

# RECLAMATION

## *Managing Water in the West*

### **WIND RIVER BASIN RESERVOIR OPERATIONS**

Water Supply Forecasts and Reservoir Operations

Prepared February 2019

**End of December Storage:** Bull Lake: 81,994 acre-feet

Pilot Butte: 27,861 acre-feet

#### **Bull Lake Actual Inflows (1,000 acre-feet):**

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
February 18	2.3	138
March 18	2.7	135
April 18	5.6	138
May 18	48.4	169
June 18	77.9	125
July 18	42.7	95
August 18	18.4	95
September 18	5.2	53
October 18	4.3	68
November 18	1.8	53
December 18	1.0	40
January 19	0.9	41

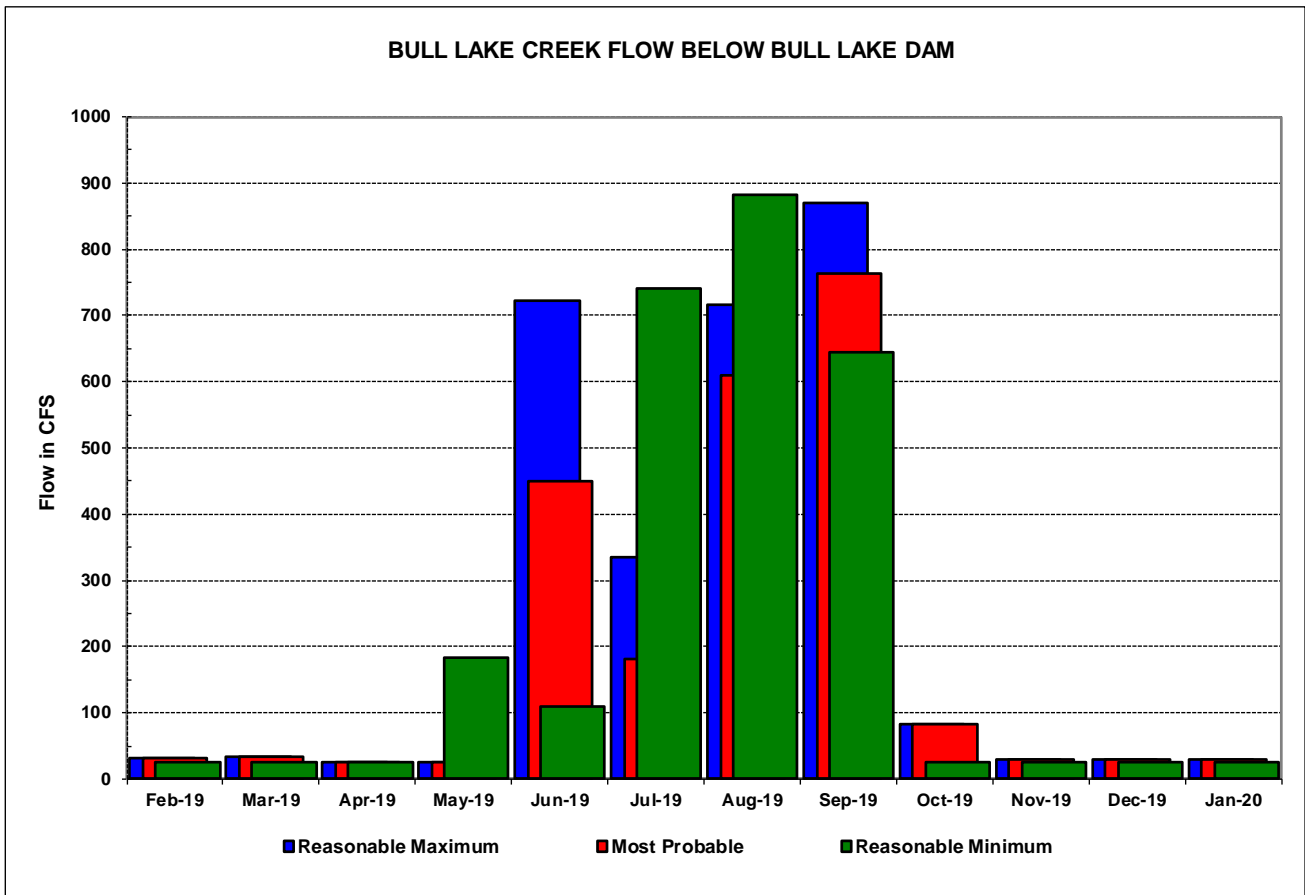
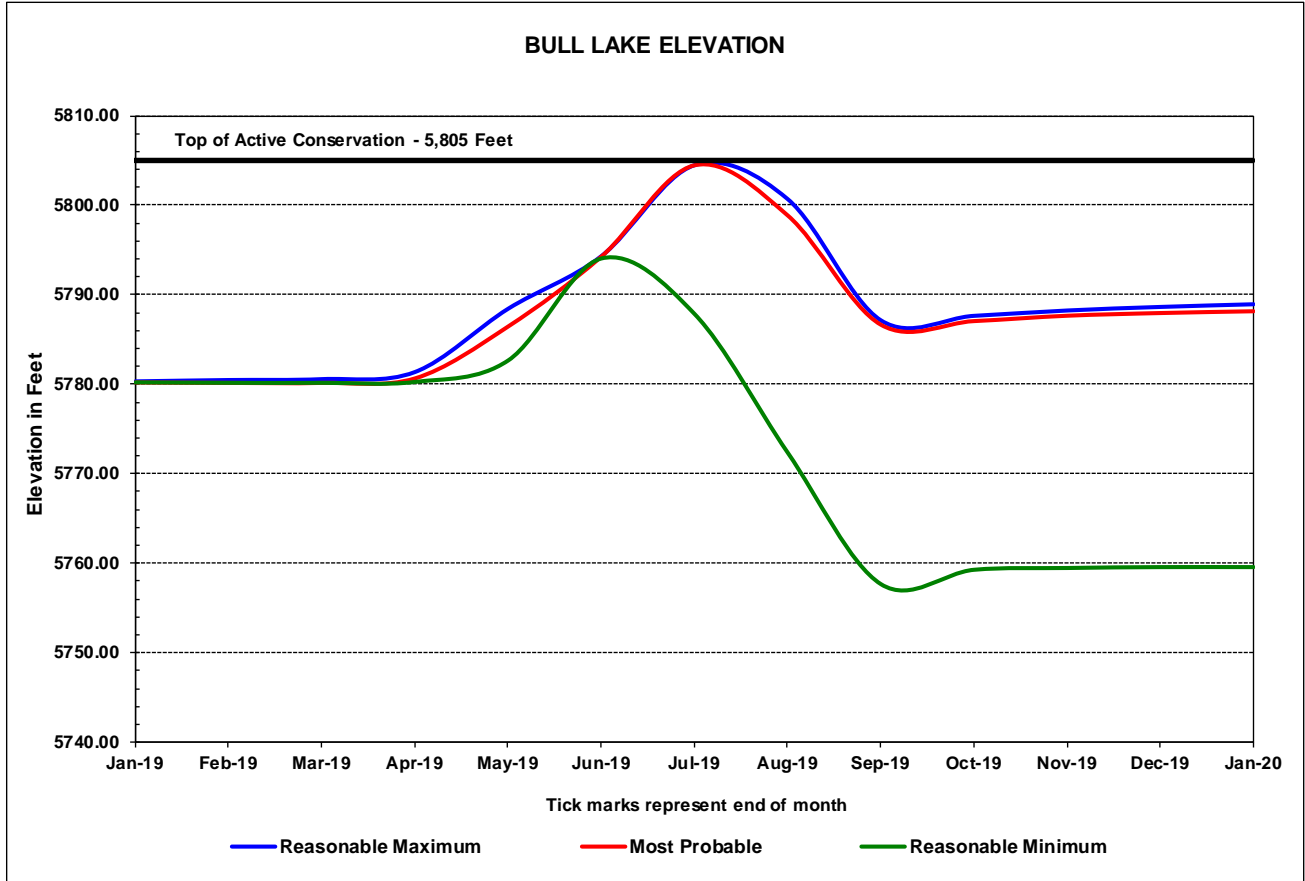
#### **Wind River above Bull Lake Creek Actual Flows (1,000 acre-feet):**

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
February 18	36.3	n/a
March 18	19.7	n/a
April 18	12.1	n/a
May 18	215.6	236
June 18	367.1	199
July 18	200.7	174
August 18	67.1	133
September 18	38.1	109
October 18	28.4	87
November 18	26.6	113
December 18	21.1	118
January 19	23.1	147



U.S. Department of the Interior  
 Bureau of Reclamation  
 Great Plains Region  
 Wyoming Area Office  
 Mills, Wyoming

# BULL LAKE RESERVOIR



Based on Expected April-July runoff of: Bull Lake - 110 kaf / Wind River ab Bull Lake Creek - 350 kaf / Riverton - 107 kaf  
 This plan assumes an annual demand of 162 KAF for the North Canal and 182 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN  
 Year Beginning Feb 2019

Bull Lake Reservoir Operations		Initial Content		82.0 Kaf		Operating Limits: Max		151.7 Kaf, 5804.76 Ft.		Min		20.0 Kaf, 5750.93 Ft.		Total
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Reservoir Inflow	kaf	1.7	2.0	2.7	16.7	48.5	42.1	20.2	10.5	6.2	3.4	2.6	2.6	159.2
Total Dam Release	kaf	1.7	2.0	1.5	1.6	26.8	11.1	37.5	45.4	5.1	1.8	1.8	1.8	138.2
Total Dam Release	cfs	31.	33.	25.	26.	450.	181.	610.	763.	83.	30.	30.	30.	
Excess Release	kaf	0.0	0.0	0.0	0.0	25.3	9.6	0.0	0.0	0.0	0.0	0.0	0.0	34.9
End-month Content	kaf	82.0	81.9	83.2	98.3	120.0	151.0	133.7	98.8	99.9	101.5	102.3	103.0	
End-month Elevation	ft	5780.2	5780.2	5780.7	5786.5	5794.3	5804.5	5798.9	5786.7	5787.1	5787.7	5788.0	5788.2	
BLR Net Change	kaf	0.0	0.0	1.2	15.1	21.7	31.0	-17.3	-34.9	1.1	1.6	0.8	0.8	21.0
Wind River		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Flow abv BL Creek	kaf	15.3	17.7	13.9	68.4	168.1	99.7	52.2	36.1	34.8	25.0	18.9	16.4	566.5
Crowheart Gage Flow	kaf	17.0	19.7	15.4	70.0	194.9	110.8	89.7	81.5	39.9	26.8	20.7	18.2	704.7
Flow Below Div Dam	kaf	17.0	19.7	4.7	21.9	117.2	30.3	30.6	20.9	29.7	26.8	20.7	18.2	357.8
Gain/Return Flow	kaf	0.0	0.0	4.8	7.4	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	38.2
Indian Irrigation	kaf	0.0	0.0	1.8	6.1	6.0	6.1	5.5	4.5	0.0	0.0	0.0	0.0	30.0
LeClair/Riverton	kaf	0.0	0.0	3.5	18.8	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	306.5	320.9	70.0	70.0	1582.7	70.0	165.0	114.0	483.1	450.1	337.4	296.7	
Wyoming Canal		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Total Diversion	kaf	0.0	0.0	10.7	48.1	77.7	80.5	59.1	60.6	10.2	0.0	0.0	0.0	346.9
North Canal Flow	kaf	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	0.0	0.0	0.0	0.0	161.8
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Butte Reservoir Operations		Initial Content		27.9 Kaf		Operating Limits: Max		29.9 Kaf, 5459.98 Ft.		Min		10.0 Kaf, 5433.49 Ft.		Total
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Reservoir Inflow	kaf	0.0	0.0	0.9	21.7	46.5	44.0	28.2	33.6	10.2	0.0	0.0	0.0	185.1
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	0.0	0.0	0.0	0.0	182.4
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	27.8	27.6	21.6	15.0	28.0	27.6	18.0	18.0	28.0	27.8	27.7	27.6	
PBR Net Change	kaf	-0.1	-0.2	-6.0	-6.6	13.0	-0.4	-9.6	0.0	10.0	-0.2	-0.1	-0.1	-0.3
End-month Elevation	ft	5457.6	5457.4	5450.2	5441.3	5457.8	5457.4	5445.5	5445.5	5457.8	5457.6	5457.5	5457.4	

Based on Minimum April-July runoff of: Bull Lake - 85 kaf / Wind River ab Bull Lake Creek - 225 kaf / Riverton - 17 kaf  
 This plan assumes an annual demand of 162 KAF for the North Canal and 182 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN  
 Year Beginning Feb 2019

Bull Lake Reservoir Operations		Initial Content 82.0 Kaf												Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.	
-----		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
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Reservoir Inflow	kaf	1.2	1.6	1.7	17.4	37.9	28.0	15.3	7.5	4.5	2.0	1.7	1.6	120.4	
Total Dam Release	kaf	1.4	1.5	1.5	13.1	6.5	45.5	54.3	38.3	1.5	1.5	1.5	1.5	168.1	
Total Dam Release	cfs	25.	25.	25.	213.	109.	740.	883.	644.	25.	25.	25.	25.		
Excess Release	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
End-month Content	kaf	81.8	81.9	82.1	86.4	117.8	100.4	61.3	30.6	33.5	34.0	34.2	34.3		
End-month Elevation	ft	5780.2	5780.2	5780.3	5782.0	5793.5	5787.3	5771.7	5756.8	5758.3	5758.6	5758.7	5758.7		
BLR Net Change	kaf	-0.2	0.1	0.2	4.3	31.4	-17.5	-39.0	-30.8	3.0	0.5	0.2	0.1	-47.7	
Wind River		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
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Flow abv BL Creek	kaf	13.7	16.5	15.3	55.5	92.4	61.7	36.1	29.2	29.0	21.4	17.2	15.0	403.0	
Crowheart Gage Flow	kaf	15.1	18.0	16.8	68.6	98.9	107.2	90.4	67.5	30.5	22.9	18.7	16.5	571.1	
Flow Below Div Dam	kaf	15.1	18.0	4.7	21.9	27.2	30.3	21.7	15.6	12.3	22.9	18.7	16.5	224.9	
Gain/Return Flow	kaf	0.0	0.0	4.8	7.4	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	38.2	
Indian Irrigation	kaf	0.0	0.0	1.8	6.1	6.0	6.1	2.5	1.8	0.0	0.0	0.0	0.0	24.3	
LeClair/Riverton	kaf	0.0	0.0	3.5	18.8	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	109.8	
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Riverton Gage Flow	cfs	271.7	293.3	70.0	70.0	70.0	70.0	70.0	70.0	200.6	384.6	304.7	269.0		
Wyoming Canal		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
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Total Diversion	kaf	0.0	0.0	12.1	46.7	71.7	76.9	68.7	51.9	18.2	0.0	0.0	0.0	346.2	
North Canal Flow	kaf	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	0.0	0.0	0.0	0.0	161.8	
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pilot Butte Reservoir Operations		Initial Content 27.9 Kaf												Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.	
-----		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total	
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Reservoir Inflow	kaf	0.0	0.0	2.3	20.3	40.5	40.4	37.8	24.9	18.2	0.0	0.0	0.0	184.4	
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Pilot Canal Release	kaf	0.0	0.0	6.7	28.0	33.1	43.9	37.4	32.6	0.0	0.0	0.0	0.0	181.7	
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
End-month Content	kaf	27.8	27.6	23.0	15.0	22.0	18.0	18.0	10.0	28.0	27.8	27.7	27.6		
PBR Net Change	kaf	-0.1	-0.2	-4.6	-8.0	7.0	-4.0	0.0	-8.0	18.0	-0.2	-0.1	-0.1	-0.3	
End-month Elevation	ft	5457.6	5457.4	5451.9	5441.3	5450.7	5445.5	5445.5	5433.5	5457.8	5457.6	5457.5	5457.4		

Based on Maximum April-July runoff of: Bull Lake - 135 kaf / Wind River ab Bull Lake Creek - 475 kaf / Riverton - 257.1 kaf  
 This plan assumes an annual demand of 162 KAF for the North Canal and 182 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN  
 Year Beginning Feb 2019

Bull Lake Reservoir Operations		Initial Content		82.0 Kaf		Operating Limits: Max		151.7 Kaf, 5804.76 Ft.		Min		20.0 Kaf, 5750.93 Ft.		Total
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
Reservoir Inflow	kaf	2.0	2.5	3.3	20.5	59.5	51.6	32.1	12.7	6.4	3.5	2.9	2.5	199.5
Total Dam Release	kaf	1.7	2.0	1.5	1.5	43.0	20.6	44.1	51.7	5.1	1.8	1.8	1.8	176.8
Total Dam Release	cfs	31.	33.	25.	25.	723.	335.	717.	869.	83.	30.	30.	30.	
Excess Release	kaf	0.0	0.0	0.0	0.0	41.5	19.1	7.5	14.8	0.0	0.0	0.0	0.0	82.9
End-month Content	kaf	82.3	82.7	84.6	103.5	120.0	151.0	139.0	100.0	101.3	103.0	104.1	104.7	
End-month Elevation	ft	5780.4	5780.5	5781.3	5788.4	5794.3	5804.5	5800.7	5787.1	5787.6	5788.2	5788.6	5788.9	
BLR Net Change	kaf	0.3	0.5	1.8	19.0	16.5	31.0	-12.0	-39.0	1.3	1.7	1.1	0.7	22.7
Wind River		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Flow abv BL Creek	kaf	16.1	20.5	18.8	92.8	228.1	135.2	78.6	44.6	37.0	25.9	20.3	19.0	736.9
Crowheart Gage Flow	kaf	17.8	22.5	20.3	94.3	271.1	155.8	122.7	96.3	42.1	27.7	22.1	20.8	913.7
Flow Below Div Dam	kaf	17.8	22.5	4.7	38.1	206.4	74.9	64.0	35.7	31.9	27.7	22.1	20.8	566.8
Gain/Return Flow	kaf	0.0	0.0	4.8	7.4	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	38.2
Indian Irrigation	kaf	0.0	0.0	1.8	6.1	6.0	6.1	5.5	4.5	0.0	0.0	0.0	0.0	30.0
LeClair/Riverton	kaf	0.0	0.0	3.5	18.8	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	320.9	366.4	70.0	334.4	3082.4	795.8	707.7	362.9	518.9	465.3	360.1	339.0	
Wyoming Canal		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total
Total Diversion	kaf	0.0	0.0	15.6	56.2	64.7	80.9	58.7	60.6	10.2	0.0	0.0	0.0	346.9
North Canal Flow	kaf	0.0	0.0	9.8	26.4	31.2	36.5	30.9	27.0	0.0	0.0	0.0	0.0	161.8
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Butte Reservoir Operations		Initial Content		27.9 Kaf		Operating Limits: Max		29.9 Kaf, 5459.98 Ft.		Min		10.0 Kaf, 5433.49 Ft.		Total
		Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
Reservoir Inflow	kaf	0.0	0.0	5.8	29.8	33.5	44.4	27.8	33.6	10.2	0.0	0.0	0.0	185.1
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	0.0	0.0	6.7	28.0	33.1	43.9	37.4	33.3	0.0	0.0	0.0	0.0	182.4
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	27.8	27.6	26.5	28.0	28.0	28.0	18.0	18.0	28.0	27.8	27.7	27.6	
PBR Net Change	kaf	-0.1	-0.2	-1.1	1.5	0.0	0.0	-10.0	0.0	10.0	-0.2	-0.1	-0.1	-0.3
End-month Elevation	ft	5457.6	5457.4	5456.1	5457.8	5457.8	5457.8	5445.5	5445.5	5457.8	5457.6	5457.5	5457.4	