

PERFORMANCE MEASURE INFORMATION SHEET #19
SOFT CONSTRAINTS FOR ARROW LAKES RESERVOIR: RECREATION

Objective / Location	Performance Measure	Units	Description	MSIC
Recreation Soft Constraint/Arrow Reservoir	Recreation access	# days elevation is between 1435 and 1440 ft from 24 May to 30 September	Sum of # days the reservoir water level is within the preferred elevation range over the recreation season	7 days per year

Description

Recreation interests in Arrow Lakes Reservoir were highlighted as being key elements in crafting recommendations around water use during the Columbia River WUP process. These interests were measured in a number of ways for various aspects of recreational use and enjoyment, including boat and shoreline access, use of the drawdown zone, aesthetics and tourism benefits.

As part of developing soft constraints for Arrow Reservoir operations, those Committee members representing recreation interests agreed that the ideal operating range for recreation was between 1435 and 1440 ft. It was acknowledged that, with construction of new boat ramps and upgrades to existing ramps, a lower level of 1425 ft would be acceptable. However, there was a strong preference for interests not served by these few formal access points to maintain the reservoir levels between 1435 and 1440 ft during the recreation season.

Calculations

For each scenario:

1. Assemble the simulated results for Arrow Reservoir elevations over 60 years (1940-2000; Figure 1).
2. Count the number of days over the recreation season (24 May to 30 September) that the reservoir is between 1435 and 1440 ft each of the 60 years.
3. Summarize all statistics (Figure 2).

Key Assumptions and Uncertainties

- Each scenario is simulated using the same set of system constraints, input assumptions (e.g., load forecasts) and historic basin inflows (1940 – 2000).
- Assumes minimal recreational use outside the defined recreation season.

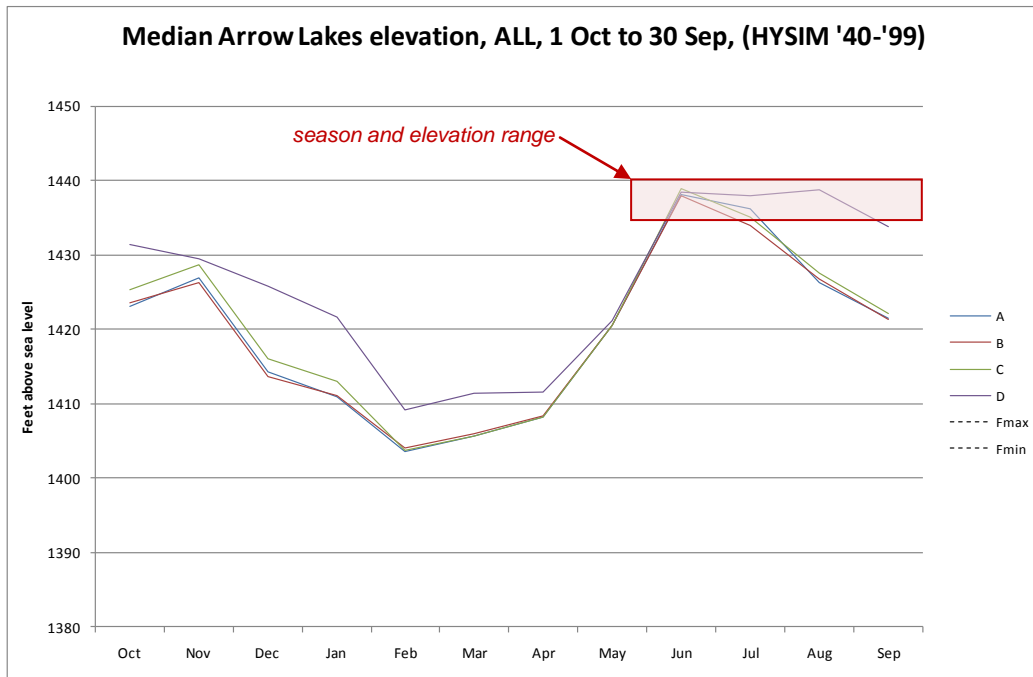


Figure 1. HYSIM Simulated Arrow Lakes Reservoir Elevations. Median result over 60 years showing the preferred elevation target and season for recreation.

Results

Regardless of the statistics considered, scenario D (no NTS) would perform significantly better for recreation interests on Arrow Lakes Reservoir than the “with NTS” scenarios (A, B and C).

Figure 2. Recreation – HYSIM Results for all NTS scenarios

