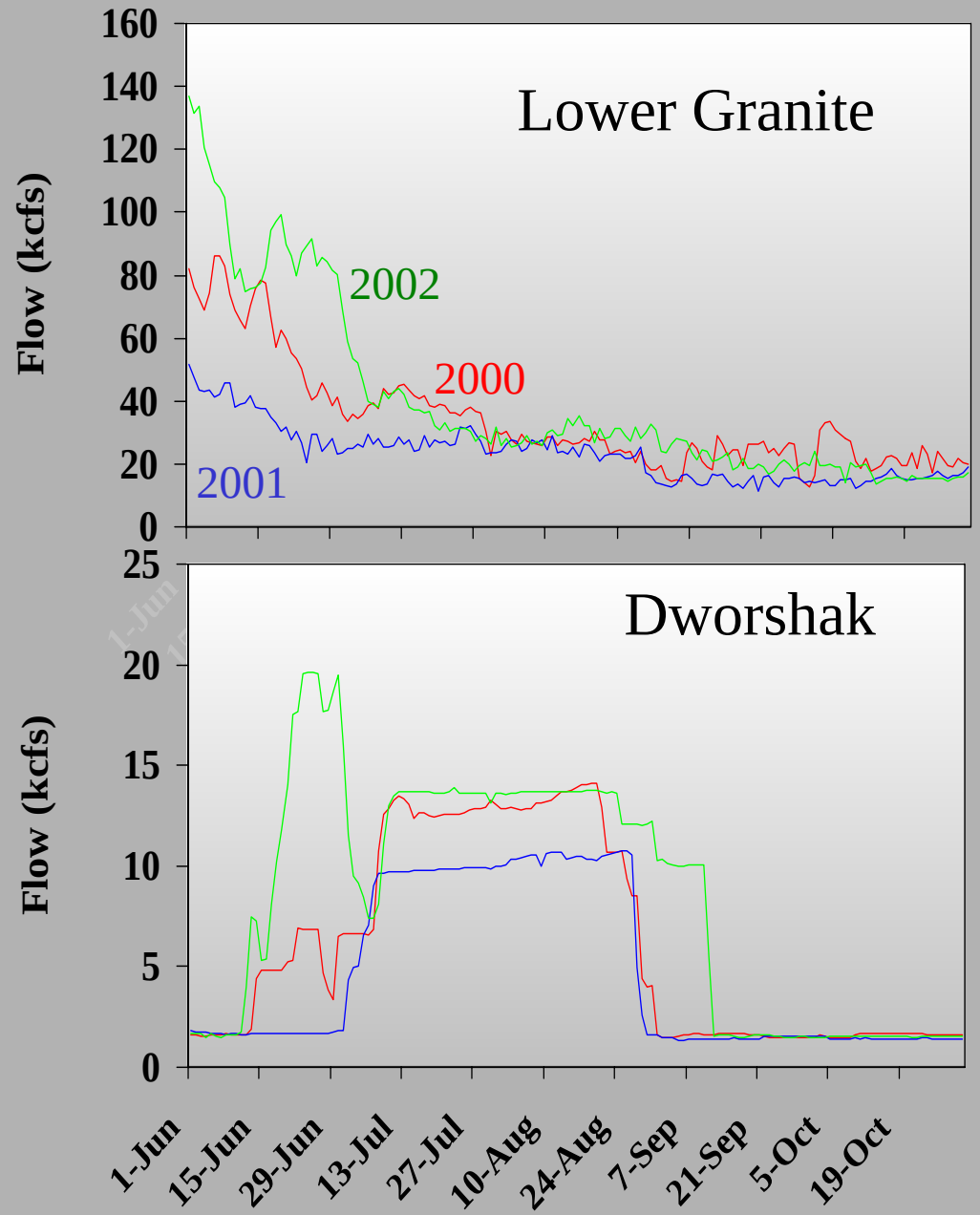
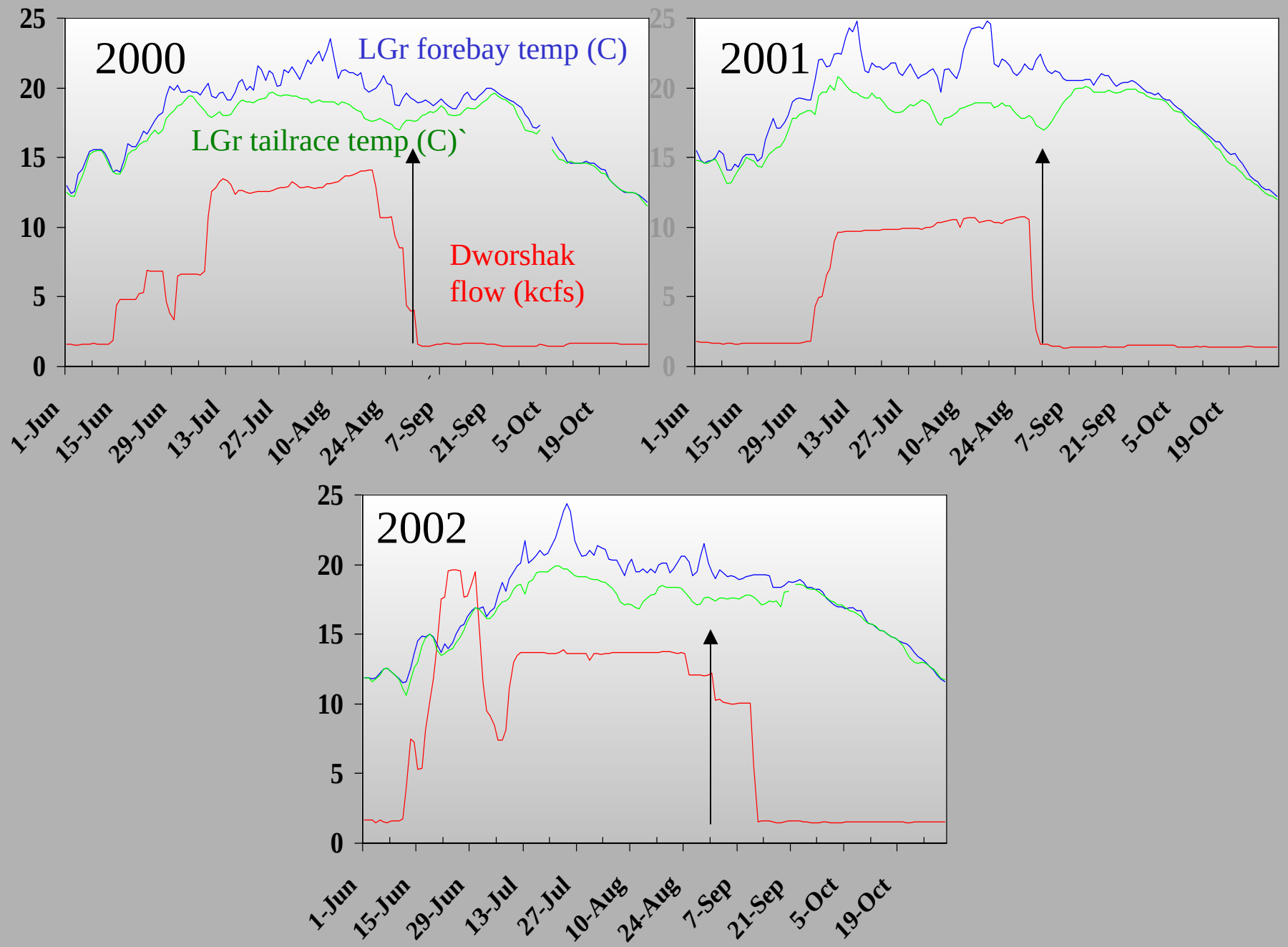
Effects of Dworshak Water on Passage of Adult Salmon And Steelhead: 2002 September Releases

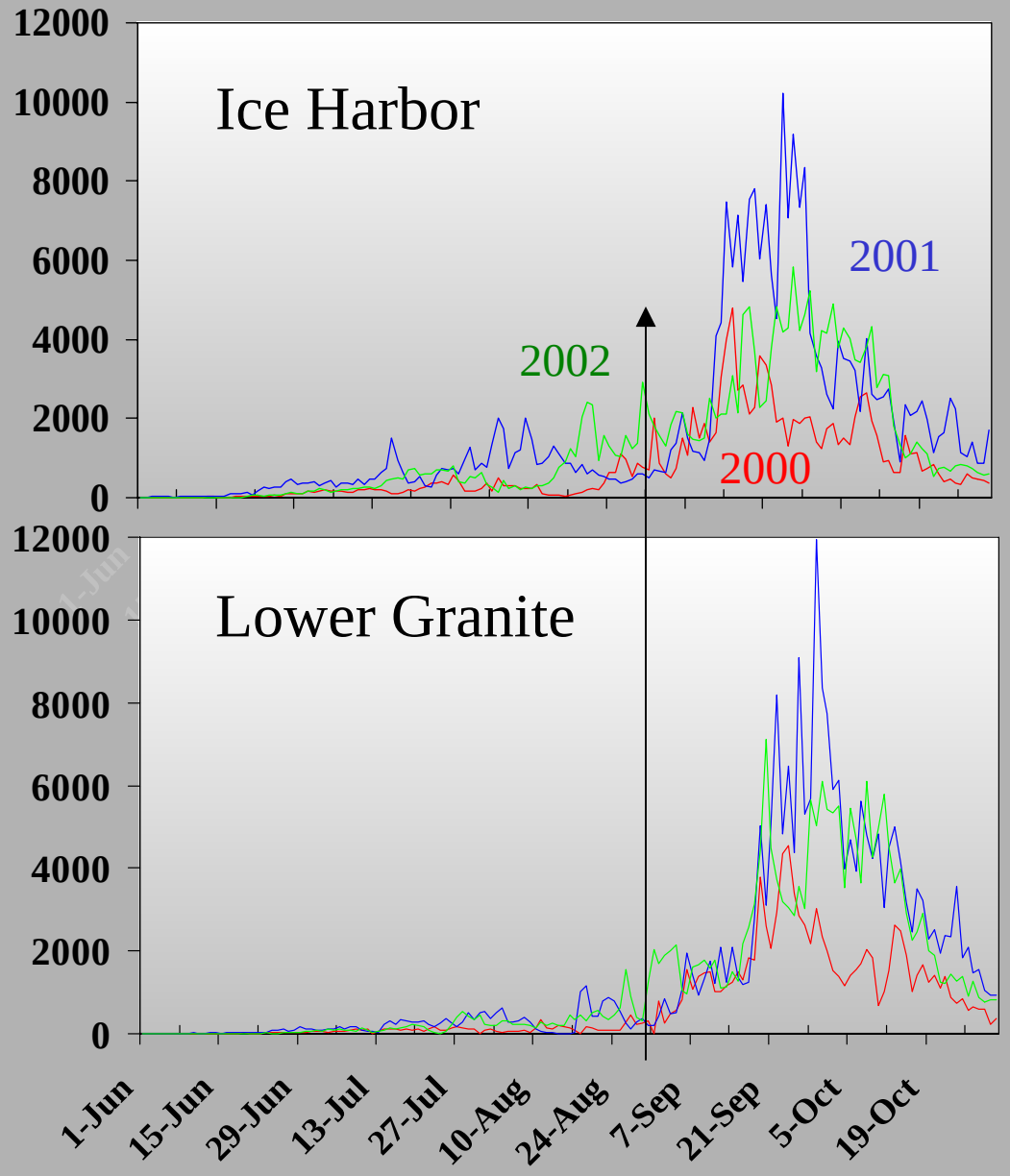
Chris Peery, Matt Keefer and Tami Reischel
Idaho Cooperative Fish and Wildlife Research Unit
University of Idaho

Flow at Lower Granite and Dworshak

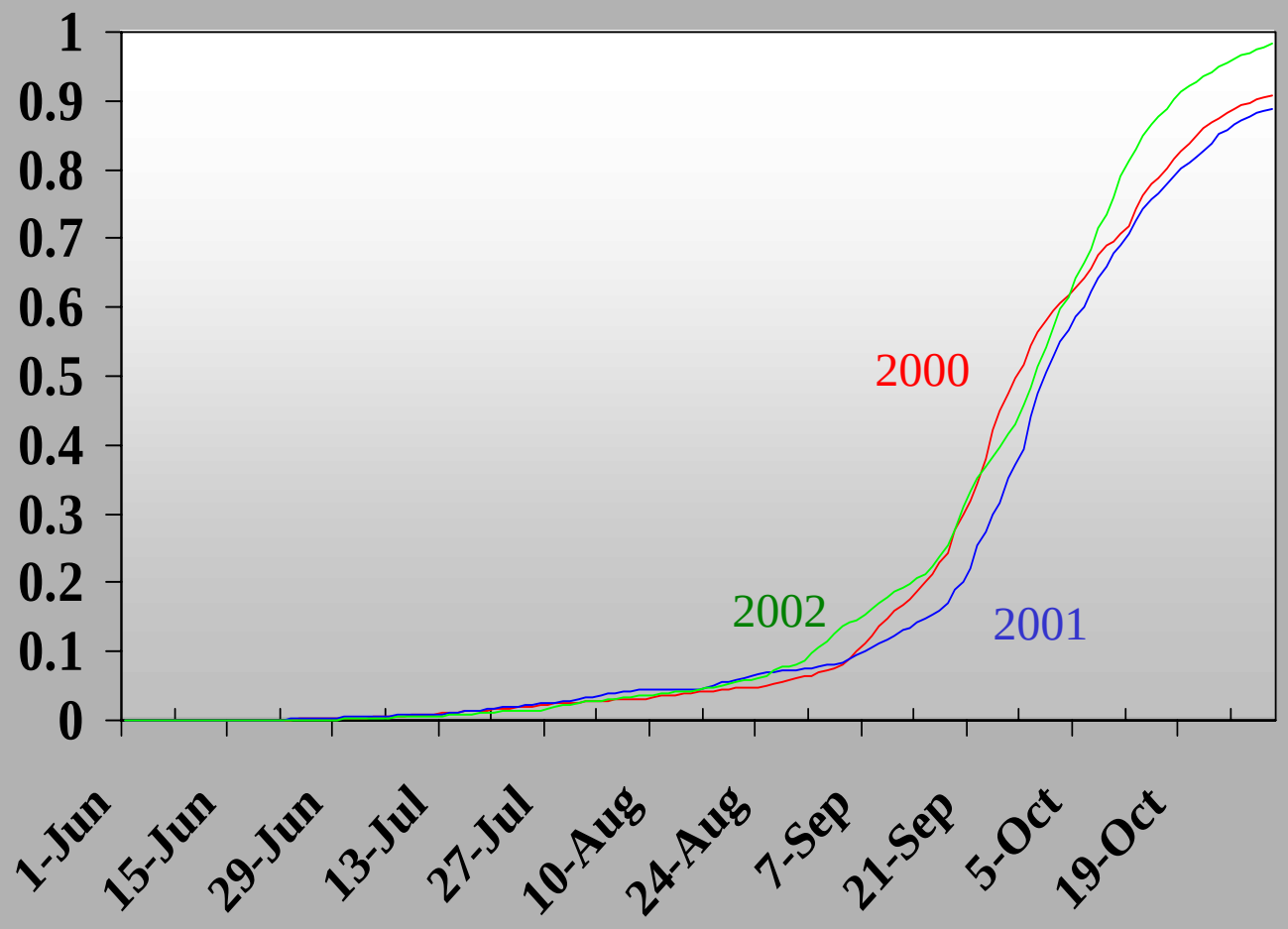



2000
LGr forebay temp (C)
LGr tailrace temp (C)`
Dworshak
flow (kcfs)
2001
2002
25
20
15
10
5
0
1-Jun
15-Jun
29-Jun
13-Jul
27-Jul
10-Aug
24-Aug
7-Sep
21-Sep
5-Oct
19-Oct

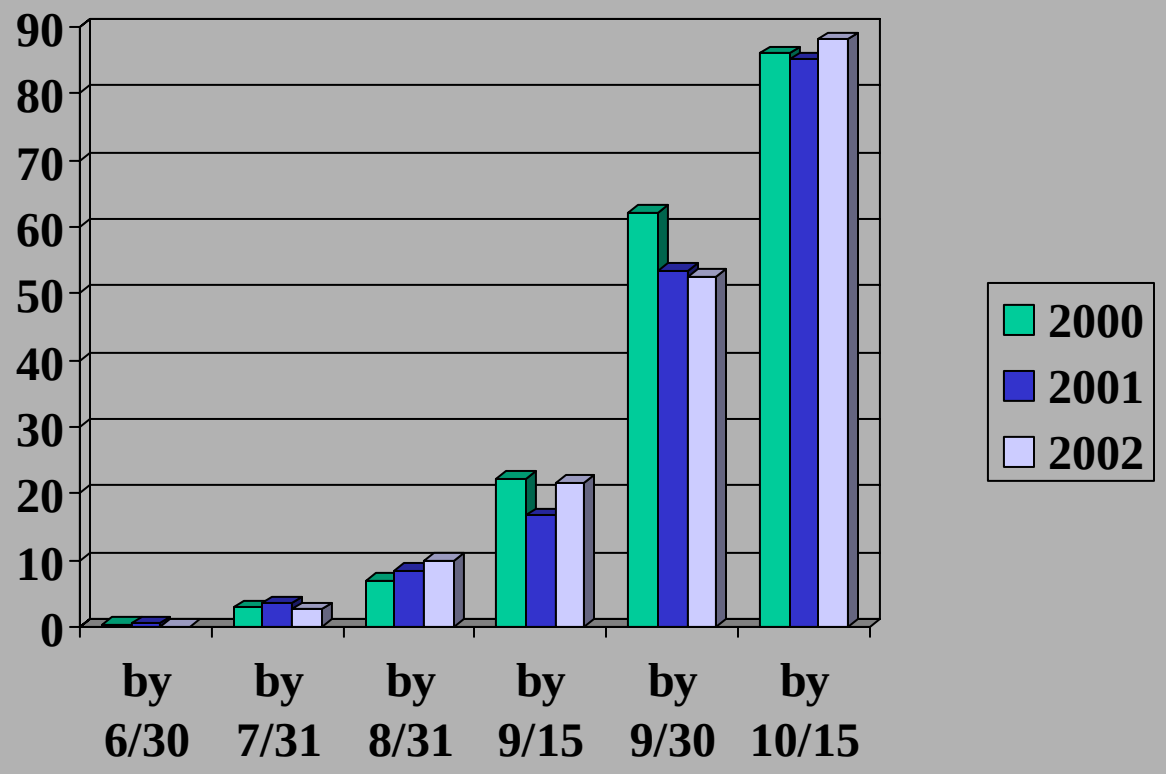
Adult steelhead counts through 31 Oct

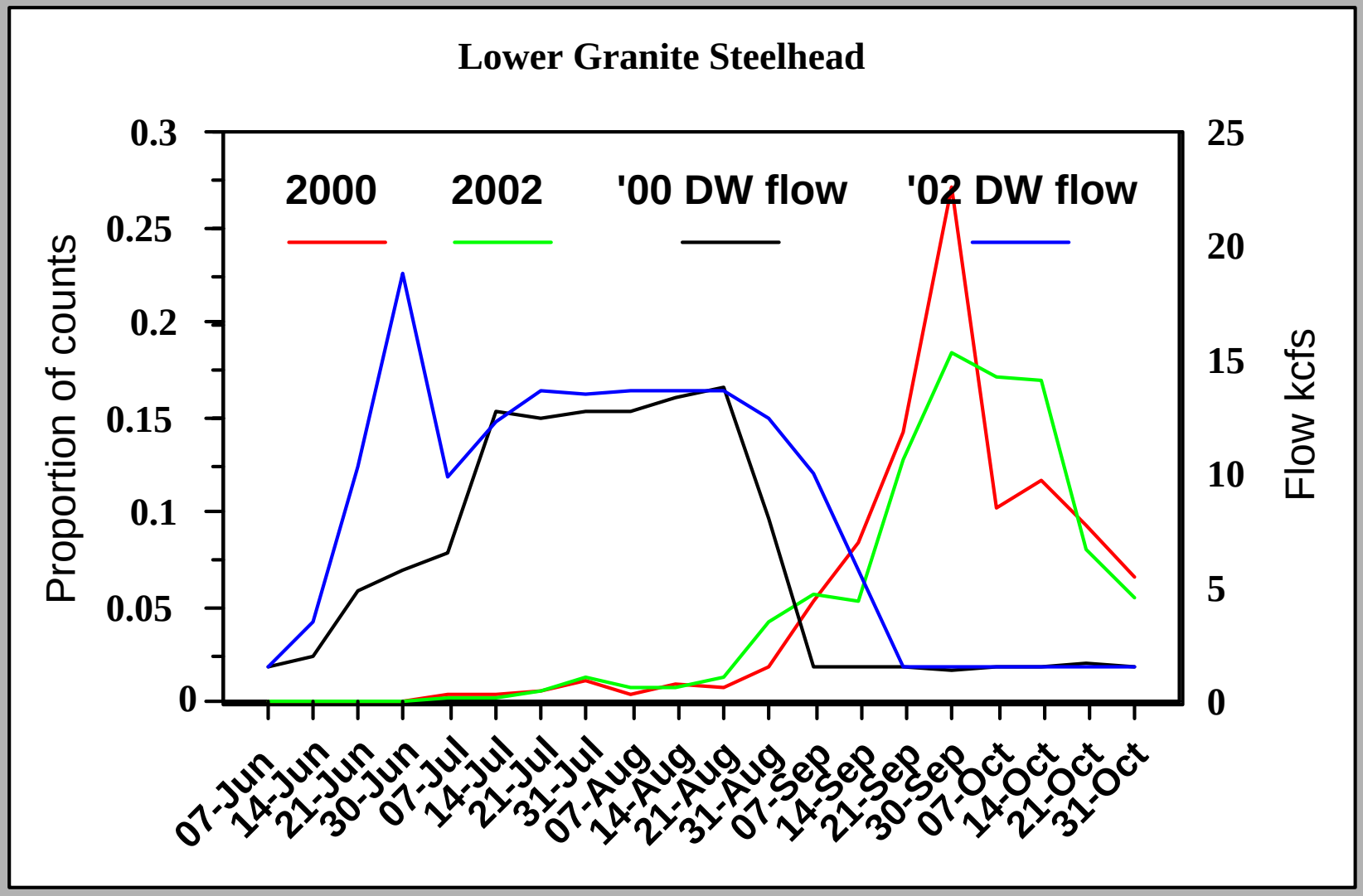


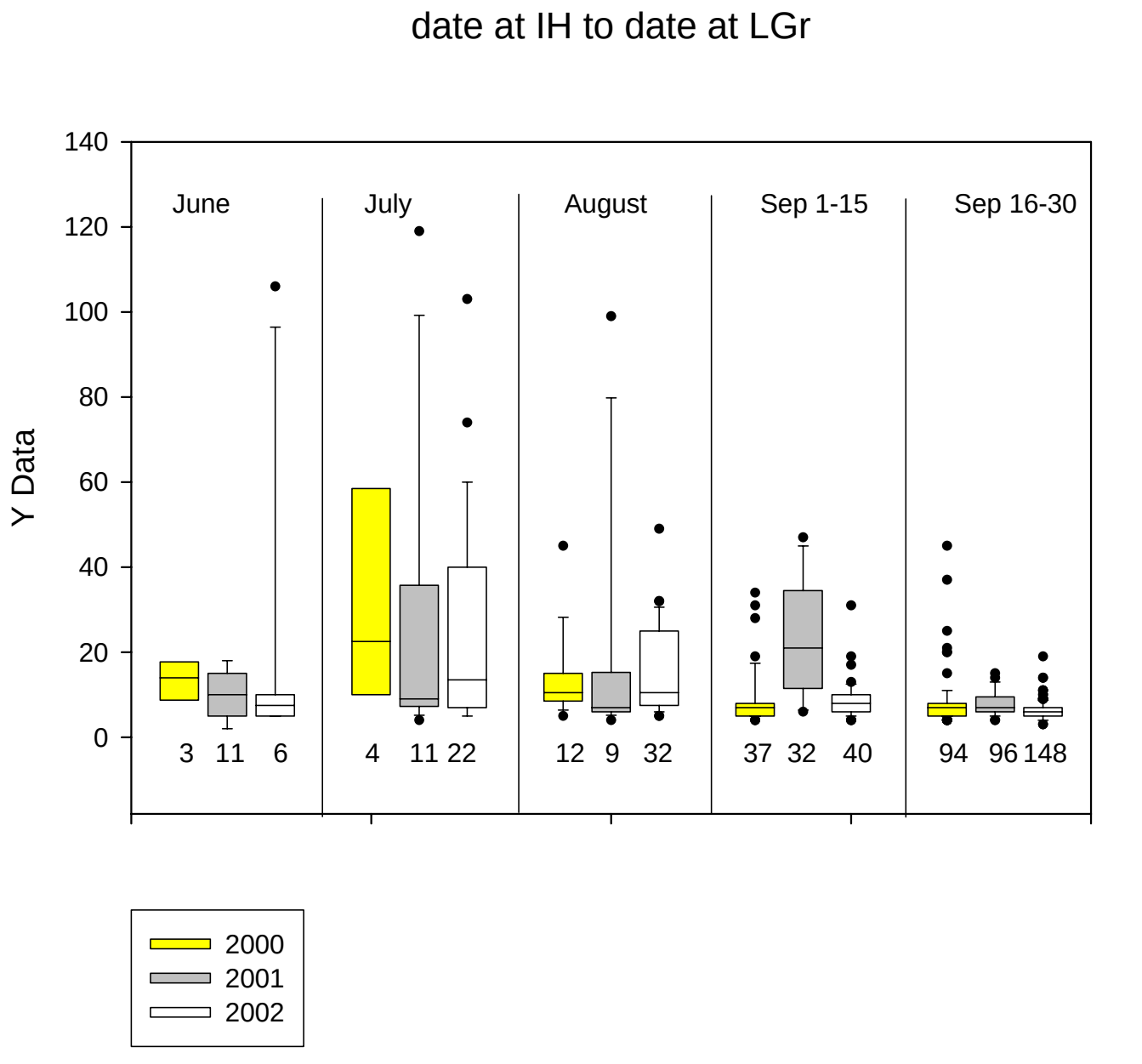
Proportion of IH count (through 31 Oct) that had passed LGr by dates



Proportion of GR count (through 31 Oct) that had passed by dates

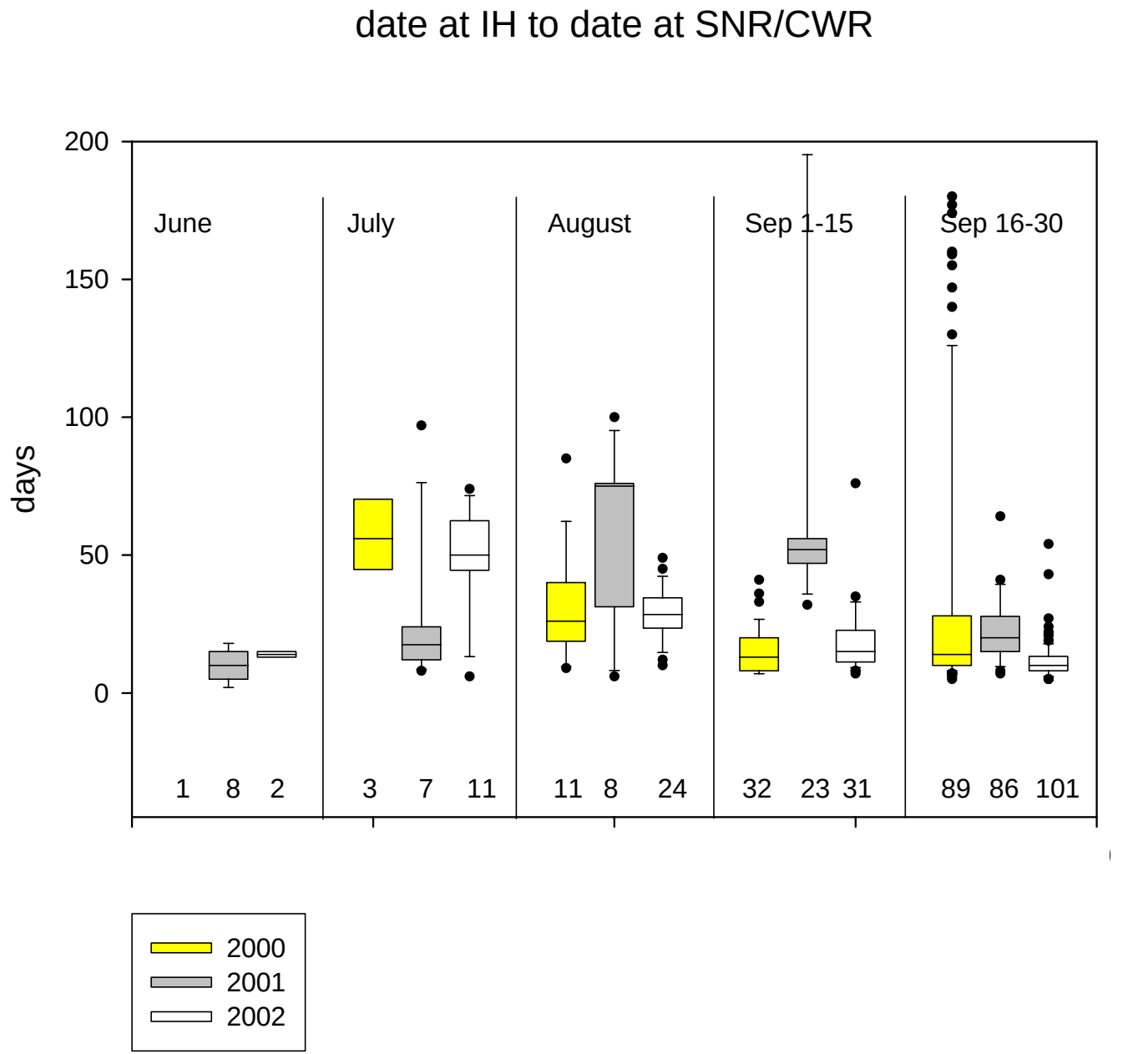



Lower Granite Steelhead
2000
2002
'00 DW flow
'02 DW flow
Proportion of counts
Flow kcfs
0.3
0.25
0.2
0.15
0.1
0.05
0
25
20
15
10
5
0
07-Jun
14-Jun
21-Jun
30-Jun
07-Jul
14-Jul
21-Jul
31-Jul
07-Aug
14-Aug
21-Aug
31-Aug
07-Sep
14-Sep
21-Sep
30-Sep
07-Oct
14-Oct
21-Oct
31-Oct


date at IH to date at LGr
Y Data
140
120
100
80
60
40
20
0
June
July
August
Sep 1-15
Sep 16-30
3 11 6
4 11 22
12 9 32
37 32 40
94 96 148
2000
2001
2002

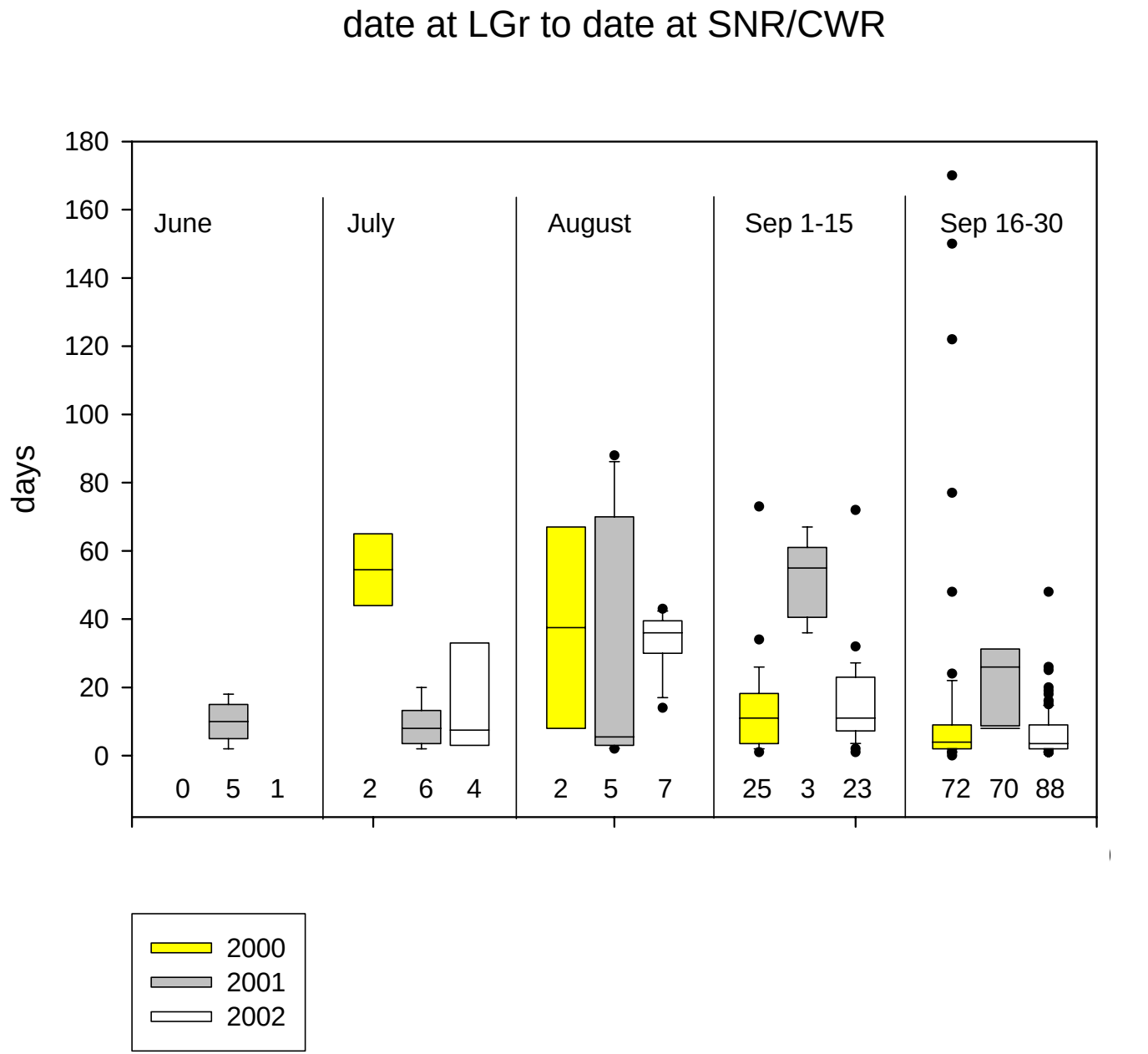
IH-GR passage times: median (N)

	2000	2001	2002	2000 vs 2002 Means	2000 vs 2002 Medians
June	14 (3)	9 (11)	7.5 (6)		
July	22.5 (4)	7 (11)	13.5 (22)		
August	10.5 (12)	21 (9)	10.5 (32)		
1-15 Sep	7 (37)	7 (32)	8 (40)	P = 0.98	P = 0.11
16-30 Sep	7 (94)	7 (96)	6 (148)	P = 0.0002	P = 0.0001


date at IH to date at SNR/CWR
days
200
150
100
50
0
June
July
August
Sep 1-15
Sep 16-30
1 8 2
3 7 11
11 8 24
32 23 31
89 86 101
2000
2001
2002

IH-SNR/CWR passage times: median (N)

	2000	2001	2002	2000 vs 2002 Means	2000 vs 2002 Medians
June	84 (1)	17.5 (8)	14 (2)		
July	56 (3)	75 (7)	50 (11)		
August	26 (11)	52 (8)	28.5 (24)	P = 0.62	P = 0.75
1-15 Sep	13 (32)	20 (23)	15 (31)	P = 0.15	P = 0.12
16-30 Sep	14 (89)	14.5 (86)	10 (101)	P = 0.0001	P = 0.0001


date at LGr to date at SNR/CWR
days
180
160
140
120
100
80
60
40
20
0
June
July
August
Sep 1-15
Sep 16-30
0 5 1
2 6 4
2 5 7
25 3 23
72 70 88
2000
2001
2002

GR-SNR/CWR passage times: median (N)

	2000	2001	2002	2000 vs 2002 Means	2000 vs 2002 Medians
June	- (0)	8 (5)	8 (1)		
July	54.5 (2)	5.5 (6)	7.5 (4)		
August	37.5 (2)	55 (5)	36 (7)		
1-15 Sep	11 (25)	26 (3)	11 (23)	P = 0.58	P = 0.43
16-30 Sep	4 (72)	10.5 (72)	3.5 (88)	P = 0.04	

GR-SNR/CWR passage times: median (N)

	2000	2001	2002	2000 vs 2002 Means	2000 vs 2002 Medians
June	- (0)	8 (5)	8 (1)		
July	54.5 (2)	5.5 (6)	7.5 (4)		
August	37.5 (2)	55 (5)	36 (7)		
25-31 August	8 (1)		26 (2)		P = 0.34
1-15 Sep	11 (25)	26 (3)	11 (23)	P = 0.58	P = 0.43
1-7 Sep	15 (7)		17 (13)		
8-15 Sep	10 (18)		9 (10)		

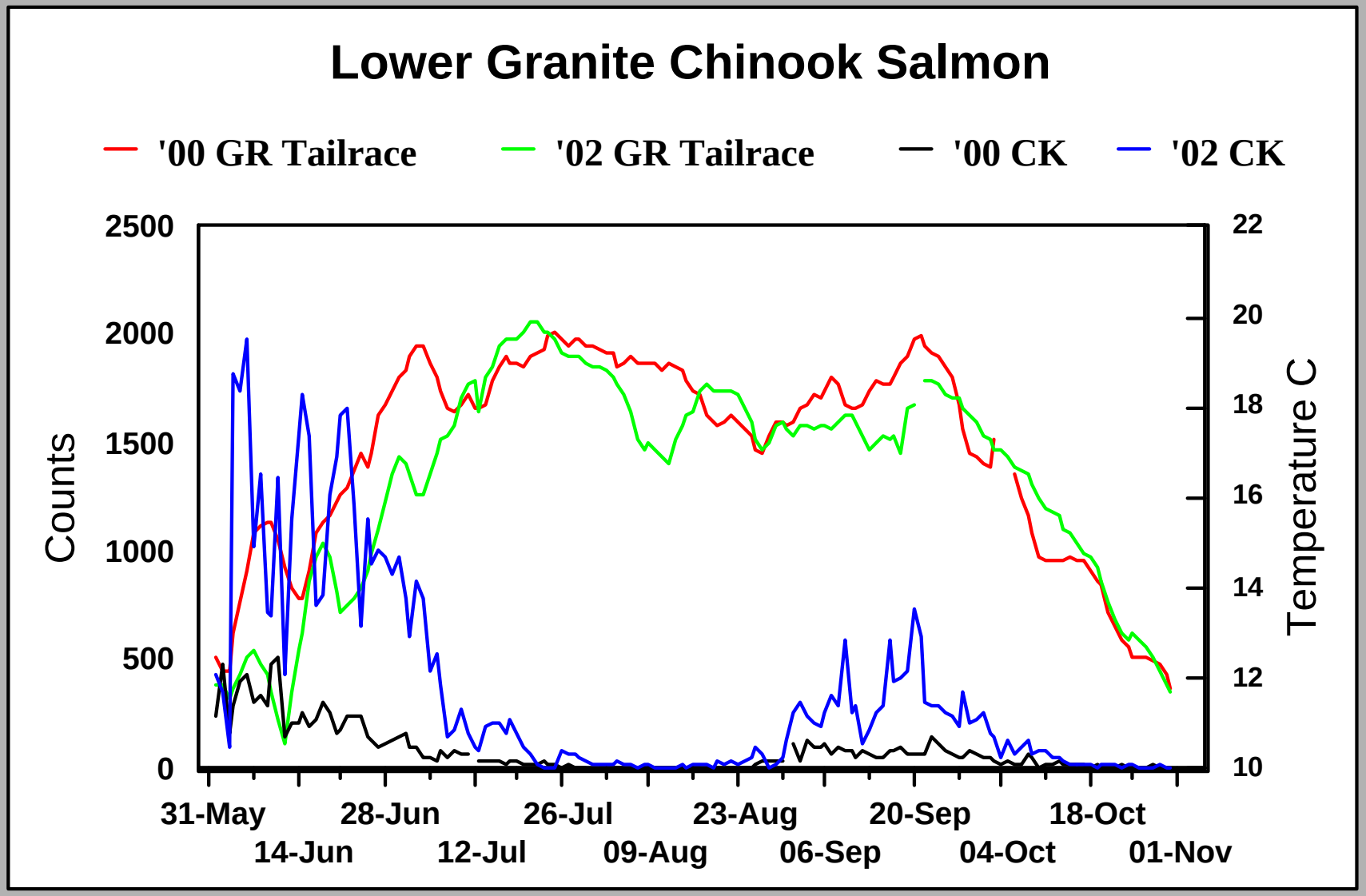
Tracking MAP Fish in Lower Granite Reservoir

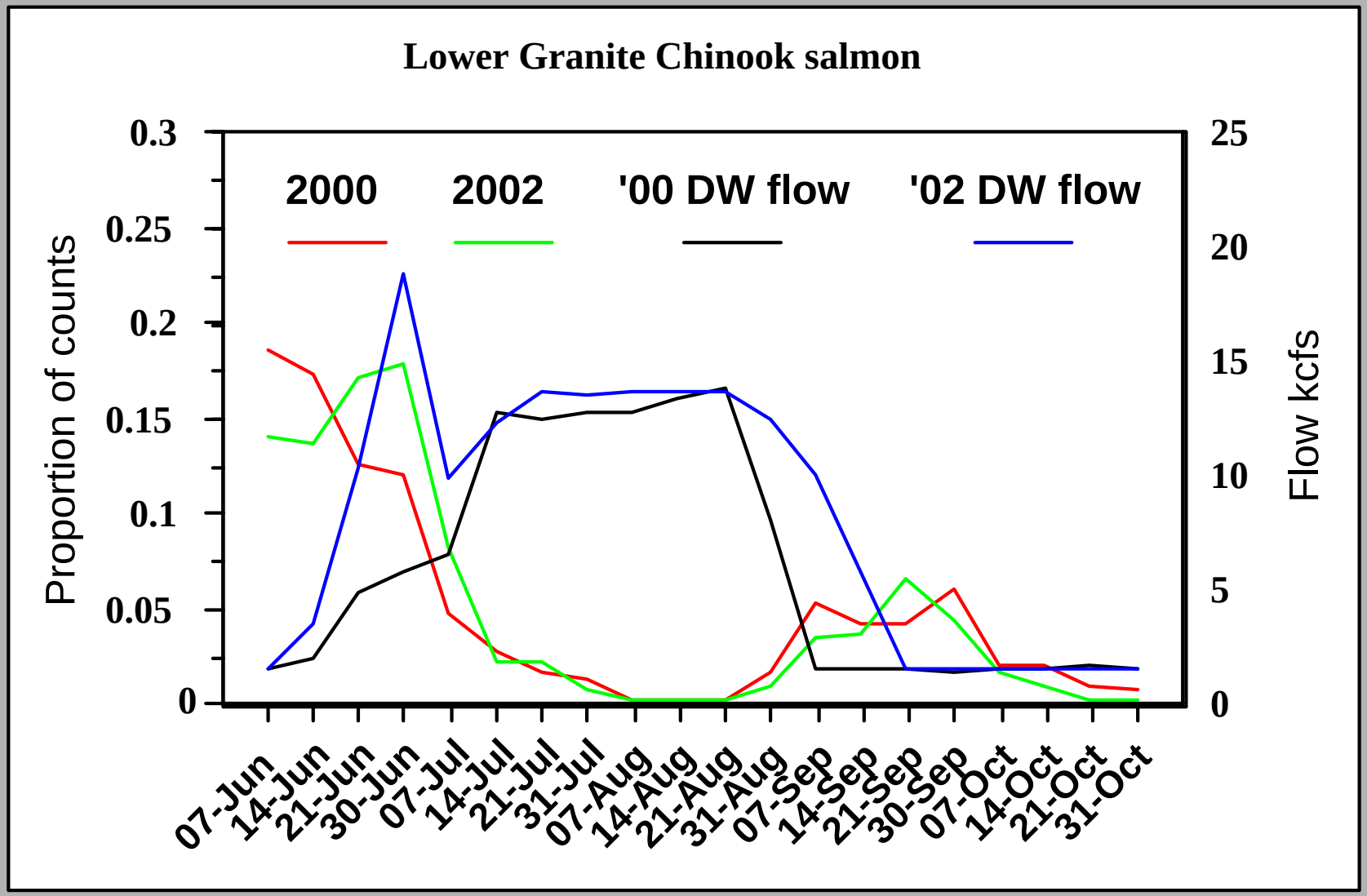
		2001				2002			
		N	Avg.	Min.	Max.	N	Avg	Min.	Max.
17-23 Aug.	Fish	4	15.4	11.2	19.2	7	16.3	12.8	17.6
	River		16.7	14.5	19.7		17.6	14.5	20.6
24-31 Aug.	Fish	13	14.0	12.8	16.3	11	13.7	12.8	18.4
	River		16.1	13.8	20.6		17.3	14.6	21.3
1-8 Sep.	Fish	12	19.2	14.4	21.6	15	14.8	12.8	17.6
	River		19.3	15.4	21.3		17.5	14.7	21.0
9-15 Sep.	Fish	4	18.4	16.8	20.0	14	15.6	13.6	19.2
	River		19.0	17.9	20.2		16.4	14.1	19.8
16-22 Sep.	Fish	10	16.4	10.0	19.2	23	17.4	12.8	20.8
	River		19.1	17.6	20.4		17.9	14.1	20.8

RDST fish Recaptured at Lower Granite Dam in 2002

1-15 Aug: 2 Steelhead
16-31 Aug: 5 Steelhead, 1 Chinook

1-15 Sep: 9 Steelhead, 2 Chinook
16-31 Sep: 30 Steelhead, 3 Chinook


Lower Granite Chinook Salmon
'00 GR Tailrace
'02 GR Tailrace
'00 CK
'02 CK
Counts
2500
2000
1500
1000
500
0
Temperature C
22
20
18
16
14
12
10
31-May
14-Jun
28-Jun
12-Jul
26-Jul
09-Aug
23-Aug
06-Sep
20-Sep
04-Oct
18-Oct
01-Nov


Lower Granite Chinook salmon
2000
2002
'00 DW flow
'02 DW flow
Proportion of counts
Flow kcfs
0.3
0.25
0.2
0.15
0.1
0.05
0
25
20
15
10
5
0
07-Jun
14-Jun
21-Jun
30-Jun
07-Jul
14-Jul
21-Jul
31-Jul
07-Aug
14-Aug
21-Aug
31-Aug
07-Sep
14-Sep
21-Sep
30-Sep
07-Oct
14-Oct
21-Oct
31-Oct