

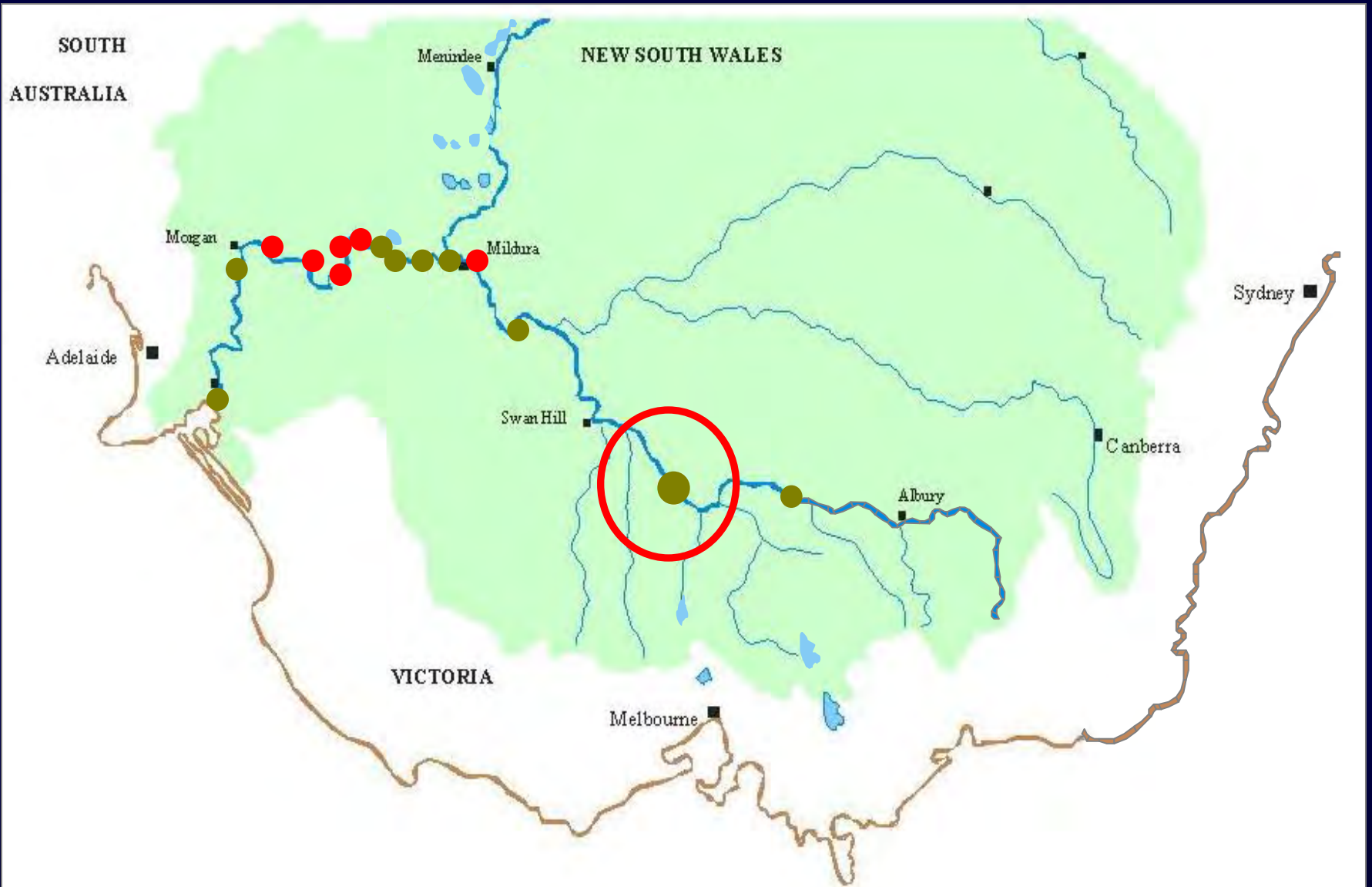
# Trends in fish population recovery 16 years after Torrumbarry fishway



Ivor Stuart and Martin Mallen-Cooper

# Lock 26 – Torrumbarry Weir

750 km upstream of Mildura



# The new and the old









# RESULTS

**161 225 fish passed** (12 spp - lg)

**75 744 silver perch** (80% juv)

**21 467 golden perch** (42% juv)

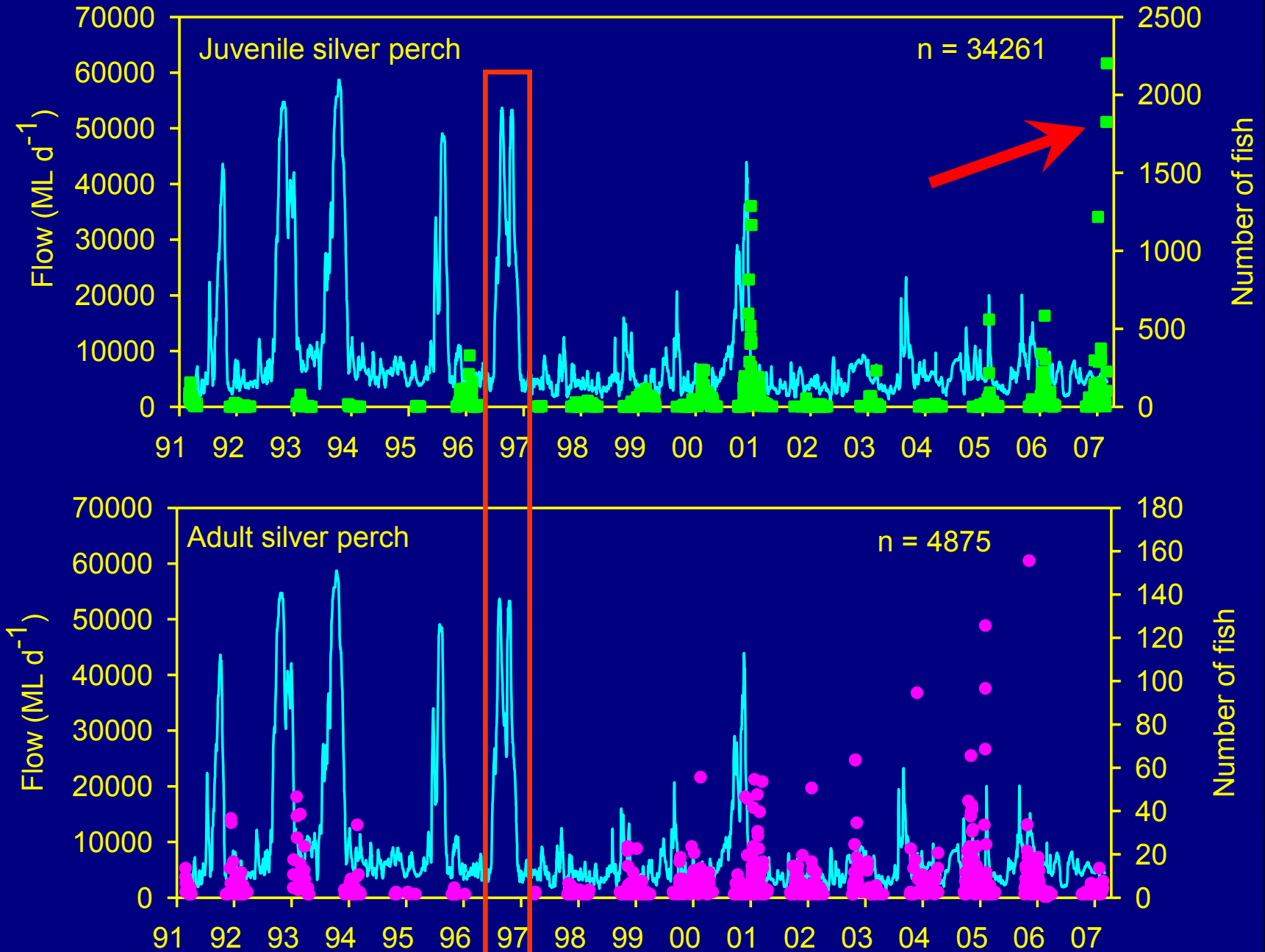






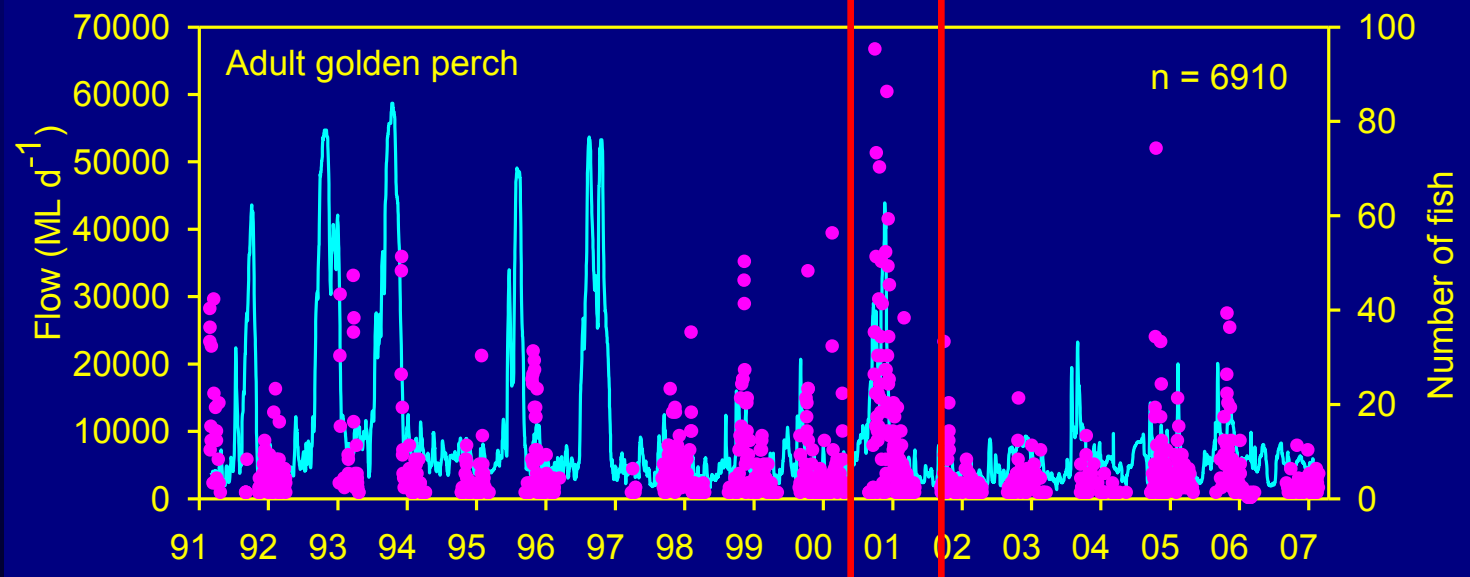
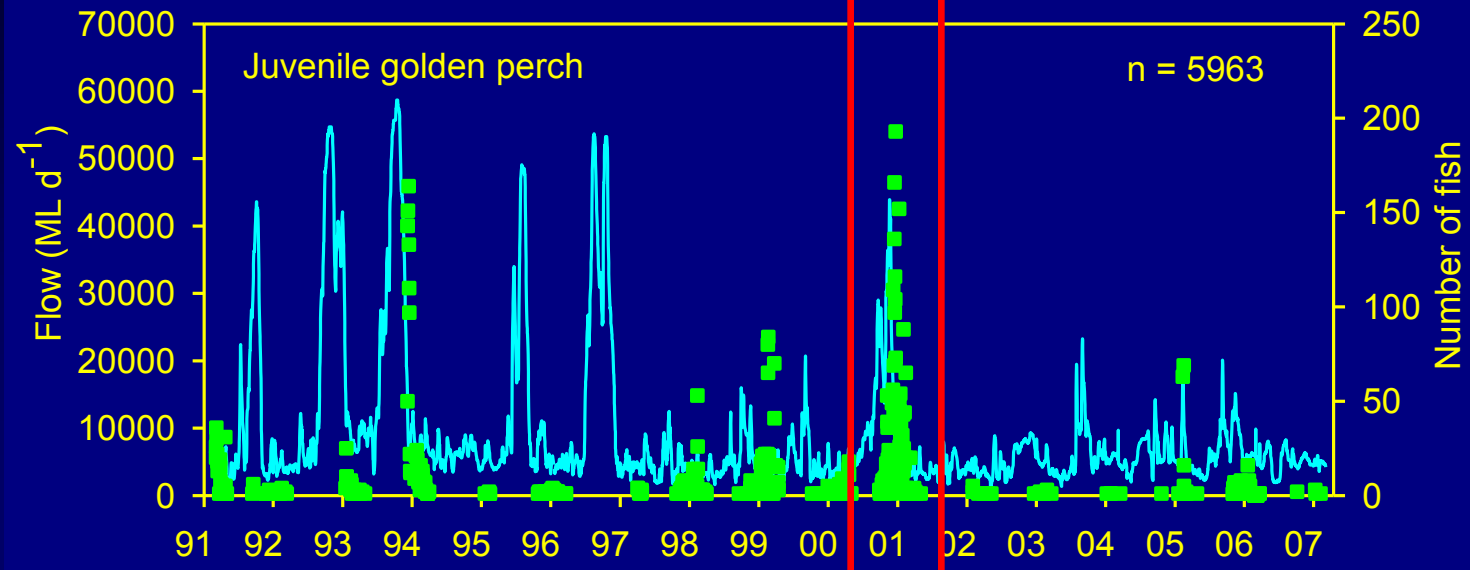
2833 standardised catch days

42% in final 2 years – 97% juvs

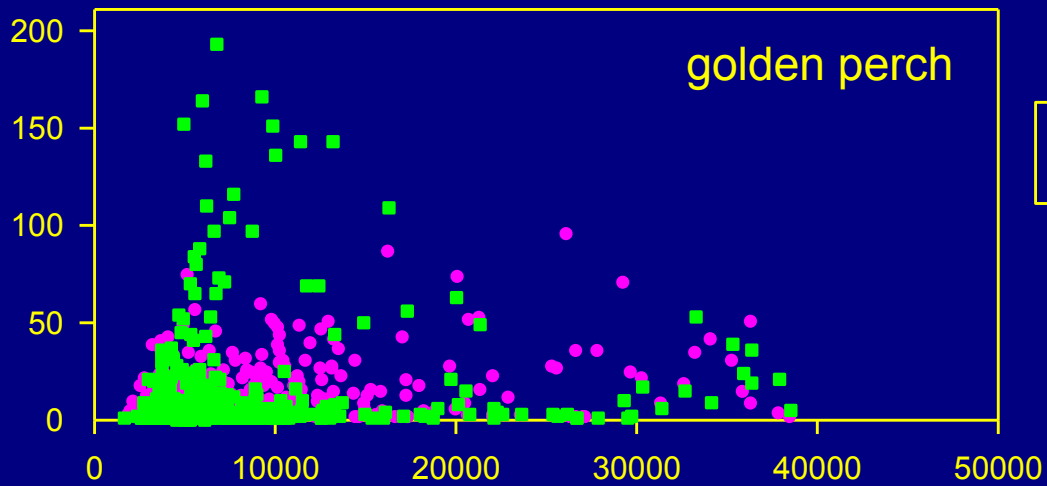
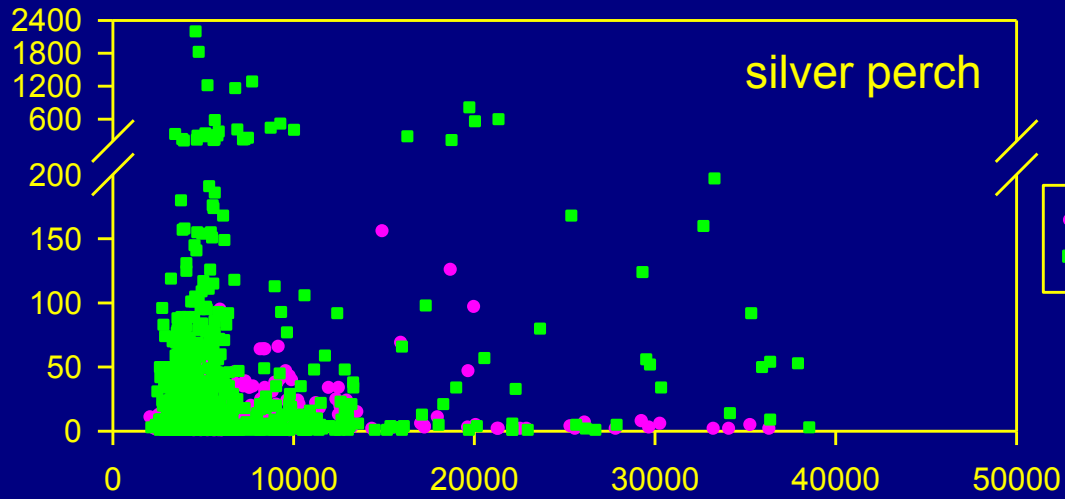


30%

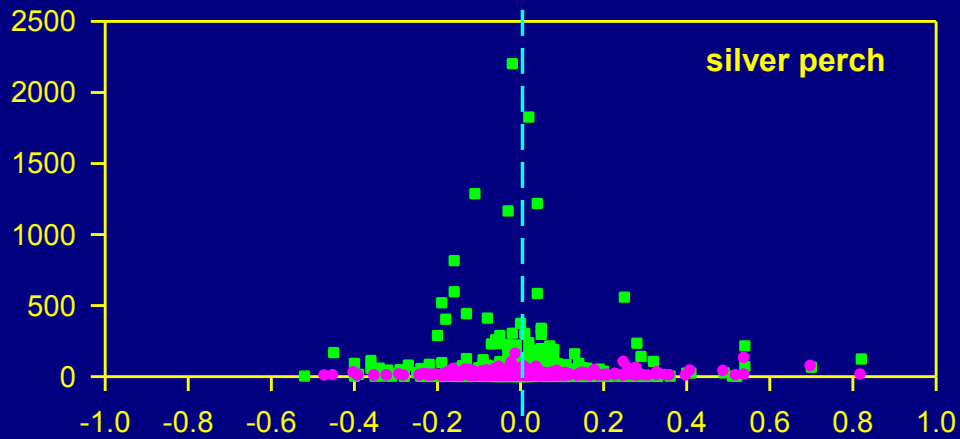
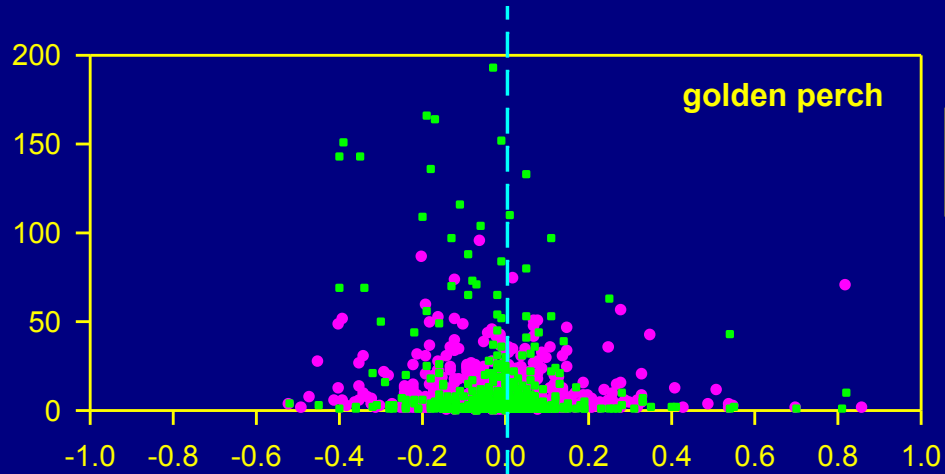
**N = 21 467**



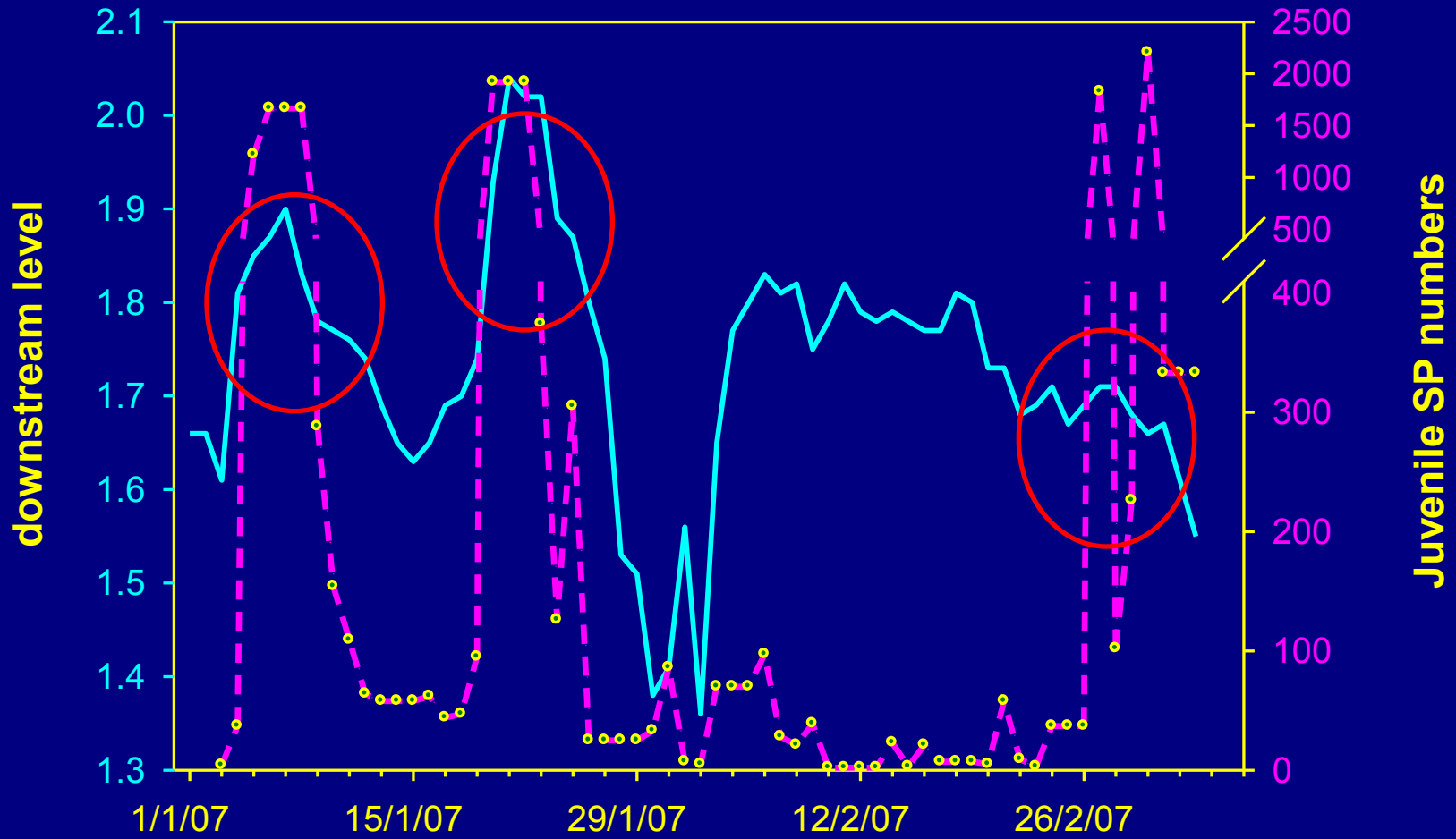
Number of fish per 24 h



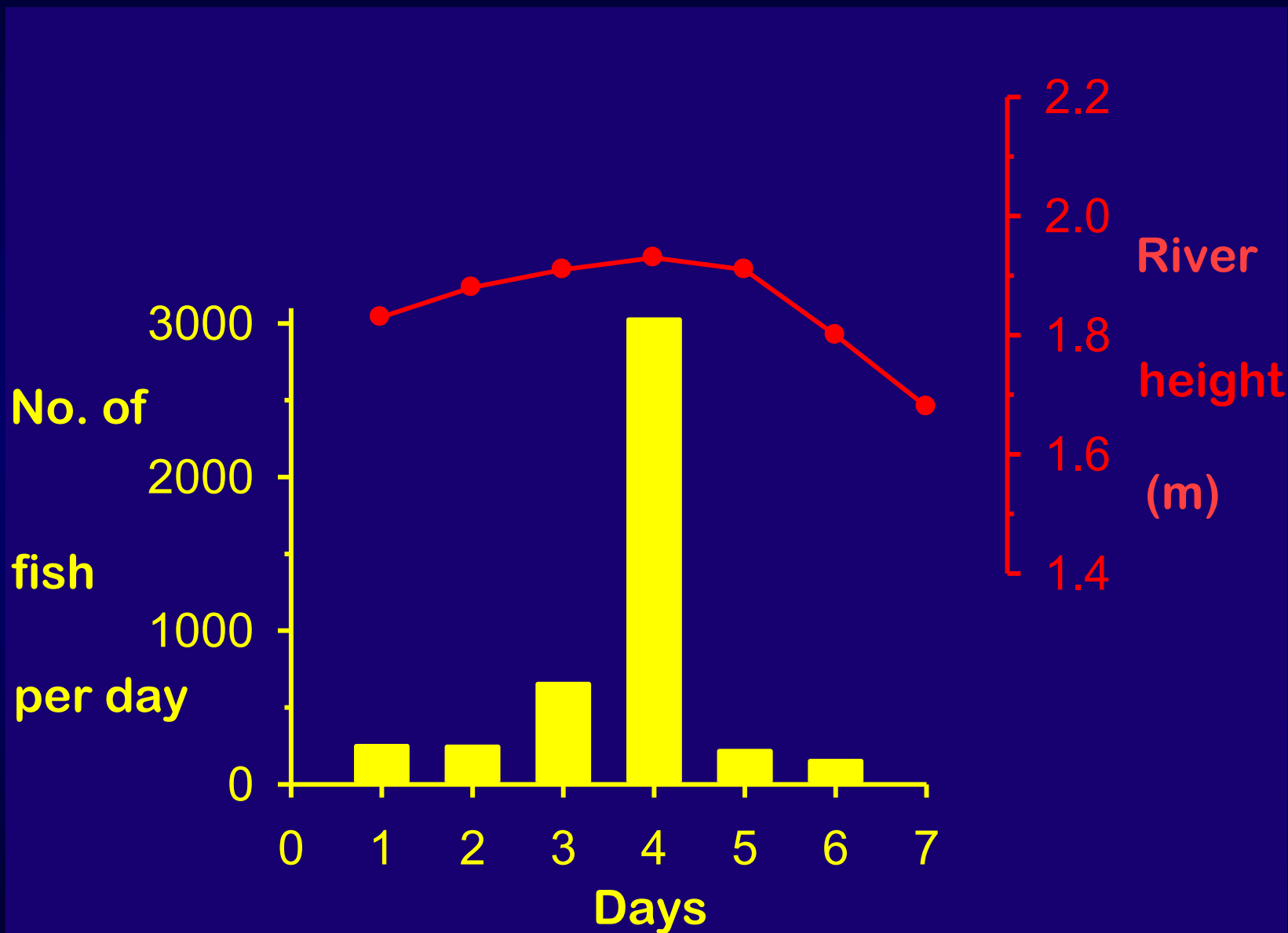
River flow ML d<sup>-1</sup>



# The importance of rain rejections

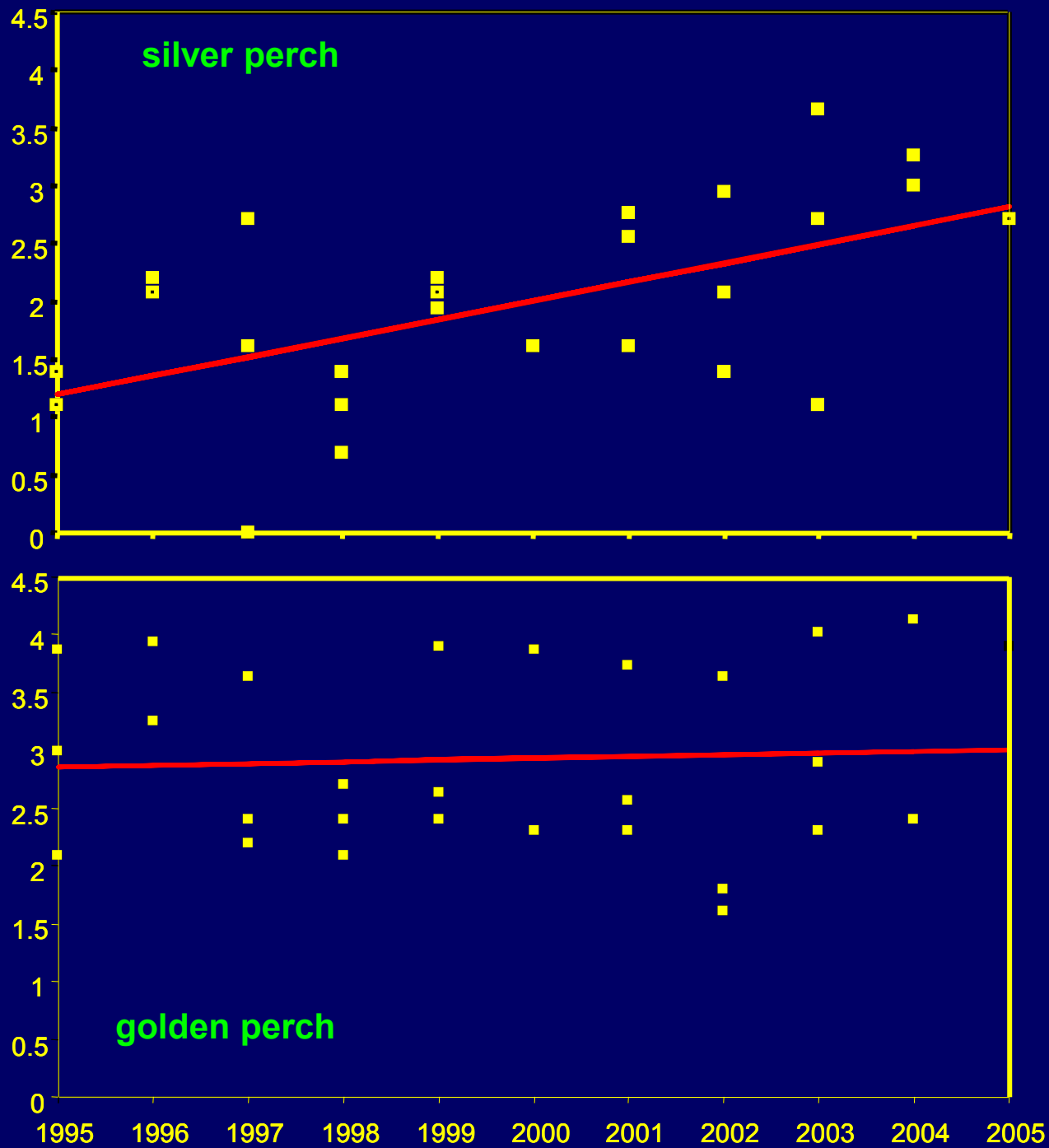


# Golden perch versus river flow – Euston fishway

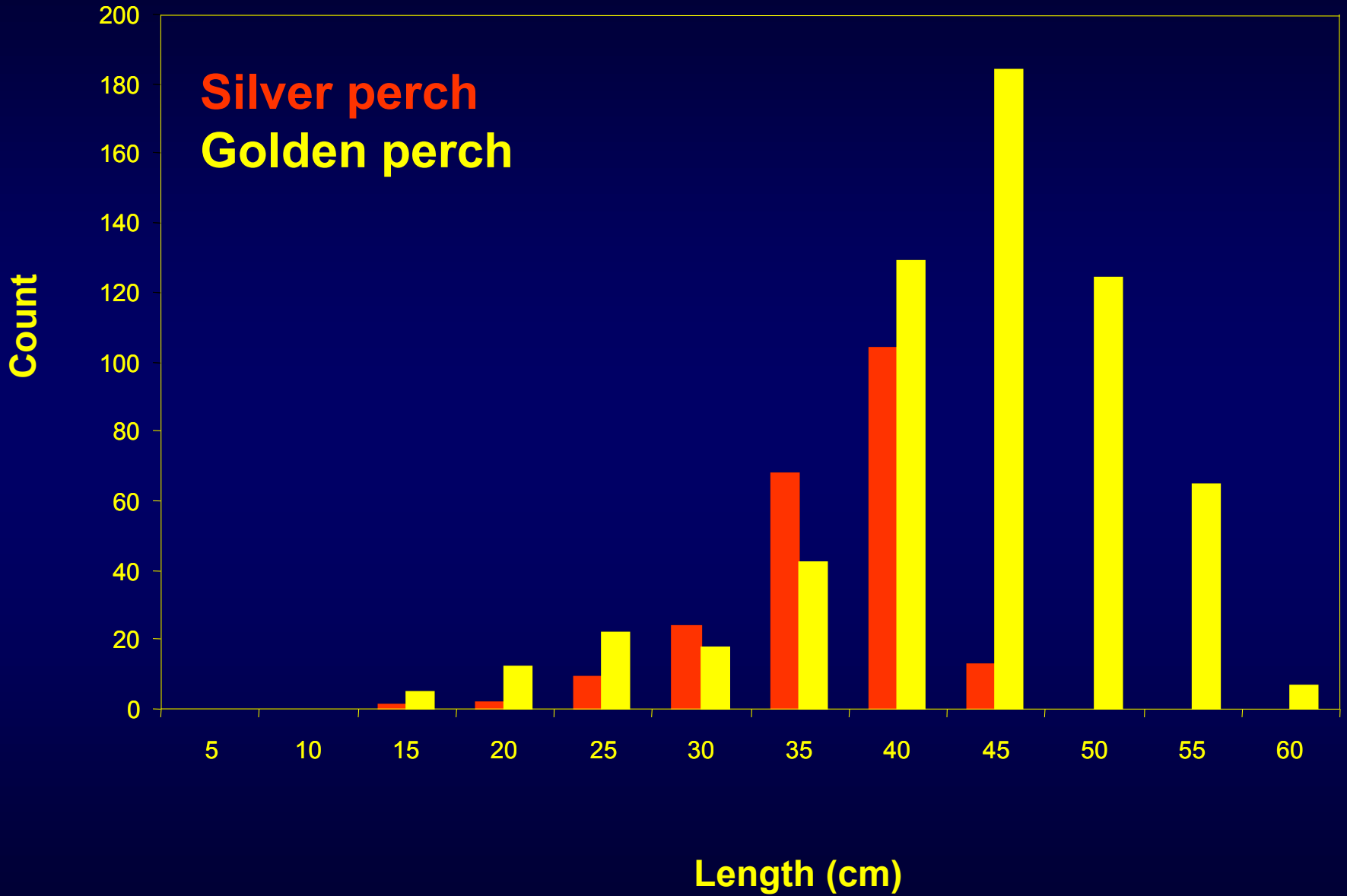




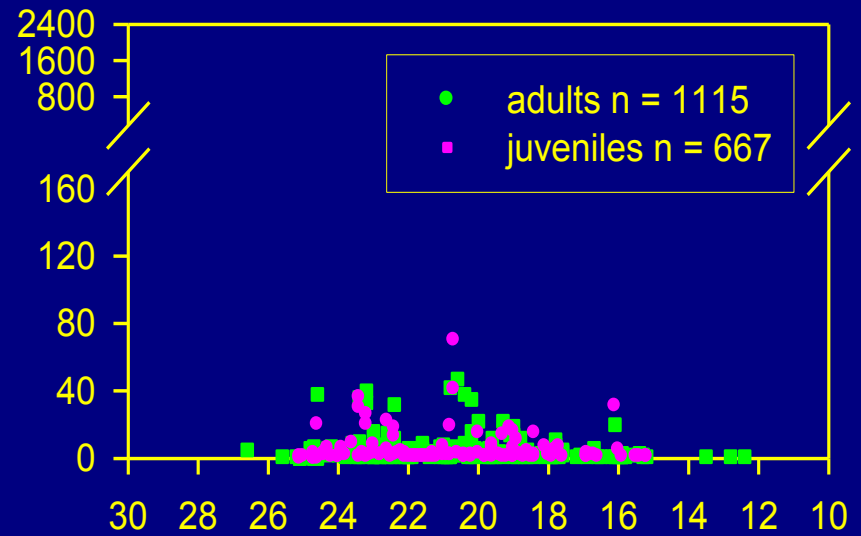
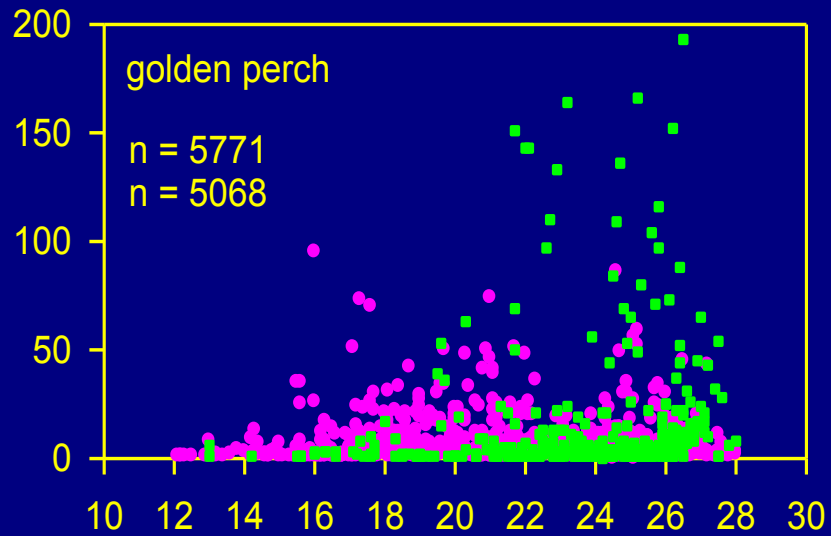
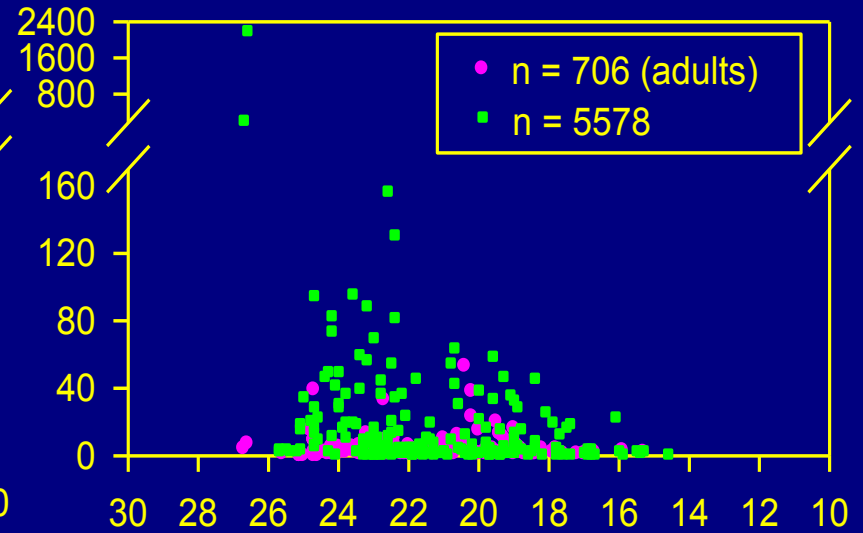
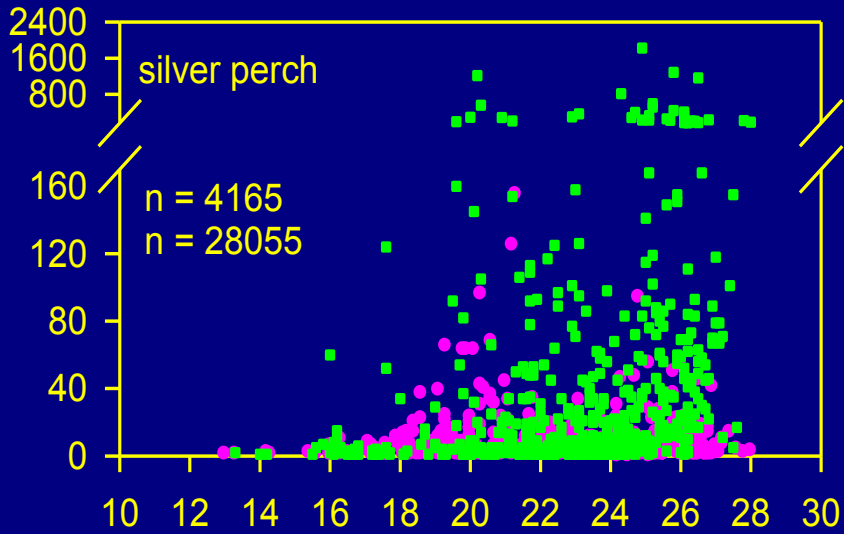
Log count



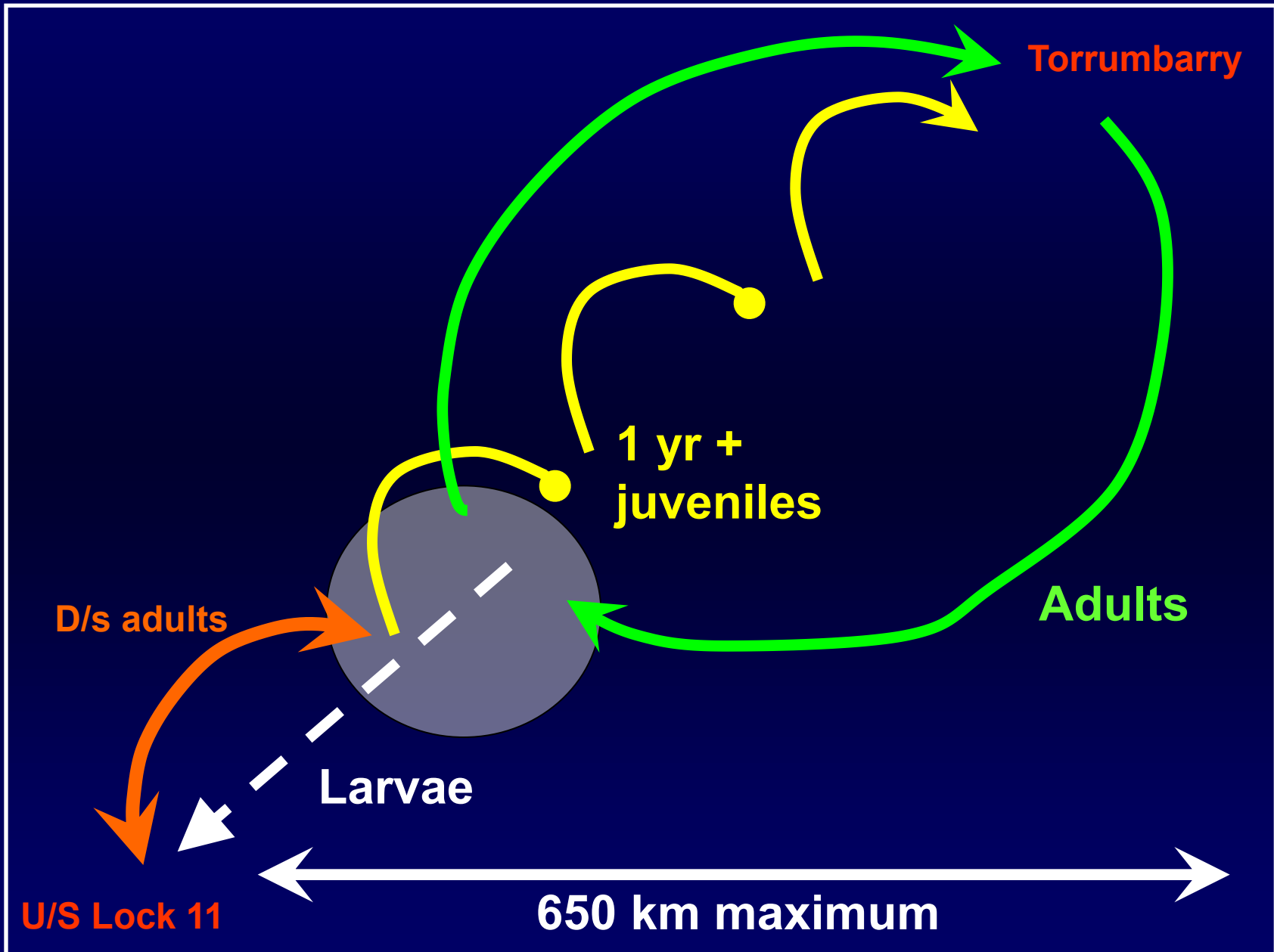








# Golden perch/silver perch life history model – mid-Murray River



# Conclusions and future directions

- Fishways restoring connectivity – Australia wide
- Fishways important tools for long-term monitoring of fish pops
- Torrumbarry dataset the most comprehensive
- Unique evidence of silver perch population rehabilitation meeting objectives of NFS
- Long-term fish trends, numbers, env. factors, recruitment etc.
- Management of rivers and fishways to enhance fish populations:  
(a) new fishways, (b) daily flow variation

Our thanks to:

**Terry Holt & Alan Williams** (Goulburn Murray Water)

**Simon Nicol & Joanne Potts** (Arthur Rylah Institute)









	Silver perch	Golden perch	Bony herring	Murray cod	Carp	
March to July 1991	67 (1170)	477 (413)	57 (44)	9 (2)	37 (2)	
1991/92	382 (281)	479 (80)	172 (39)	13 (1)	3552	
1992/93	399 (333)	414 (134)	1640 (652)	2	6638 (58)	
1993/94	142 (81)	362 (1768)	306 (210)	3	1165 (361)	
1994/95	11 (44)	223 (8)	40 (244)	5	3395 (8)	
1995/96	13 (4120)	498 (59)	73 (104)	1	2515	
1996/97*	10 (279)	75 (206)	48 (13)	3	55 (1)	
1997/98	95 (1146)	930 (413)	38 (150)	9	4333	
1998/99	817 (5103)	1409 (1335)	124 (3607)	2	2628 (1)	
1999/00	968 (5438)	1230 (198)	394 (935)	12	984 (3)	
2000/01	1206 (11768)	3022 (3260)	686 (12135)	90 (1)	462 (11709)	
2001/02	715 (638)	375 (15)	307 (253)	81 (1)	728 (9)	
2002/03	1142 (1374)	523 (268)	79 (411)	47	456	
2003/04	1306 (616)	362 (20)	17 (143)	19	377 (2)	
2004/05	1999 (1998)	1010 (432)	39 (34)	32 (2)	284	
2005/06	767 (10011)	894 (332)	106 (274)	30	181	
2006/07	164 (21141)	236 (7)	12 (9)	12	298	
TOTAL	10203 (65541)	12519 (8948)	4138 (19257)	370 (7)	28088 (12154)	
GRAND TOTAL	75744	21467	23395	377	40242	161 225

\*New fishway construction from April 1996 to March 1997