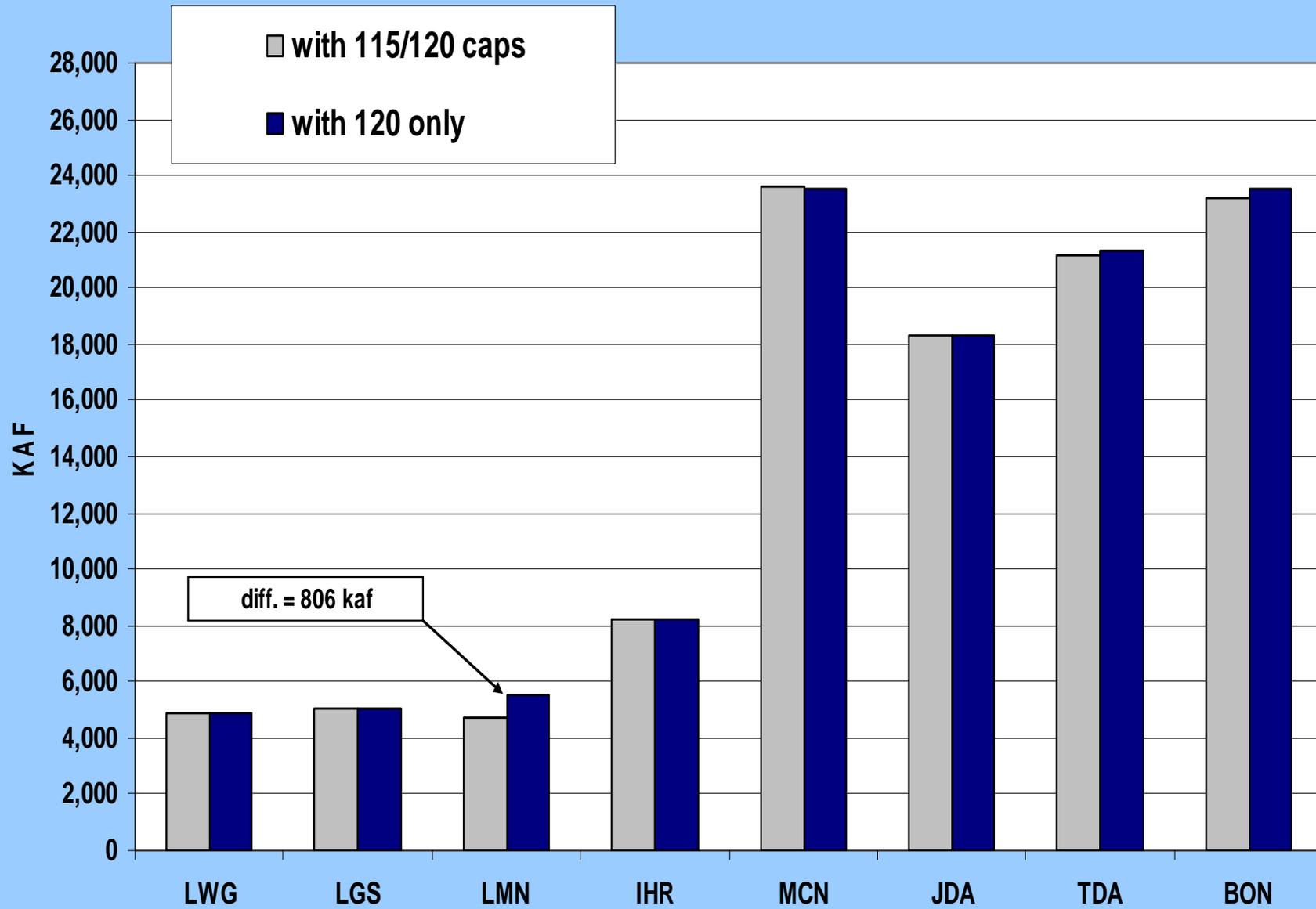


HYDSIM

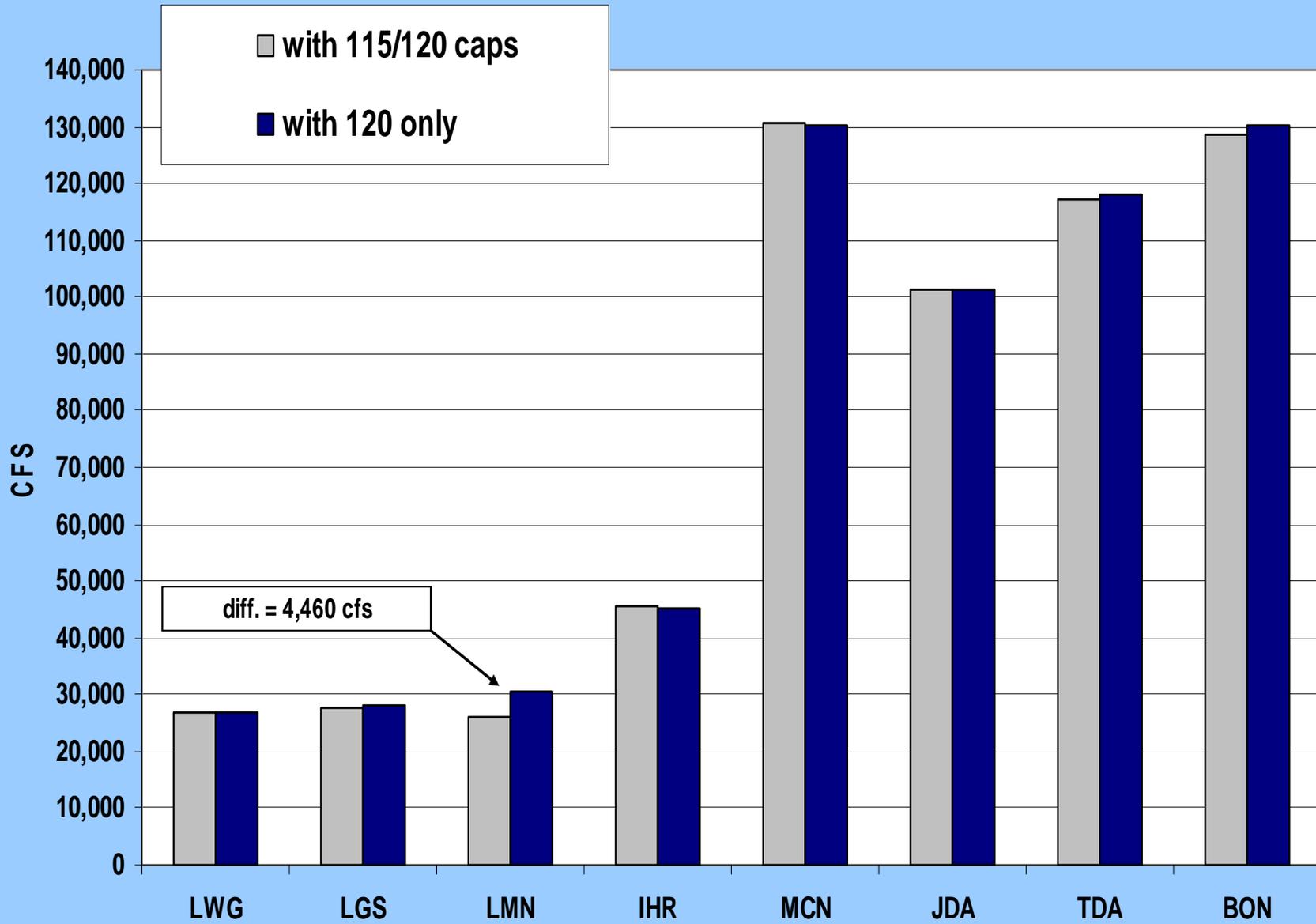
- HYDSIM models the operation of over 70 federal and non-federal projects in the Columbia Basin.
- Applies today's operating rules, objectives, and estimates to these historic water conditions.
- Uses 70 years of month average historical runoff data to estimate the operation using realistic varying water conditions

- Two HYDSIM scenarios were evaluated
 - With 120% TDG spill caps (proposed condition)
 - With 115% / 120% TDG spill caps (current condition)
- TDG spill caps varied by flow condition (low, medium or high), by modeling period and by scenario
- HYDSIM model produced month average outflows and total spill quantities for these two scenarios
 - Total spill is sum of forced spill, juvenile passage spill and over-generation spill.
- Under proposed condition scenario, total spill volume increased, however.....

Spring Spill Volumes (April 1 - June 30) (HYDSIM average of 70 water years)

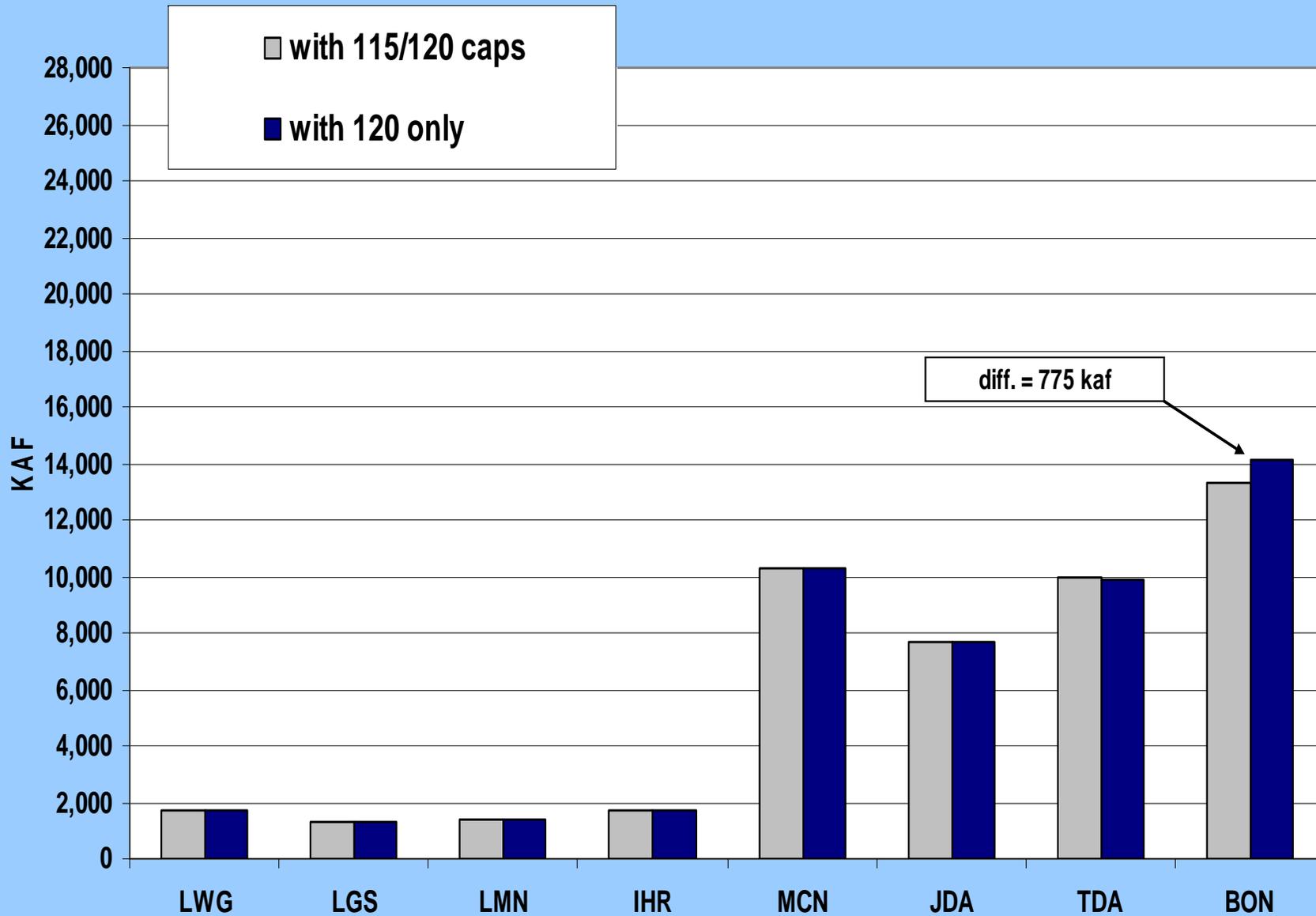


Average Spring Spill (April 1 - June 30) (HYDSIM average of 70 water years)



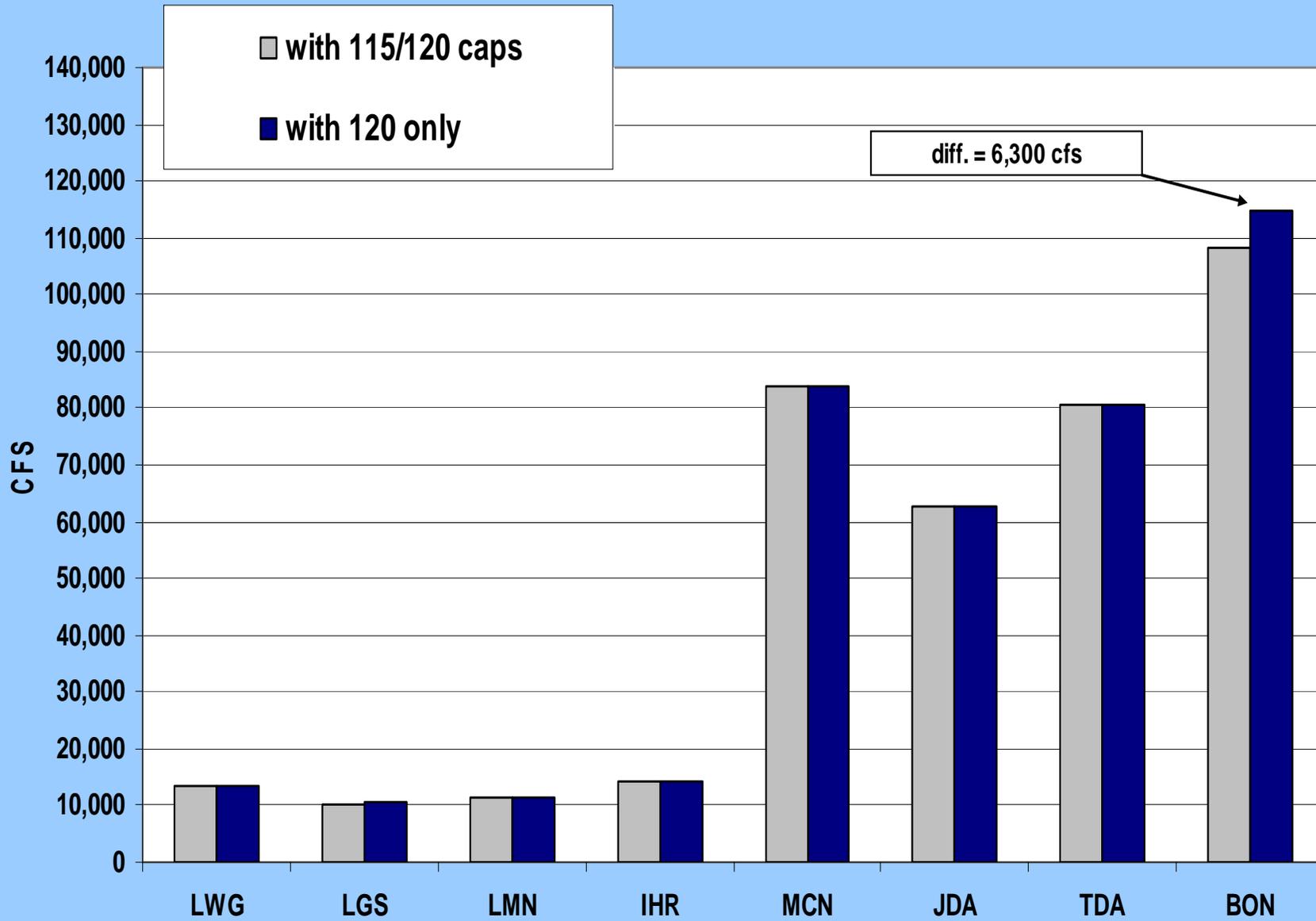
Summer Spill Volumes (July 1 - August 31)

(HYDSIM average of 70 water years)



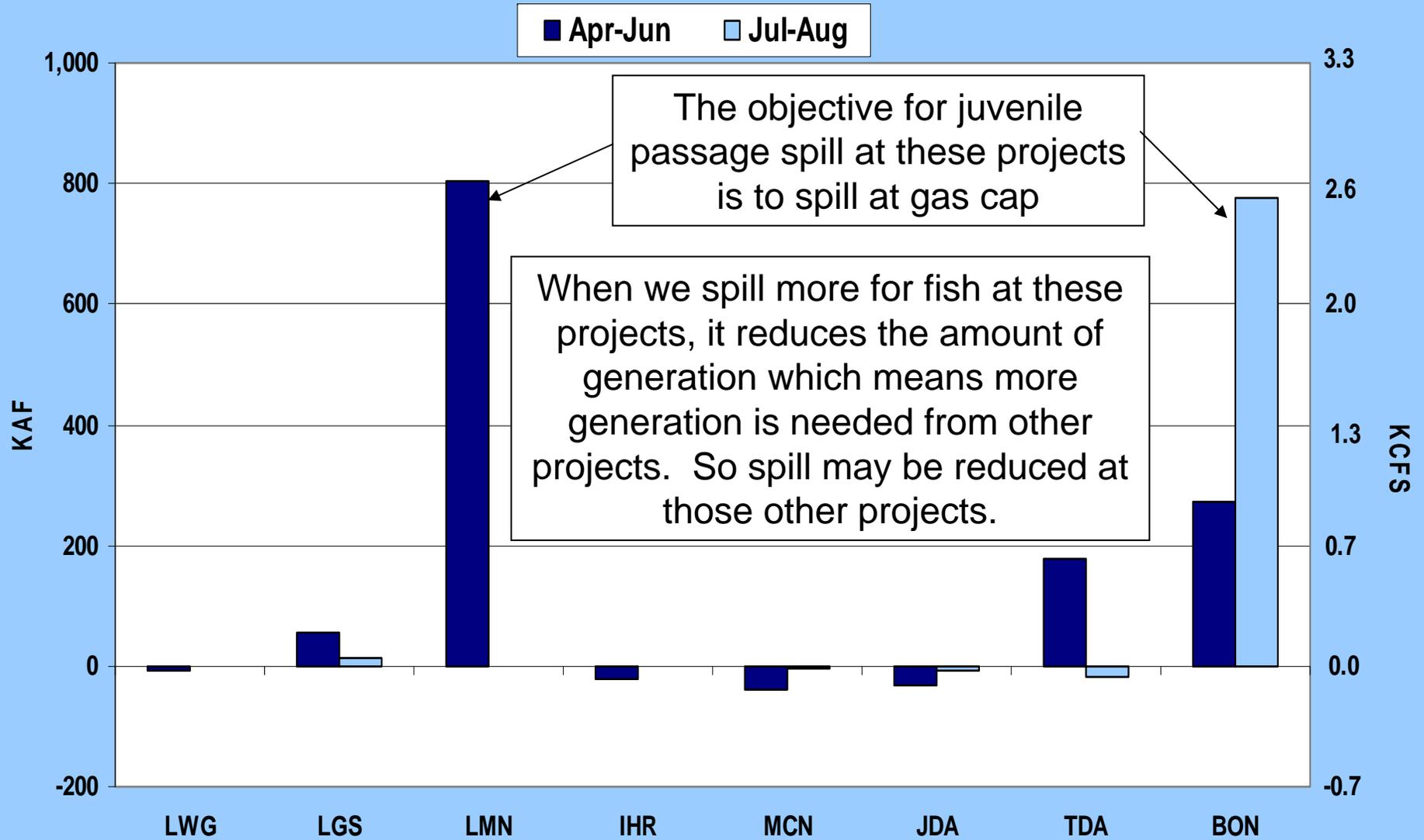
Average Summer Spill (July 1 - August 31)

(HYDSIM average of 70 water years)



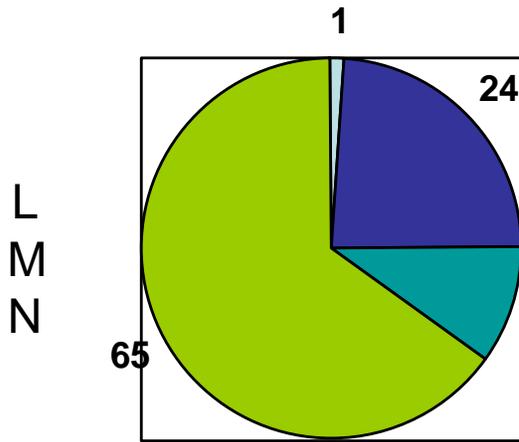
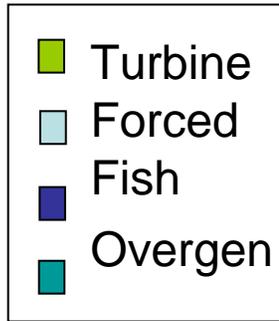
Spill Change due to Removing 115% FB TDG Standard

(HYDSIM average of 70 water years)



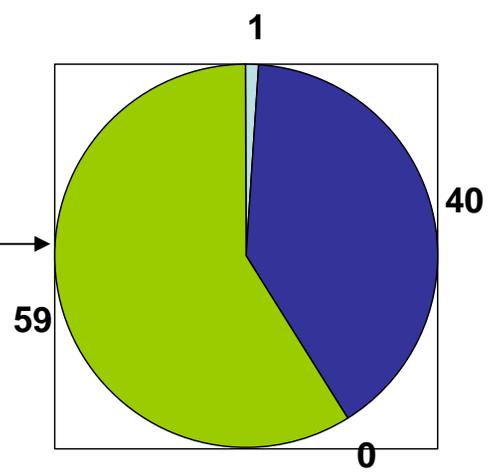
Example: 100 kcfs flow at LMN

200 kcfs flow at MCN



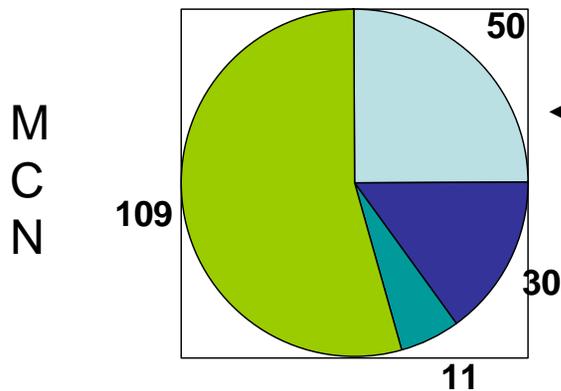
Total Spill = 35 kcfs

Total Spill = 41 kcfs



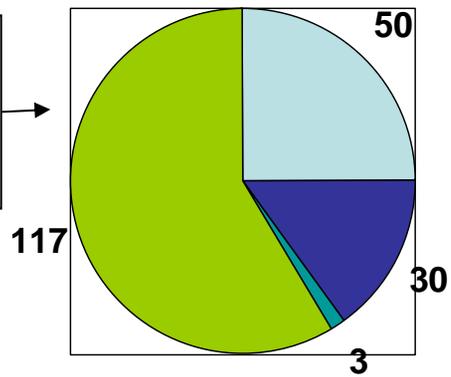
Current Conditions

Proposed Conditions



Total Spill = 91 kcfs

Total Spill = 83 kcfs



MCN

- HYDSIM month average outflow and total spill quantities were shaped into daily increments for use in NOAA Fisheries Compass Model