Bear River Basin Climate and Hydrology Scenarios

Time frame: 2041-2070 compared to 1971-2000
IPCC SRES Emissions Scenario: A2 ("medium-high emissions")
Hydrology modeling output is based on "natural flows," unaltered by diversions and reservoir storage, but the modeling output does not take into account groundwater-surface water interactions

Main Scenario

Season	Precip %	Temp °C	Temp °F	Runoff	Snowpack	Seasonal Flows
Annual	1.6	3.5	6.3	5-18% decrease, with runoff timing arriving earlier by 1-3 weeks	Later fall accumulation, with –10 to –15% lower peak accumulation, and melt out arriving 2-4 weeks earlier	Summer low flows –10%, Summer high flows –25% Winter flows increase by 30-50%, due to an increasing fraction of winter precipitation coming as rain
Winter	13	2.5	4.5			
Spring	-6	3.5	6.3			
Summer	-15	4.5	8.1			
Fall	0	3.5	6.3			

Alternative Scenario

Season	Precip %	Temp °C	Temp °F	Runoff	Snowpack	Seasonal Flows
Annual	-3	2.7	4.9	5-13% decrease, with runoff timing arriving earlier by 1-2 weeks	Later fall accumulation, with –15 to –20% lower peak accumulation, and melt out arriving 2-4 weeks earlier	Summer low flows –15%, Summer high flows –50% Winter flows increase by 30-50%, due to an increasing fraction of winter precipitation coming as rain
Winter	-5	2.7	4.9			
Spring	10	2.0	3.6			
Summer	-20	3.0	5.4			
Fall	3	3.0	5.4			