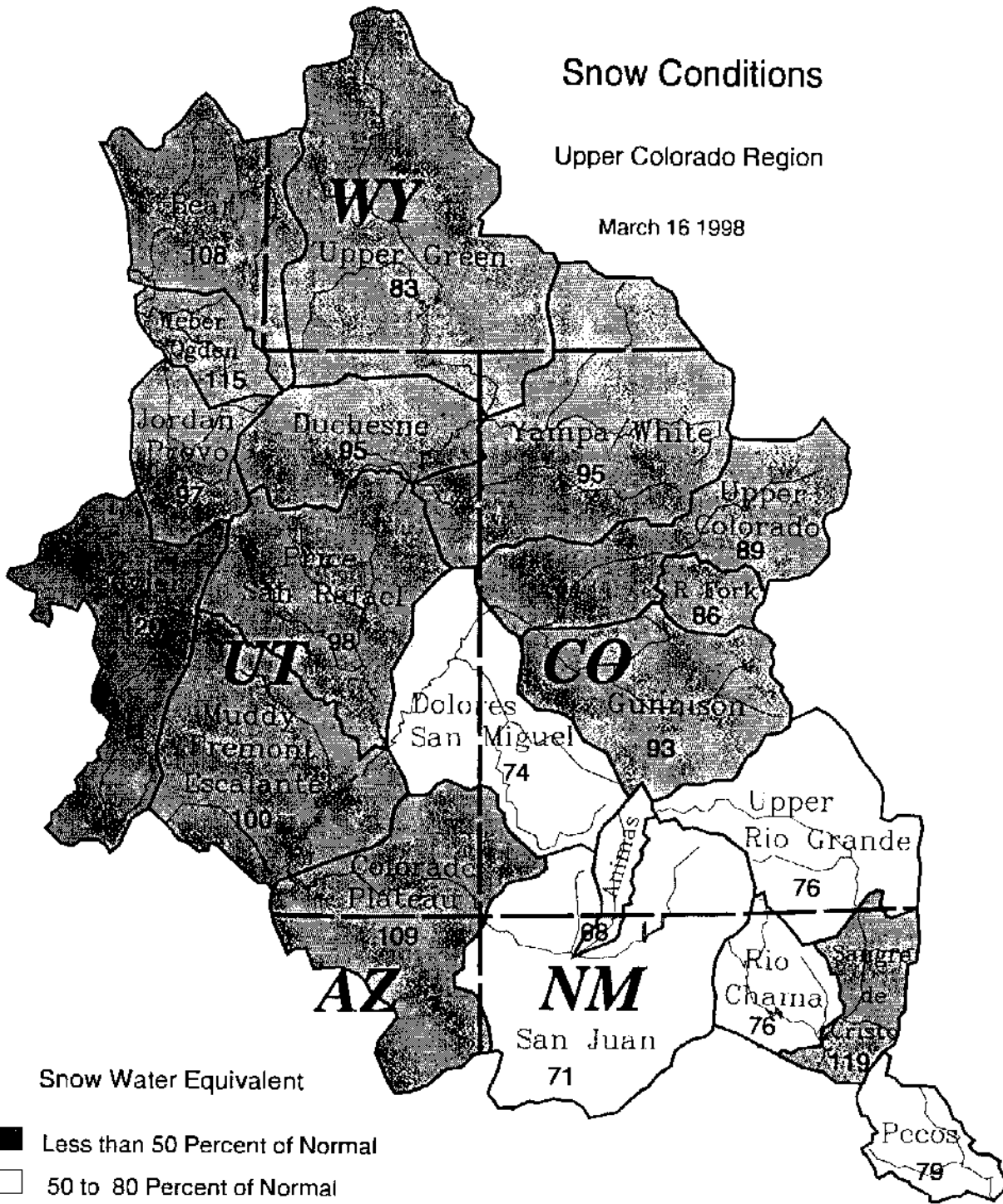


# Snow Conditions

Upper Colorado Region

March 16 1998



Snow Water Equivalent

- Less than 50 Percent of Normal
- 50 to 80 Percent of Normal
- 80 to 120 Percent of Normal
- 120 to 150 Percent of Normal
- Greater than 150 Percent of Normal

*Upper Colorado*  
**GIS**  
*Region*

From: oper on hp <oper@rocky.crbc.gov>  
 To: lbr4dm!0.lbr4smtp:"wcook@uc.usbr.gov", "tom@udsun1....  
 Date: 3/6/98 3:01pm  
 Subject: River Forecast Center ESPSLR forecast

#### SLRSPSLR CFW  
 TTAAGC KSLR DHHMM  
 :National Weather Service  
 :Colorado Basin River Forecast Center  
 :Salt Lake City Utah

:March Final Forecast                    March 6, 1998

:  
 \*\*: FINAL FORECASTS APPEAR APPROXIMATELY 7 DAYS AFTER PRELIMINARY FORECASTS \*\*

:  
 :B SLC 980801 M DR24/DC9803061800/DVM05/QCVFEE5/QCVFEE5/QCVFEE5

:FLOOD CONTROL RESERVOIR UNREGULATED INFLOW FORECASTS  
 :1 MARCH THROUGH 31 JULY 1998 (units: 1000's ACRE-FEET)

RESERVOIR	MOST PROBABLE	MAXIMUM	MINIMUM
GLDA3:LAKE MEAD	8340/	11940/	5380
GLDA3:LAKE POWELL	8000/	11290/	5210
NVRN5:NAVAJO RES	700/	1055/	450
VCR02:VALLECITO RES	171.5/	239.5/	100.5
DMDC2:BLUE MESA RES	863/	983/	428
GRNJ1:FLAMING GORGE	1165/	1775/	605

:  
 :END  
 :B SLC M DR24 /DC9803061800/  
 :B1 0Y980331 /QCMFEE5/DRE-1/QCMFEE5/DRE-2/QCMFEE5

MONTHLY DISTRIBUTION OF FLOW (1000's A F)

	OBS				Feb%AVG	FORECAST			OUTLOOK
	Nov	Dec	Jan	Feb		Mar	Apr	May	
GLDA3 :LAKE POWELL	674	567	469	335	105%	600/	965/	2140/	7400 96%
SAP02 :BLUE MESA	41	31	30	25	113%	33/	70/	195/	630 90%
MPSC2 :MORROW POINT						/	/	/	690 90%
CLSC2 :CRYSTAL UNREG**	48	39	38	e33	110%	42/	95/	250/	815 90%
GBRW4 :FONTENELLE	53	39	38	35	120%	30/	35/	155/	715 84%
GRNJ1 :FLAMING GORGE	76	46	38	34	110%	115/	170/	255/	1050 88%
VCR02 :VALLECITO	9.6	e7	e6	e4.7	115%	6.5/	19/	54/	165 84%
NVRN5 :NAVAJO UNREG	32	23	20	20	70%	65/	135/	230/	635 82%
VCR02 :vallecito chg st	3	3	2.5	1.5		2/	3/	42/	
CRUN5 :Azotea tunnel FL	0.5	0	0	0		/	15/	41/	
NVRN5 :NAVAJO REG LTD	34.5	23	19.5	18.5		62/	115/	147/	

:  
 : \* REGULATED FORECASTS ARE DERIVED FROM ANALYSING THE RECORD  
 : AND COMPARING IT TO AVERAGES. THESE FORECASTS HAVE AN  
 : ADDITIONAL SOURCE OF ERROR BECAUSE THE RESERVOIR AND TUNNEL  
 : OPERATORS MAY SUBSTANTIALLY DEVIATE FROM THE ESTIMATED  
 : REGULATION.  
 : \*\* UNREGULATED CRYSTAL INFLOW COMBINES BLUE MESA UNREGULATED  
 : INFLOW PLUS THE SIDE INFLOW TO BOTH MORROW POINT AND CRYSTAL

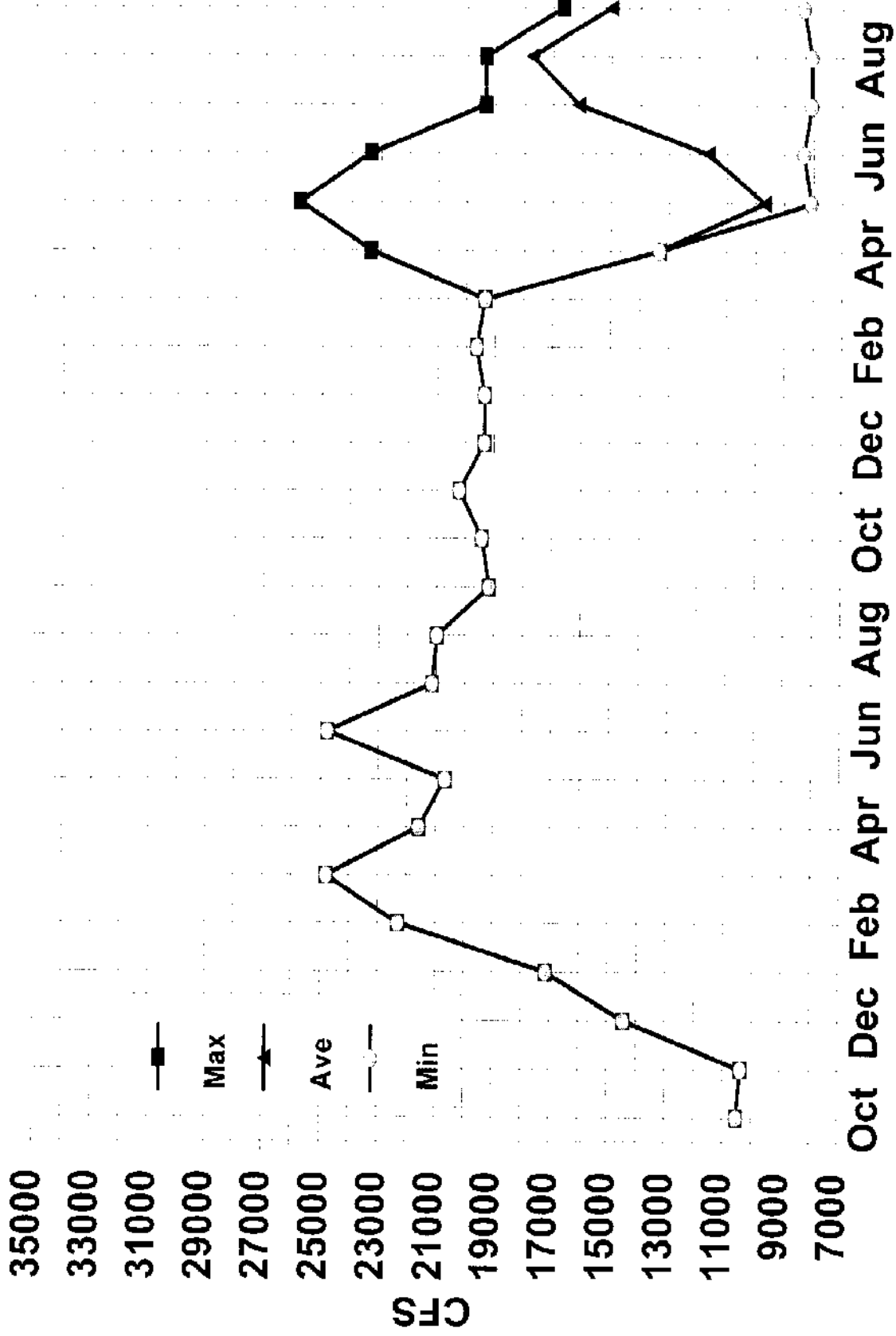
PRECIPITATION SUMMARY - 3 OF AVERAGE BY MONTH - WY 1998

RIVER BASIN:	OCT	NOV	DEC	JAN	FEB
GREEN					
ABV FLAMING GORGE	95	60	60	150	85
ABV GRN RVR,UT(TOTAL)	105	65	50	135	120
COLORADO					
ABV GRAND JUNCTION	150	90	45	105	95
GUNNISON BASIN	140	105	50	90	95
ABV CISCO (TOTAL)	140	95	50	100	95
SAN JUAN					
ABV BLUFF (TOTAL)	110	100	65	80	100

G. McCarthy/J. Smith/D. Van Cor  
 CBRFC (801-524-5130)  
 NNNN

# Glen Canyon Releases

1997 - 1998



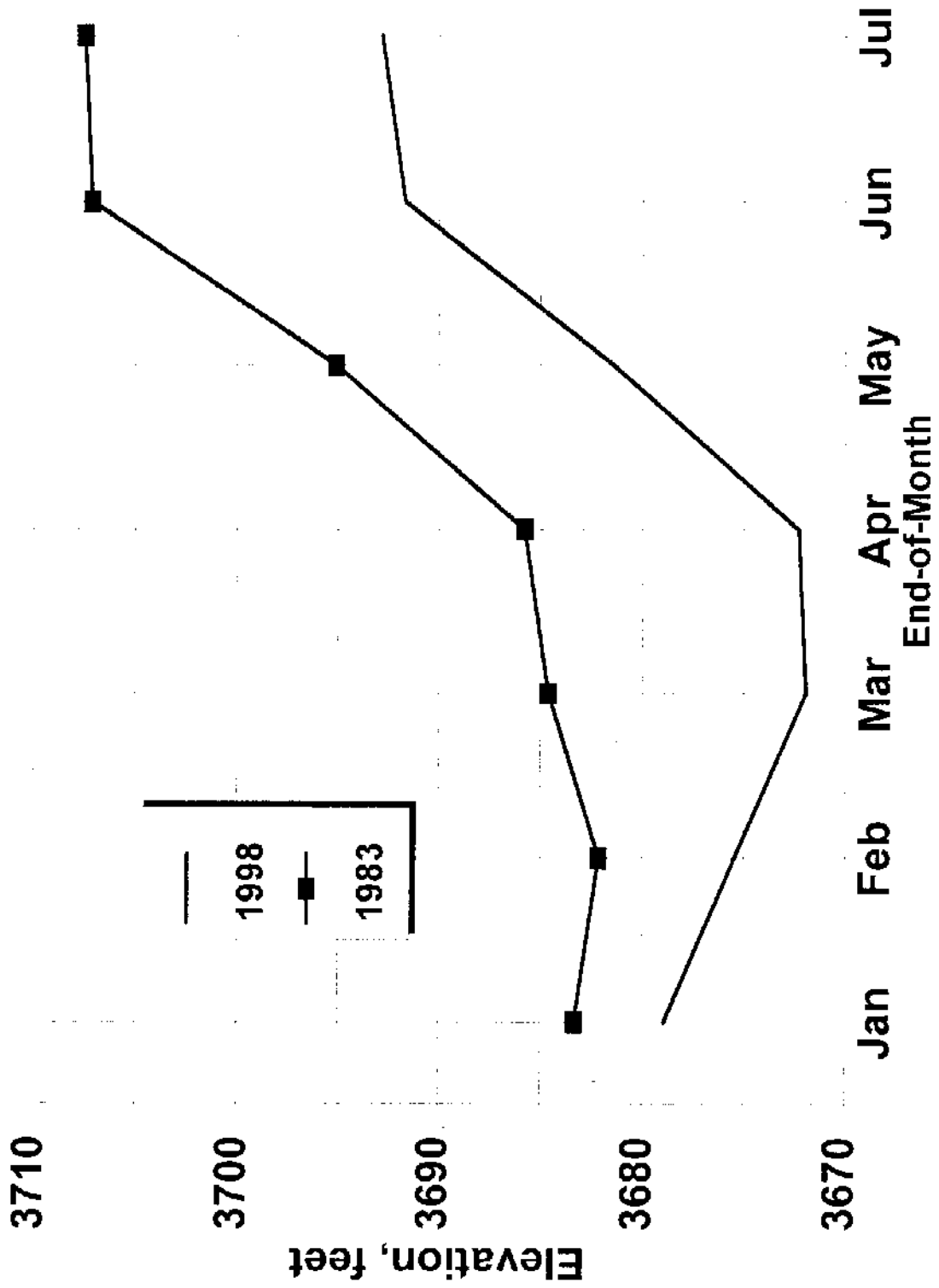
OPERATION PLAN FOR COLORADO RIVER SYSTEM RESERVOIRS

Glen Canyon - Lake Powell

Month Year	Unreg Inflow		Regulated Inflow		Evap Losses		Power Release		Bypass Release		Total Release		Bank Reservoir Storage		Live Storage		Lee Flow	
	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft	1000	Ac-Ft
* MAR 1997	1049		1063		23		1537		0		1537		17983		18918		1555	
H APR 1997	1267		1336		34		1295		0		1295		17800		19108		1332	
I MAY 1997	3544		3089		47		1282		0		1282		17580		21090		1506	
S JUN 1997	4977		4119		71		1486		0		1486		17848		23384			
T JUL 1997	1533		1527		76		1311		0		1311		18078		23293			
O AUG 1997	1063		918		86		1251		0		1251		18060		22892			
R SEP 1997	1038		1037		82		1142		0		1142		17964		22801			
R WY 1997	16832		16002		587		13785		0		13784							
I C OCT 1997	1035		1087		48		1205		0		1205		18044		22554			
A NOV 1997	674		841		41		1213		0		1213		18062		22123		1202	
L DEC 1997	567		814		36		1254		0		1254		18114		21595		1244	
* JAN 1998	469		668		25		1199		0		1199		18051		21103		1191	
* FEB 1998	433		574		27		1091		0		1091		17980		20630		1080	
MAR 1998	600		668		33		1200		0		1200		17938		20107			
APR 1998	965		893		37		800		0		800		17942		20159			
MAY 1998	2140		2065		51		600		0		600		18047		21468			
JUN 1998	2840		2425		62		700		0		700		18170		23008			
JUL 1998	1455		1264		72		1000		0		1000		18184		23186			
AUG 1998	590		629		74		1100		0		1100		18144		22682			
SEP 1998	473		563		63		900		0		900		18115		22311			
WY 1998	12241		12491		569		12262		0		12262							
OCT 1998	548		617		56		750		0		750		18100		22136			
NOV 1998	524		622		47		750		0		750		18088		21974			
DEC 1998	428		579		39		1000		0		1000		18053		21548			
JAN 1999	383		528		29		1100		0		1100		18009		20992			
FEB 1999	414		527		27		900		0		900		17979		20622			
MAR 1999	605		695		33		800		0		800		17969		20494			
APR 1999	1007		949		38		700		0		700		17985		20690			
MAY 1999	2239		1926		52		700		0		700		18072		21777			
JUN 1999	2968		2438		62		800		0		800		18188		23235			
JUL 1999	1521		1314		73		1200		0		1200		18192		23274			
AUG 1999	608		669		74		1200		0		1200		18147		22714			
SEP 1999	480		609		63		1000		0		1000		18113		22293			
WY 1999	11725		11473		593		10900		0		10900							
OCT 1999	548		631		56		800		0		800		18096		22085			
NOV 1999	524		650		47		800		0		800		18082		21903			
DEC 1999	428		598		39		1000		0		1000		18049		21495			
JAN 2000	383		538		29		1100		0		1100		18005		20948			
FEB 2000	429		549		27		900		0		900		17977		20598			

# Lake Powell Elevations

1998 vs 1983



# Probability of Spills from Glen Canyon Dam

Release volumes in MAF

		Difference between this and scheduled powerplant releases
Volume of scheduled releases Mar - Jul	4.3	0.0
Volume of releases at 20,000 cfs, Mar - Jul	6.0	1.7
Volume of releases at 20,000 cfs Mar - Jul, but with one month at 25,000 cfs	6.3	2.0
Volume of releases at 20,000 cfs Mar - Apr and 25,000 cfs, May - Jul	6.9	2.6
Volume of releases at powerplant capacity, 20,000 cfs Mar - Apr and 25,000 cfs May - Jul	8.0	3.7
	March 1 forecast error probabilities	Error volumes MAF
	5 %	3.3
	10 %	2.4
	20 %	1.5

# 1998 Lake Powell Operation

## Forecast, Snowpack and Inflow

