



Impacts of the Pine Beetle on Peak flows

Hydrologic Changes in the Nicola Watershed Workshop

March 30, 2011, Merritt, BC



Presentation Outline

- Source of peak flows in the watershed
- Impacts of the pine beetle on forests
- Impacts of loss of forest cover on hydrology
- Impacts on peak flows



Source of peak flows in the watershed

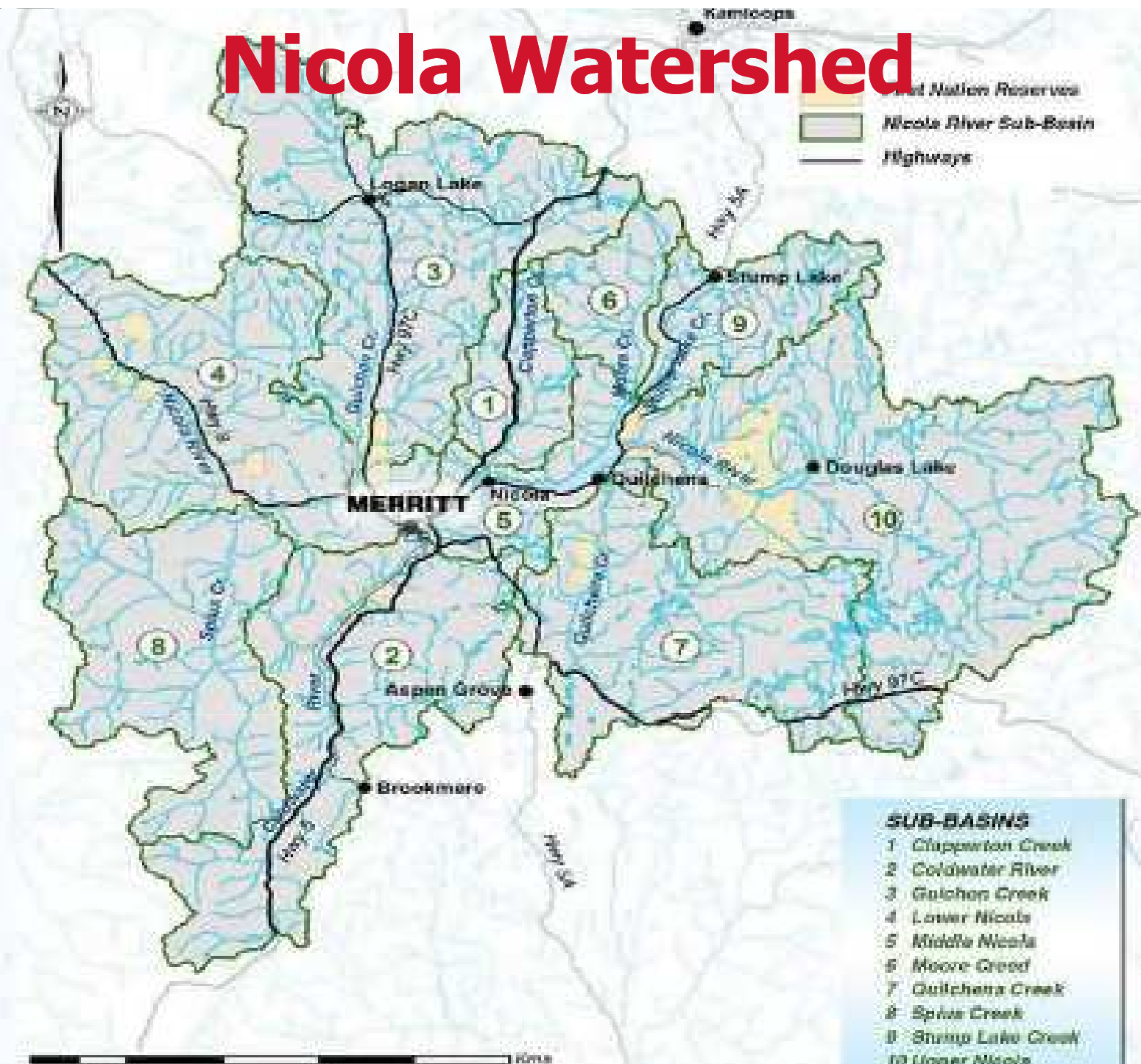
- Snow dominated hydrology
- Spring snow melt drives the peak flows



Snow Dominated Hydrology

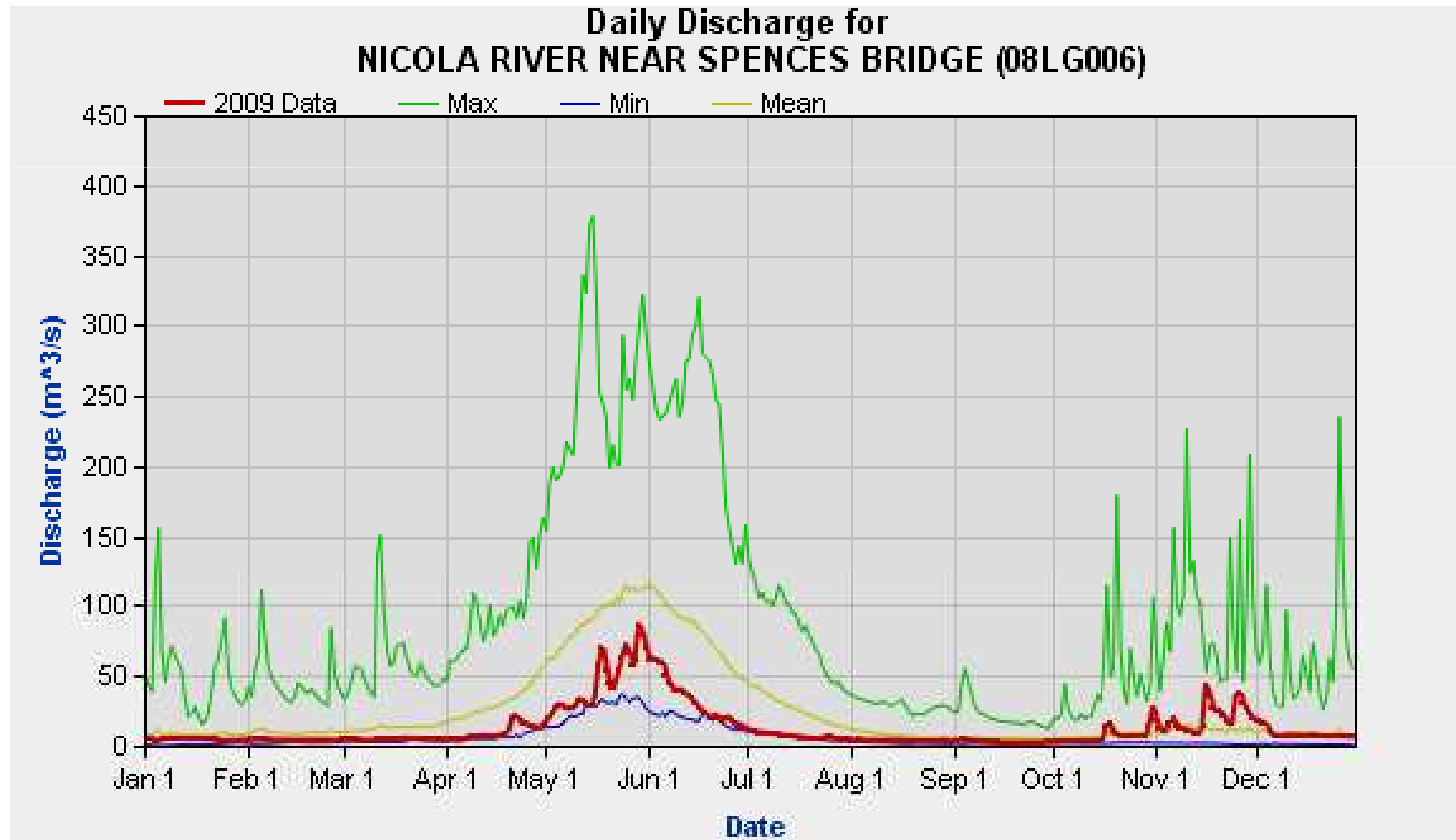


Nicola Watershed



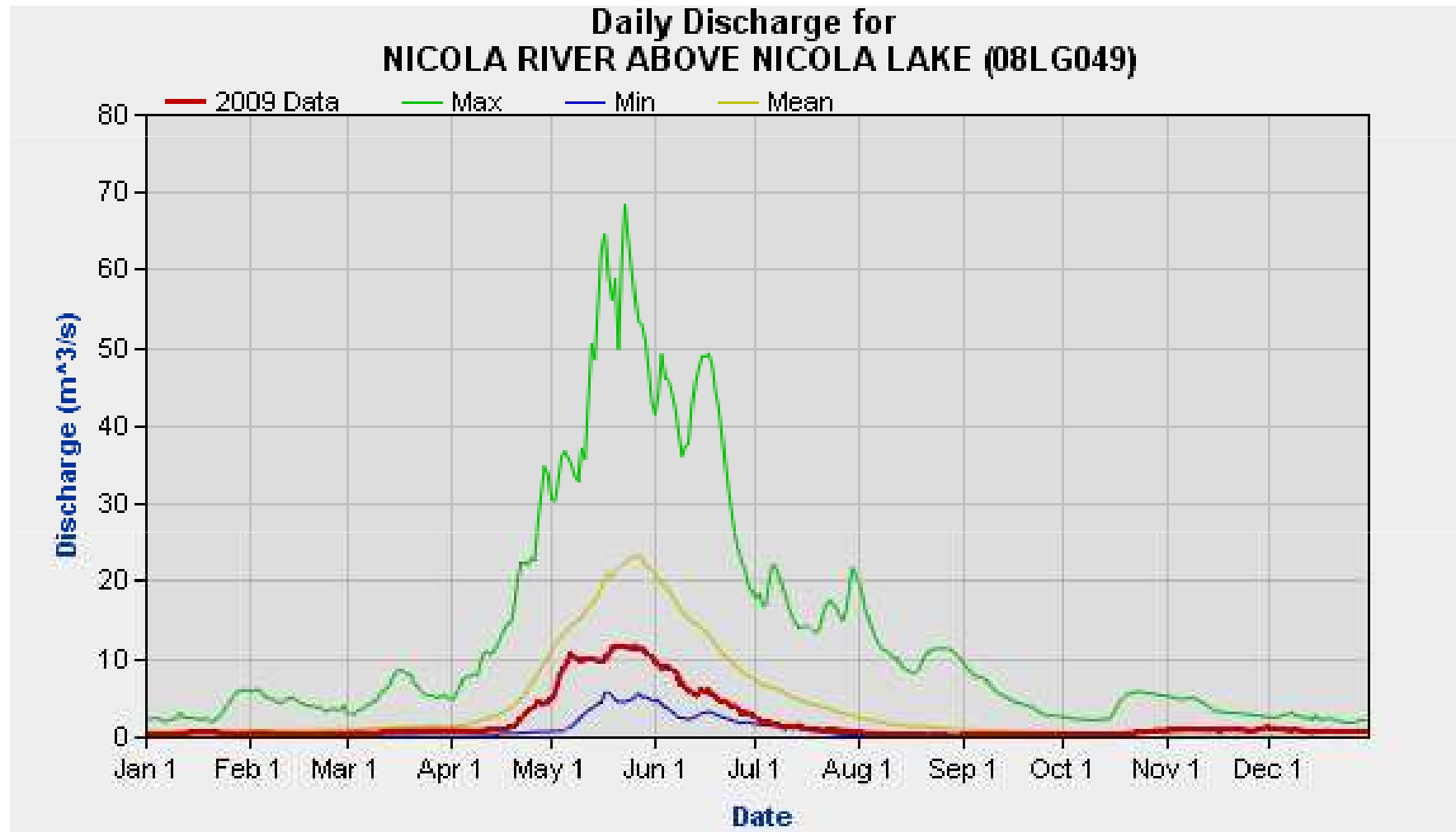


Runoff at Spences Bridge



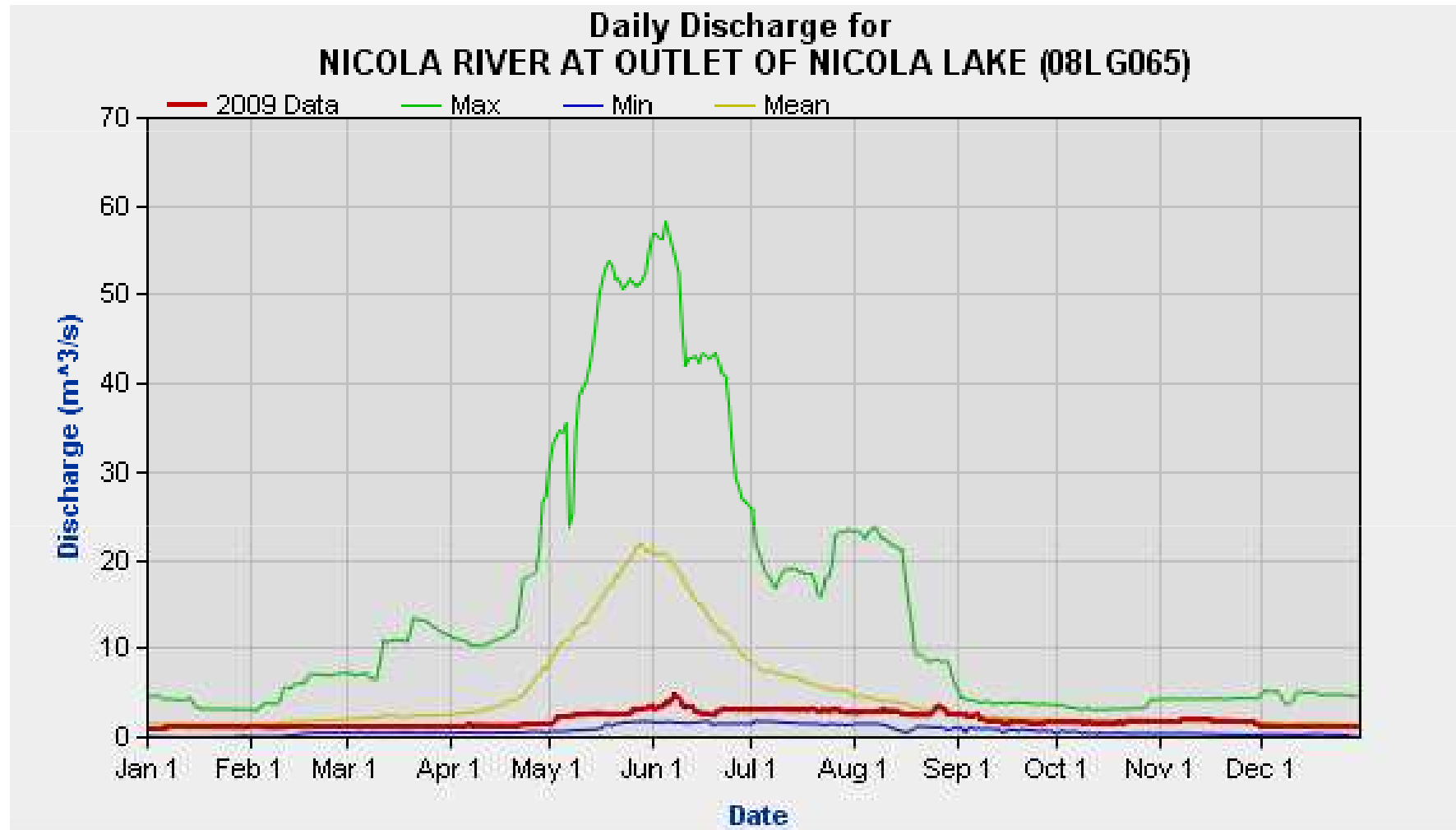


Runoff above Nicola Lake



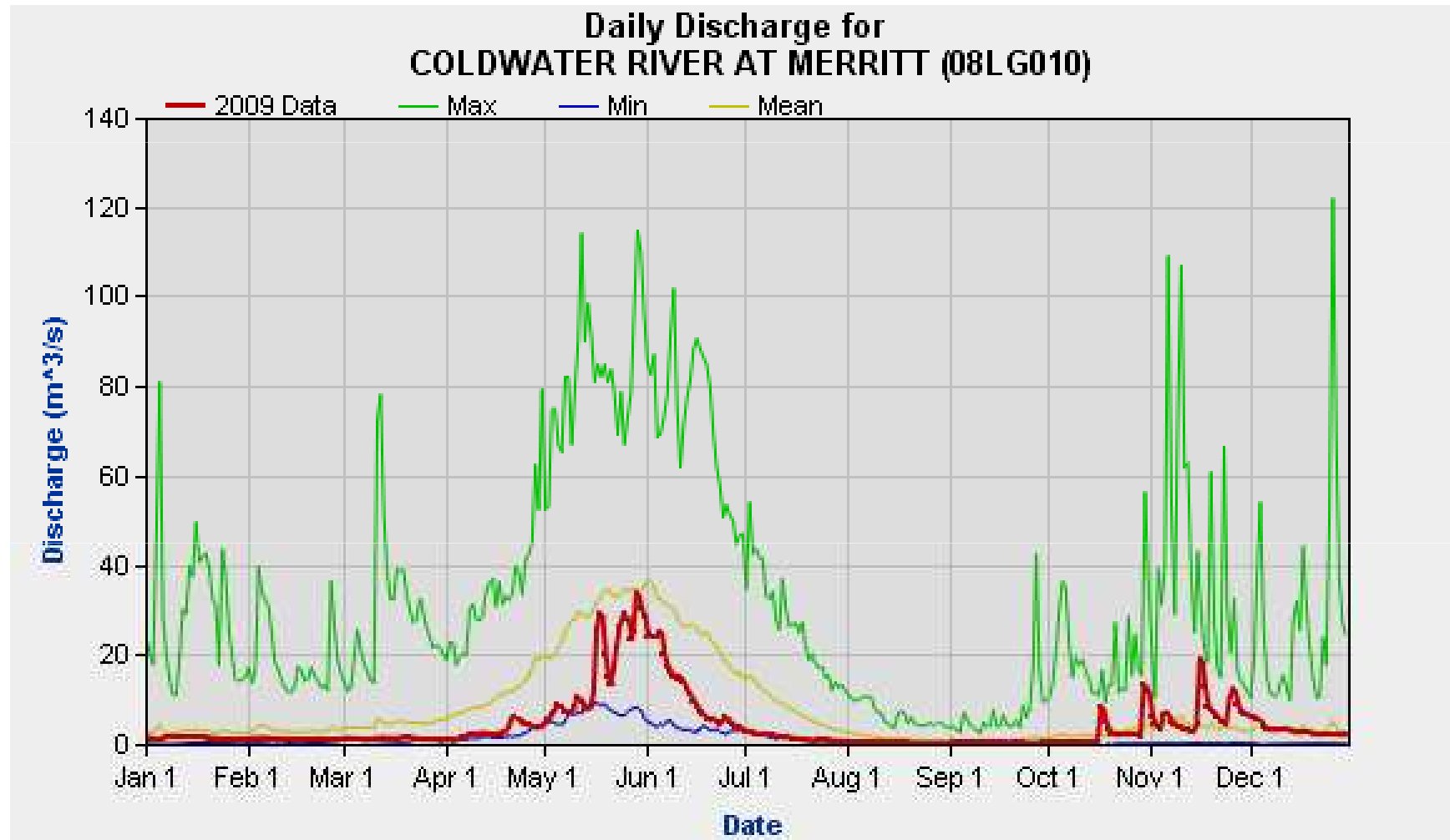


Runoff at outlet of Nicola Lake



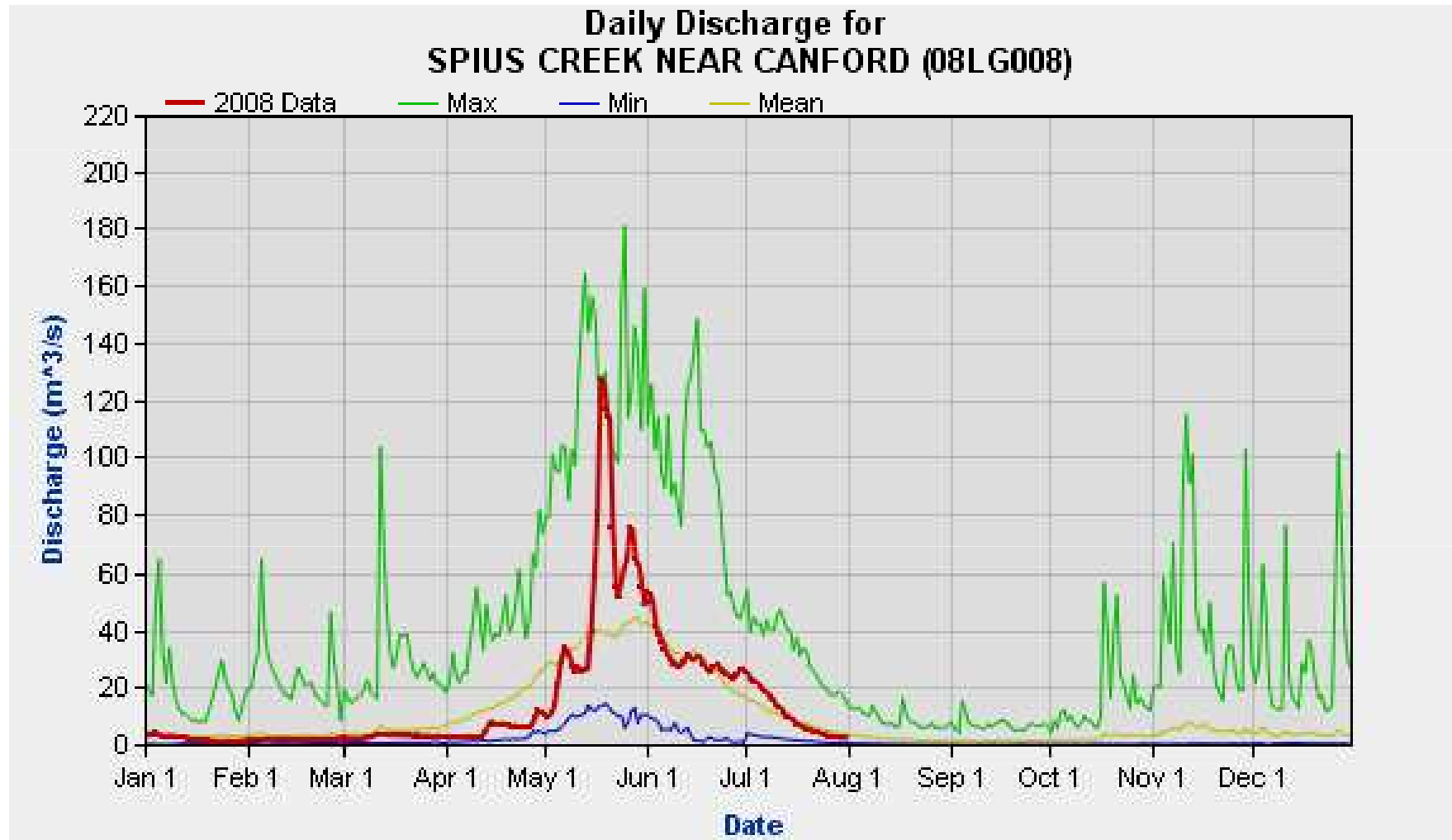


Runoff from Coldwater River



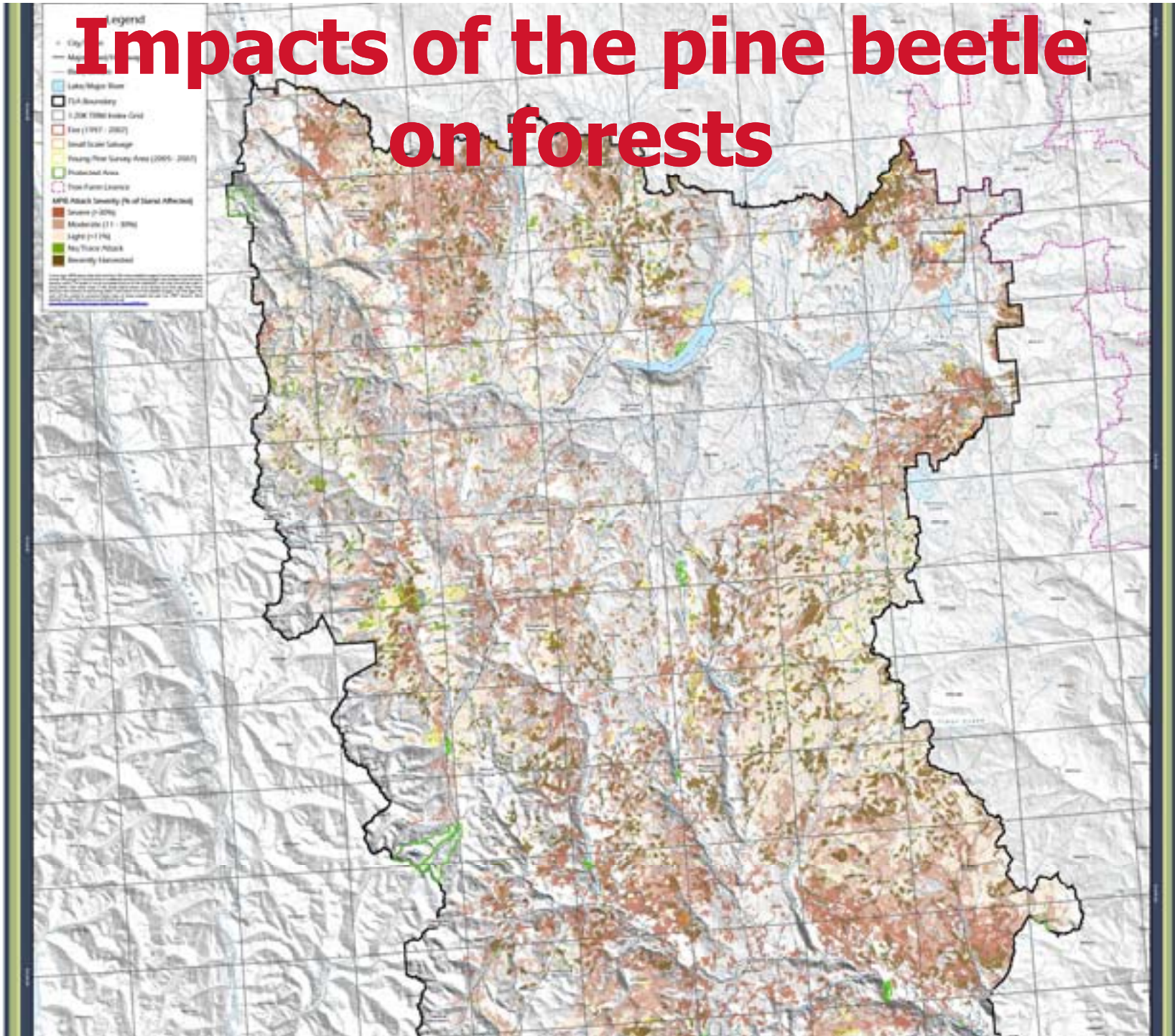


Runoff from Spius Creek





Impacts of the pine beetle on forests





Impacts of the pine beetle on forests





Impacts of loss of forest cover on hydrology





Impacts of loss of forest cover on hydrology





Why will peak flows increase?

- **More runoff**
- **Earlier snowmelt**
- **Faster runoff**
- **Synchronizing runoff**

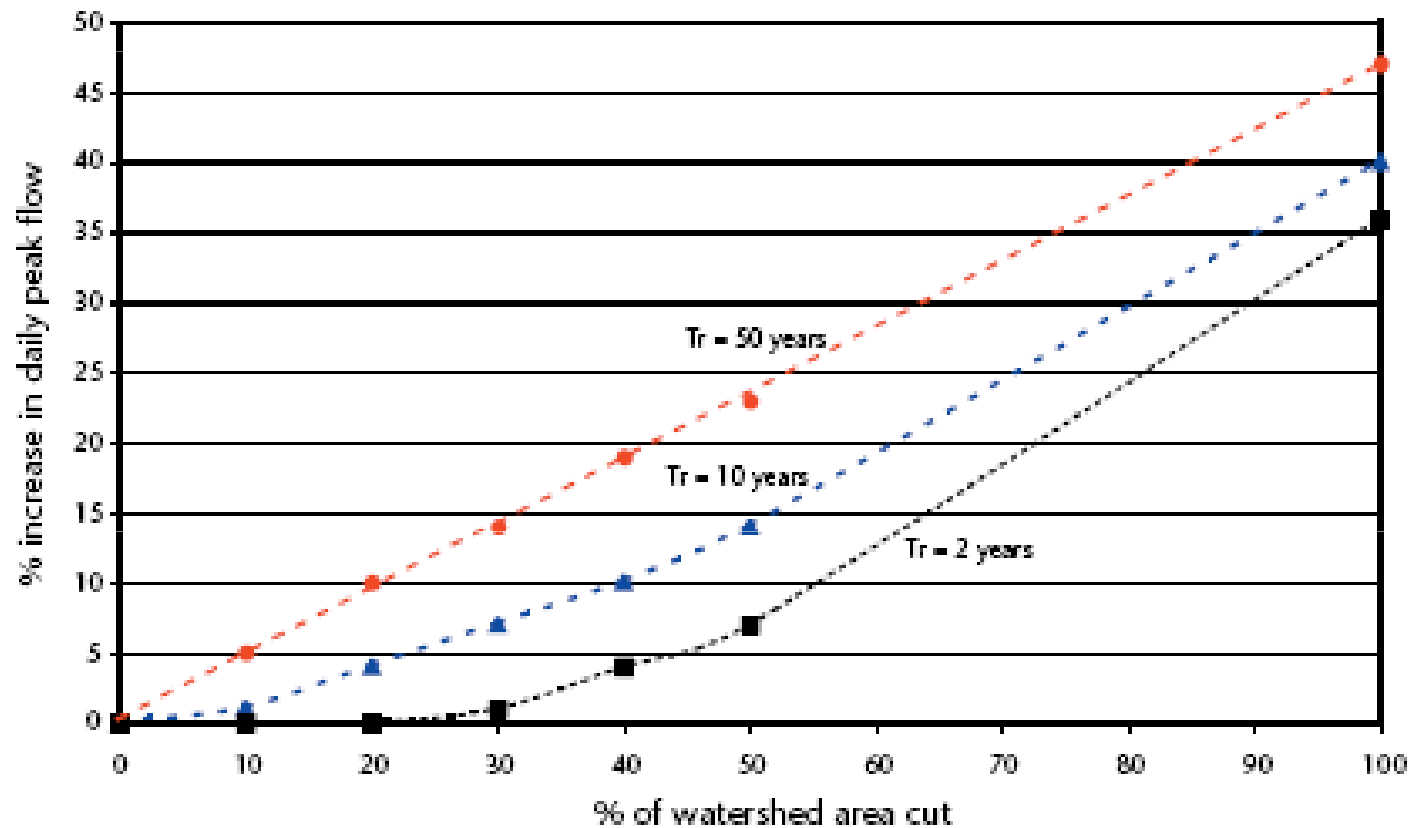


More water





Impacts of loss of forest cover





Earlier snowmelt





Faster runoff





Synchronized runoff





Are these permanent changes to peak flows?

- No
- The pine stands will regenerate and new forests will replace the dead stands
- Areas that are logged and replanted will recover more quickly, 30 – 40 years
- Areas that are left to regenerate naturally will recover more slowly, 60+ years



QUESTIONS??

