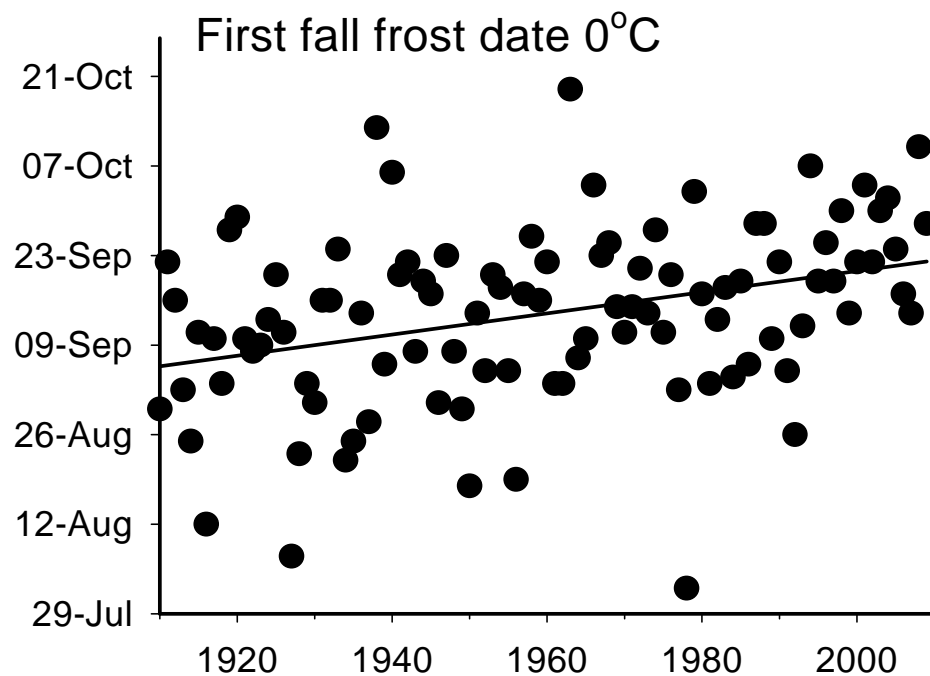
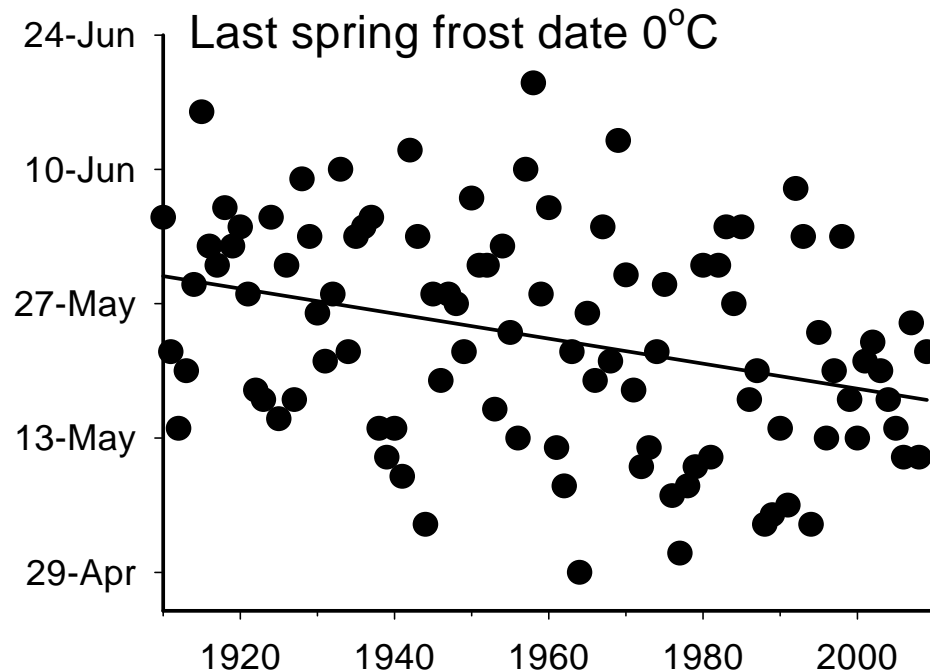
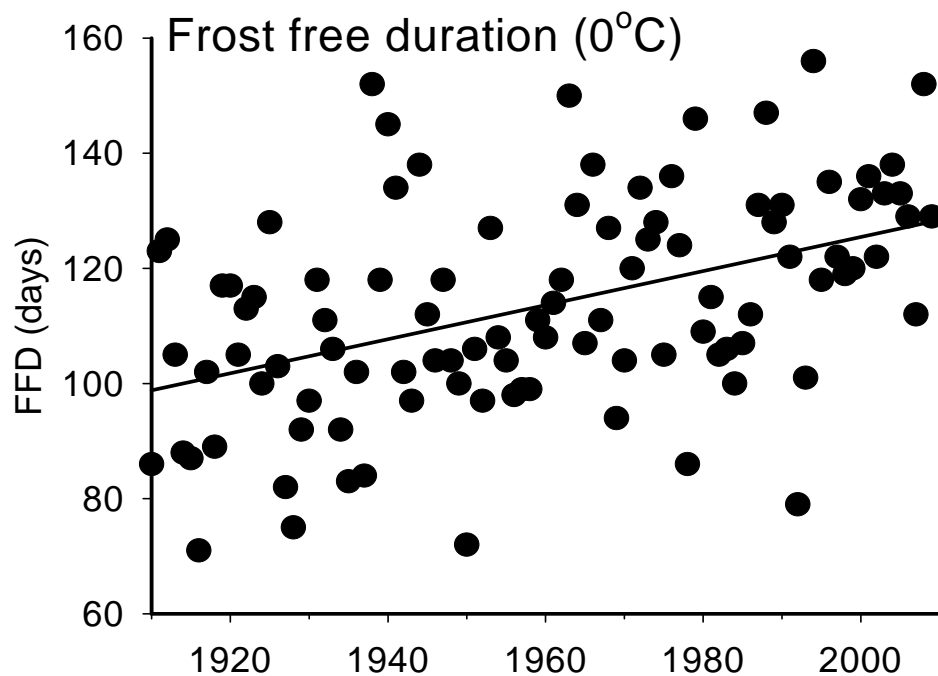
Climate of Southwest Saskatchewan

Herb Cutforth

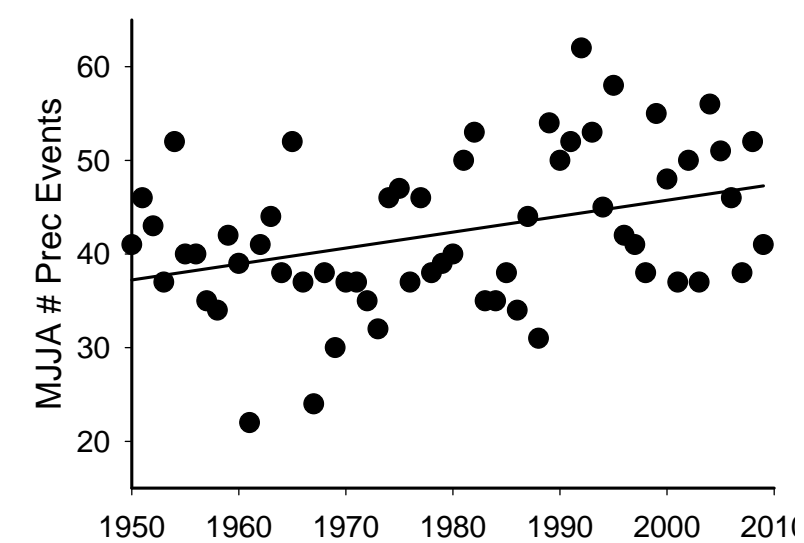
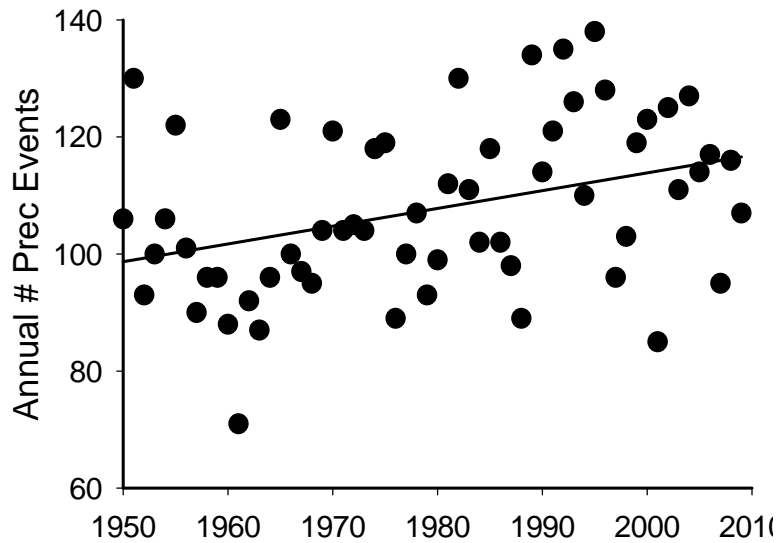
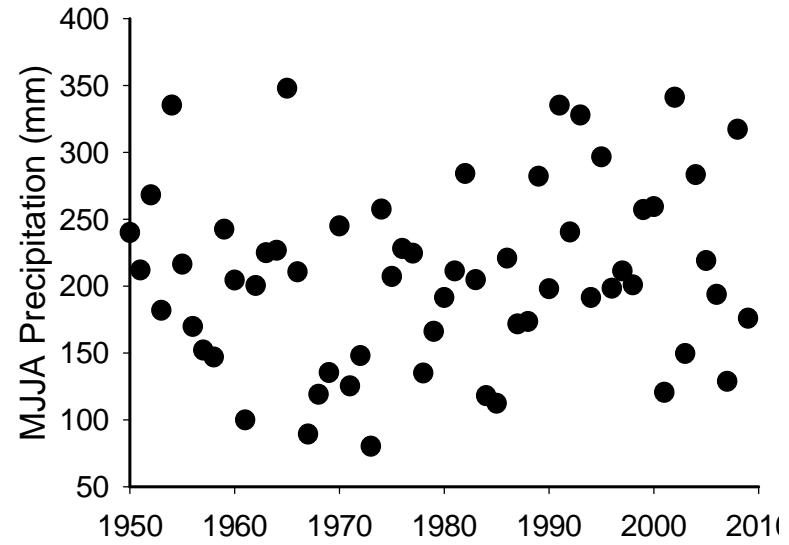
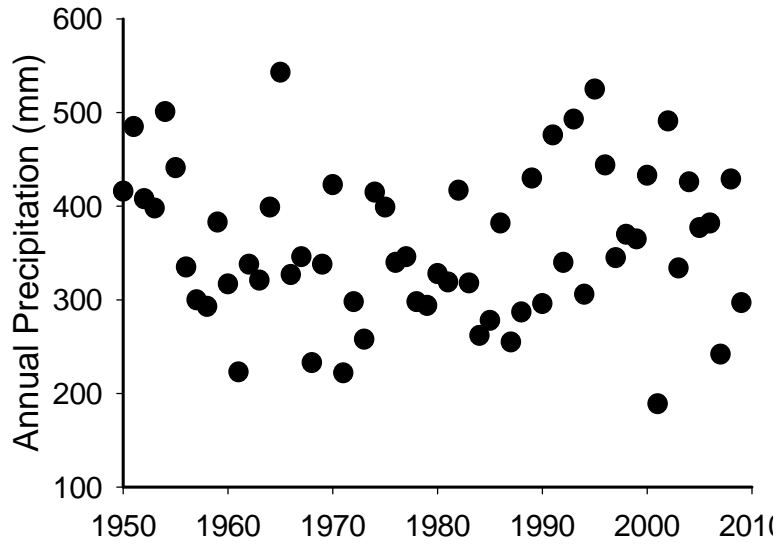
Average Maximum and Minimum Temperatures



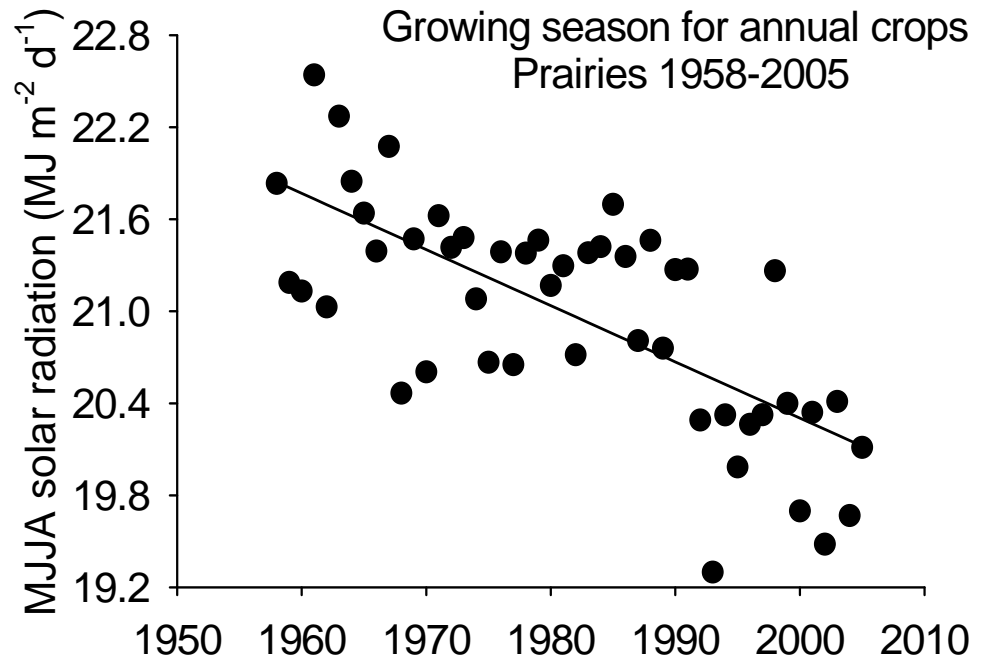
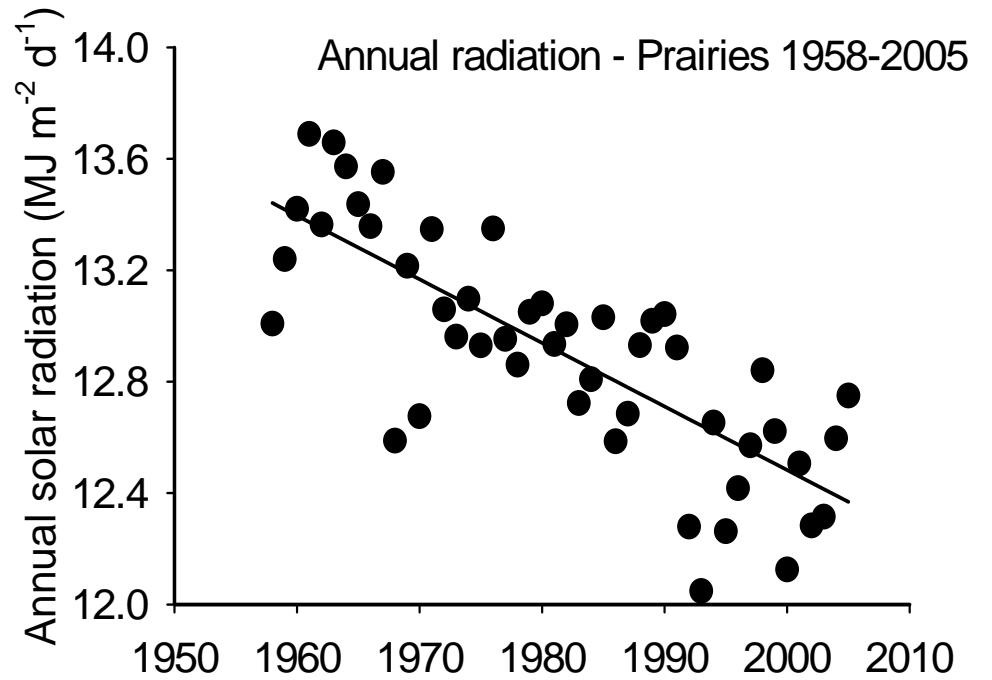
Last spring, first fall frost dates (0°C) – frost free days



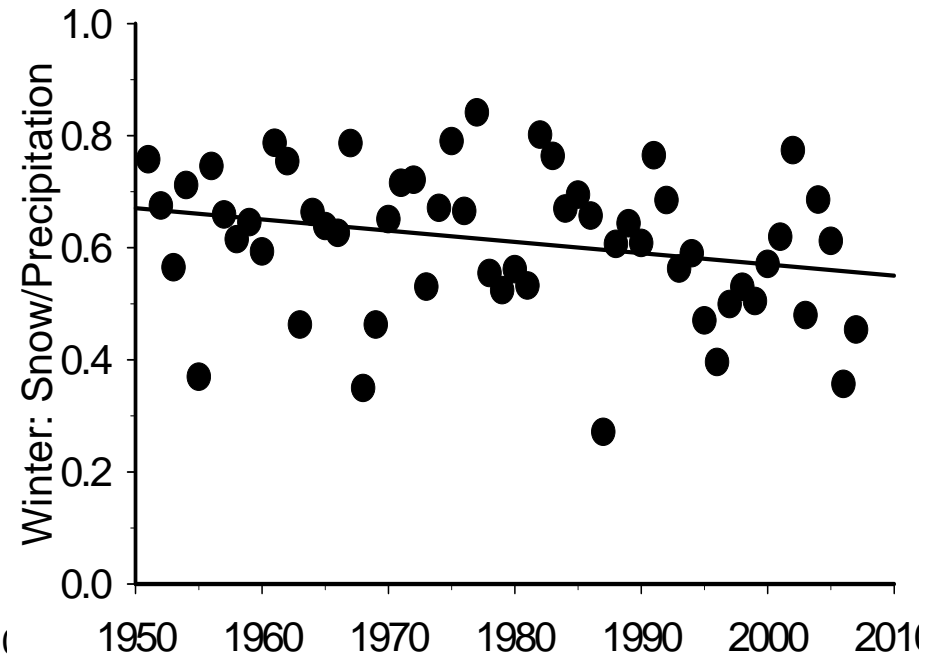
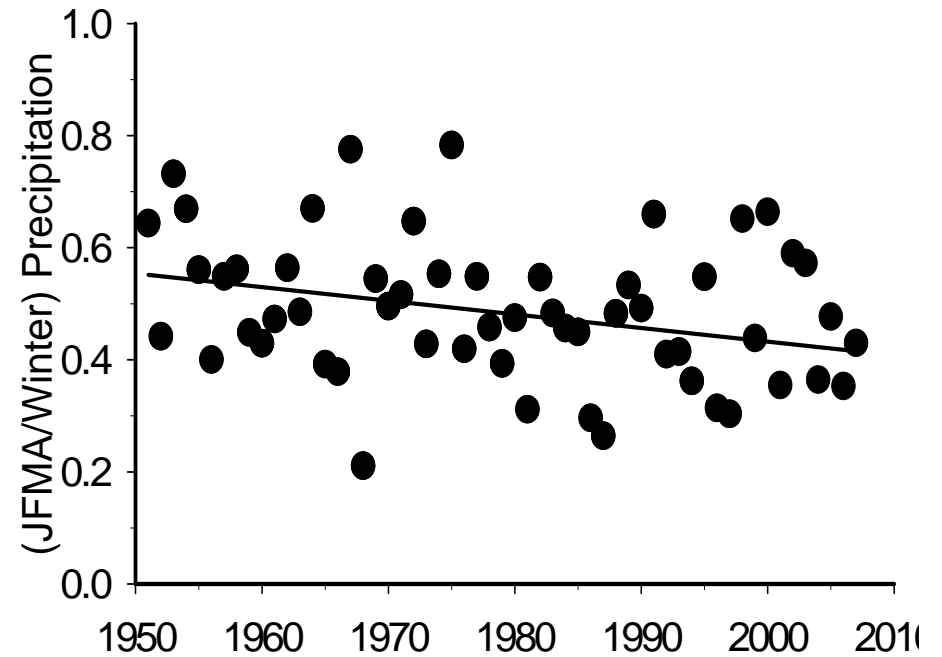
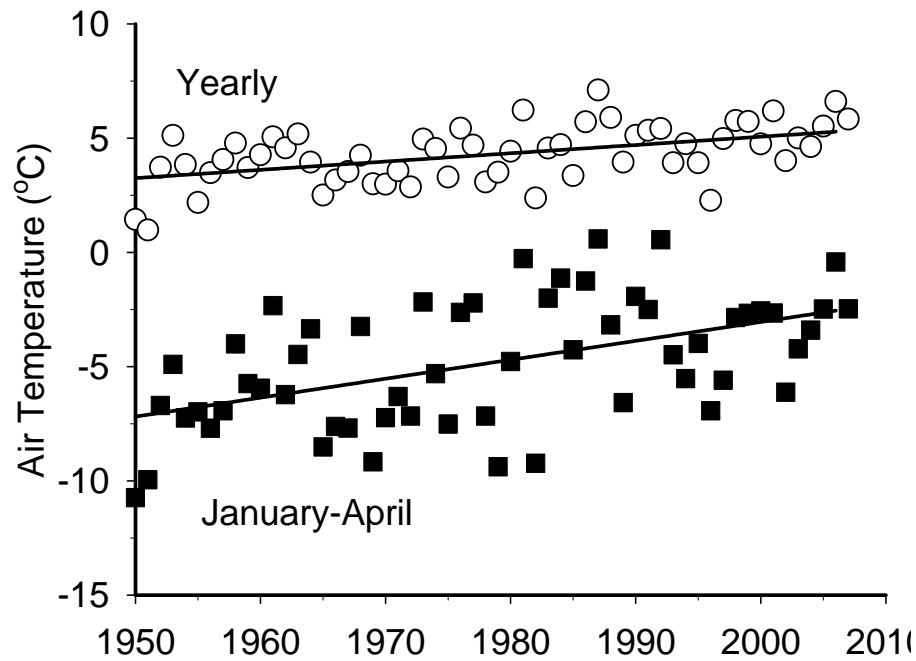
Annual and Growing Season Precipitation



Average daily
incoming solar
radiation annually
and for the
growing season
(MJJA)



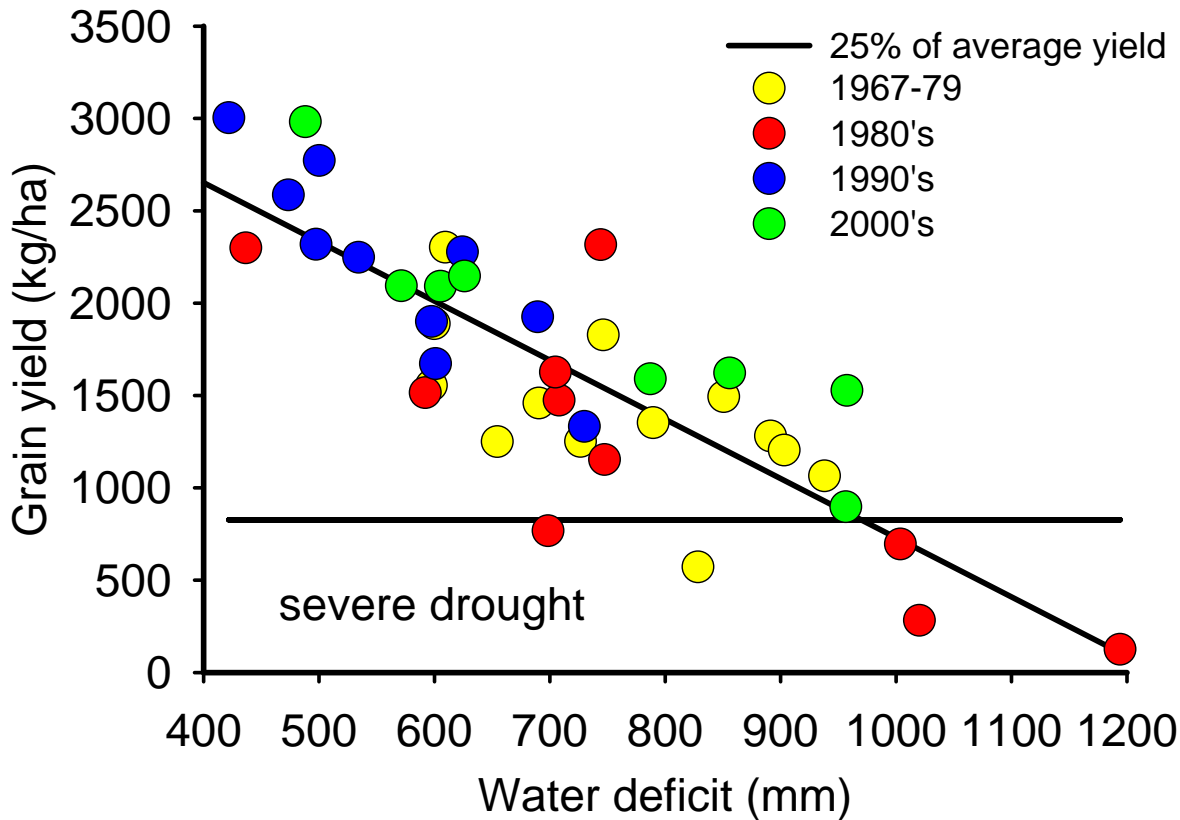
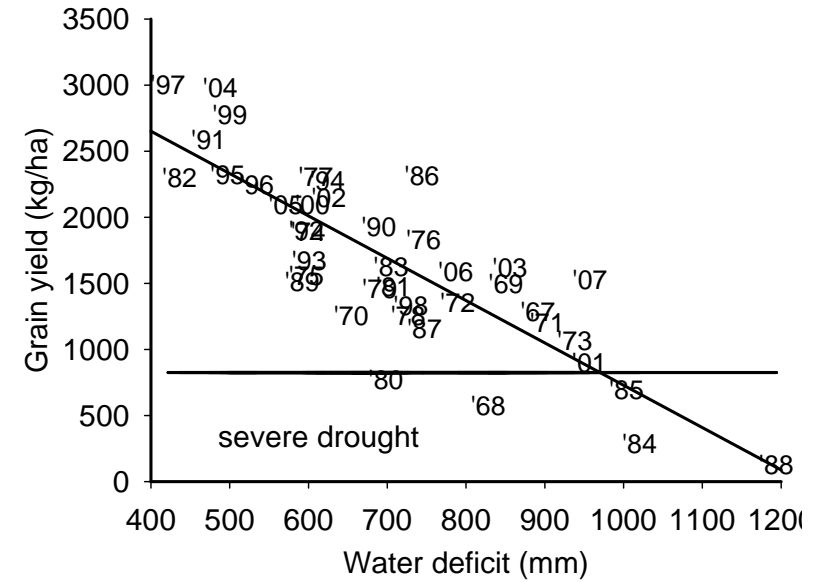
Average annual and JFMA T, Winter Precipitation 1950-2009



Drought

- ‘...a period, months or years, when water availability is consistently below the long-term average’
- usually combination of high evaporative demand and low precipitation – 1968, 1984, 1985
- 1988 – average precip., extremely high evaporative demand (windy, low RH, high T)
- variable: seasonal, geographical-local, regional
 - early (1980 vs 1986), late (2003) growing season droughts
- timing of water deficit and crop growth stage
 - wheat: 5-leaf to shot blade, seeding to emerg (water); anthesis (T)

Swift Current long-term rotation study – effects of water deficit on yield of spring wheat: 1967-2007



Adaptation and Drought

- Developing winter crops to avoid summer heat/drought
- Developing pulse/oilseed cultivars with earlier phenology to escape terminal droughts
- Identifying cultivars that have increased heat/water stress tolerance
- Earlier seeding in response to earlier springs (drought escape?)
- Developing seeding practices to alter microclimates in and above the crop canopy crop to increase yields and/or WUE
- Identify crop sequences within cropping rotations that optimize yields and WUE of crops and cropping systems
- Prepare producers for change by providing concise, targeted information applicable to their region