Procedure for Determining Flood Control Draft at Brownlee Reservoir, November 1998

Tabular Format

Based on April-August runoff forecasts for The Dalles and April-July runoff forecasts for Brownlee Reservoir.

Space Required (KAF)	Volume Forecast (MAF)			
	TDA ≤ 75			
	BRN ≤ 3	BRN = 4	BRN = 5	BRN ≥ 6
28 Feb	0	200	300	400
31 Mar	0	100	200	350
15 Apr	0	50	150	250
30 Apr	0	0	50	150
	TDA = 85			
Space Required (KAF)	BRN ≤ 3	BRN = 4	BRN = 5	BRN ≥ 6
28 Feb	150	300	350	400
31 Mar	100	300	400	450
15 Apr	50	250	400	500
30 Apr	0	250	400	500
	TDA = 95			
Space Required (KAF)	BRN ≤ 3	BRN = 4	BRN = 5	BRN ≥ 6
28 Feb	200	300	350	400
31 Mar	150	300	400	500
15 Apr	100	300	425	550
30 Apr	50	300	450	600
	TDA = 105			
Space Required (KAF)	BRN ≤ 3	BRN = 4	BRN = 5	BRN ≥ 6
28 Feb	300	400	400	400
31 Mar	200	425	475	500
15 Apr	150	450	525	600
30 Apr	100	450	550	700
	TDA ≥ 115			
Space Required (KAF)	BRN ≤ 3	BRN = 4	BRN = 5	BRN ≥ 6
28 Feb	300	400	500	500
31 Mar	250	450	600	750
15 Apr	200	500	650	850
30 Apr	150	550	750	980

Notes. The procedure for determining flood control drafts at Brownlee is applicable for the target periods extending from January 31 to April 30 to facilitate regulation of the spring flood season on both the lower Snake and Columbia Rivers. Forecasts from both The Dalles and Brownlee are the two variables used to calculate Brownlee draft volumes for target dates extending through the spring runoff season. Interpolation of these runoff forecasts may be necessary at both locations. If the April-August runoff forecast at The Dalles is less than 75 MAF, equal to 85, 95, or 105 MAF, or greater than 115 MAF, then interpolation of forecasts are necessary only at Brownlee. If the April-July runoff forecast for Brownlee is less than 3 MAF, equal to 4 or 5 MAF, or greater than 6 MAF, then interpolation of forecasts is necessary only at The Dalles. If the April-July runoff forecast for Brownlee does not lie at either of the volumes specified above, then interpolation of runoff forecasts is necessary at both locations.

1. Determine the 4 lines of interpolation from the forecasts of The Dalles and Brownlee for a specified target date. For example, a 30 April forecast of 88 MAF for April-August at The Dalles, and 4.2 MAF for April-July at Brownlee would produce the four following interpolation lines:

   a. TDA=85, BRN=4, FC=250   c. TDA=95, BRN=4, FC=300
   b. TDA=85, BRN=5, FC=400   d. TDA=95, BRN=5, FC=450

2. Interpolate between the two different The Dalles April-August runoff volumes for the same April-July runoff volume for Brownlee. For example, interpolate between TDA=85, BRN=4 and TDA=95, BRN=4:

   $$(88-85/95-85)*(300-250) + 250 = 265 \text{ kaf}$$

3. Interpolate between the same two runoff volumes for April-August at The Dalles in step 2, but use the higher Brownlee April-July runoff volume than in step 2. For example, interpolate between TDA=85, BRN=5 and TDA=95, BRN=5:

   $$(88-85/95-85)*(450-400) + 400 = 415 \text{ kaf}$$

4. Interpolate between the draft values obtained from step 2 and step 3 to determine the draft or space required at Brownlee for the specified target date. For example:

   $$(4.2-4.0/5.0-4.0)*(415-265) + 265 = 295 \text{ kaf}$$