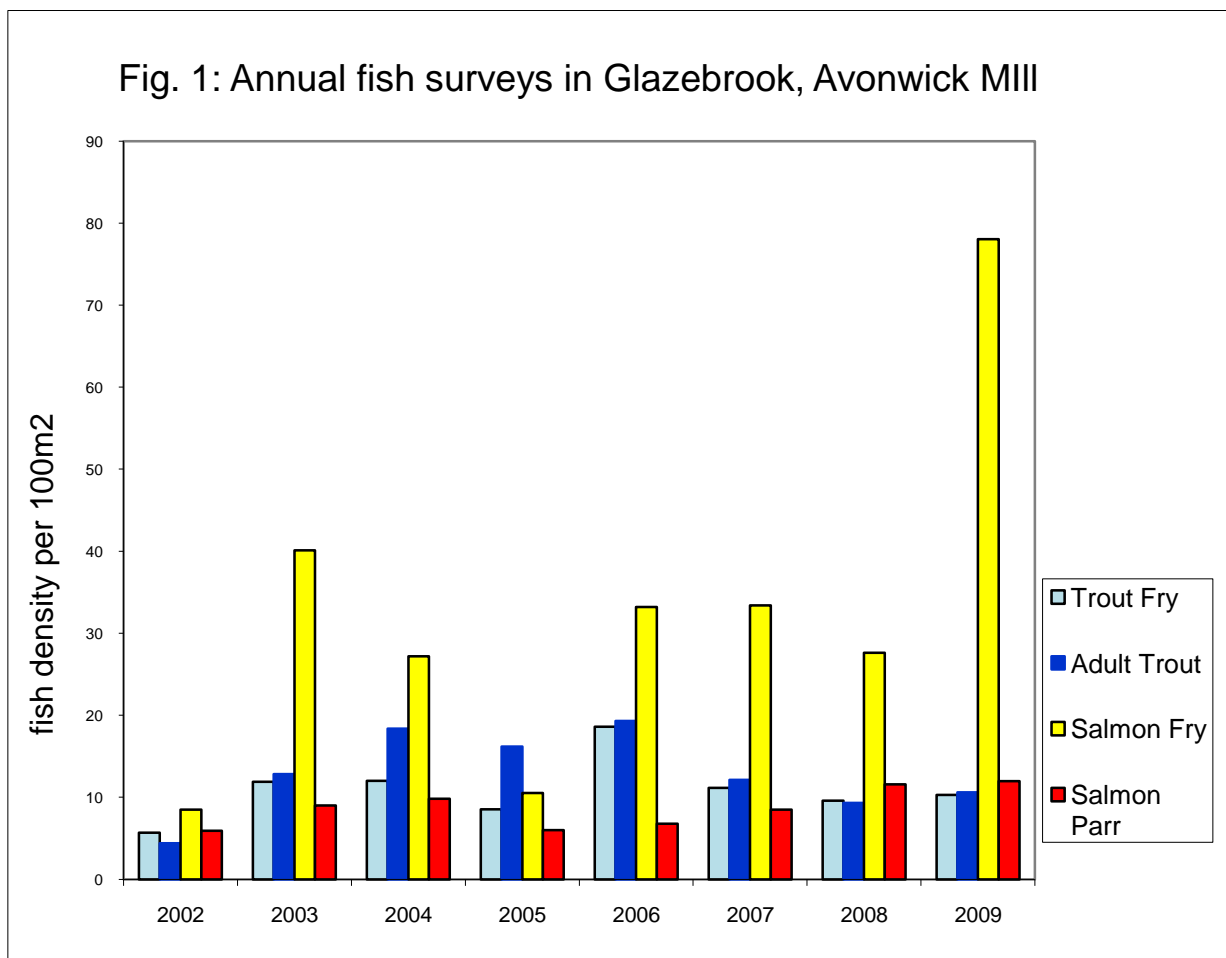


ARE RIVER AVON FISH STOCKS IN DECLINE?

The state of the salmon and trout population in the freshwater part of the Avon, above Venn Weir, is a topic that frequently recurs whenever two or more interested parties get together in discussion about the river. Usually, we hear that fish are nothing like as numerous as once was the case and that, maybe, this is symptomatic of a general decline in the river's condition. Certainly, salmon and trout numbers are of great importance because these species are near the top of the aquatic food chain as recognised in the EU's Water Framework Directive (although they do have a variety of large predators) and their welfare is a good indicator of the overall health of the plant and animal life in the river; this is one reason why the Environment Agency's (EA) annual survey of trout and salmon stocks (fig. 1) is so important.



Footnote to Figure 1: Avonwick Mill Sampling Policy

From 2002 to 2006 inclusive the site at Avonwick Mill was fished between stop nets and each survey consisted of 3 runs. From 2007 onwards the site has been fished using no stop nets and only one run. The EA's National Fish Population Database (NFPD) automatically adjusts the figures for the one-run surveys and produces the results as if we had fished the site using 3 runs between stop nets. The same site is fished every year and is fished in an upstream direction using electric fishing kit producing a Pulsed Direct Current of approximately 0.3amps.

Fig. 1 shows the numbers of salmon and trout recovered between the years 2002 and 2009 from Glazebrook, near Turtley Corn Mill, a tributary of the Avon used by the EA as a sampling site. Application to these numbers of the EA's National Fishery Classification Scheme by Paul Kenyon, Chairman of the Avon Fishing Association, on the AFA's website - <http://www.avonfishingassociation.co.uk/ea-avon-surveys.shtml> - reveals that the 2009 figures for trout fry and parr are 'fair' (within the middle 20% for a fishery of this type) and for salmon fry and parr are good (within the top 40% for a fishery of this type). Comparison of the Avon with the rivers Erme and Yealm (Table 1) shows salmon have fared well in the Avon although trout numbers in the Erme are generally better than the Avon. Possible explanations for this variation and fluctuation in fish numbers are numerous and complicated: changes in food availability, in fish migration patterns, in river hydrology, in water quality, in predation, in disease incidence and in breeding are but some of the possibilities!

SAMPLING LOCATION	AVON	2002	2003	2004	2005	2006	2007	2008	2009
	Salmon Fry	8.5	40.1	27.2	10.5	33.2	33.4	27.6	78.0
Avonwick Mill	Trout Fry	5.7	11.9	12.0	8.5	18.6	11.1	9.6	10.3
(SX698 589)	Adult Trout	4.4	12.8	18.4	16.2	19.3	12.1	9.3	10.6
	Salmon Parr	5.9	9.0	9.8	6.0	6.8	8.5	11.6	12.0
Lower Piles	ERME								
(SX607640)	Trout Fry	15.6	13.9	29.6	30.6	26.0	20.5	11.9	14.2
	Adult Trout	15.0	8.5	12.2	12.3	9.7	21.4	5.0	13.7
	Salmon Fry	3.7	1.1	18.3	16.4	9.0	4.5	0.5	0.9
	Salmon Parr	0.9	2.7	3.1	6.1	4.3	6.8	3.1	4.2
Potson's Wood	YEALM								
(SX603 566)	Trout Fry	5.8	8.1	5.2	2.1	12.9	1	6.5	
	Trout Parr	7.1	14.9	12.2	9.8	11	4.1	5.9	
	Salmon Fry	6.2	16.9	27	32	39.2	40.6	7.5	
	Salmon Parr	2.1	3.7	5.2	8.5	8.2	3.7	3.6	

Table 1: South Hams rivers: fish densities /100m² for 2002-2009

AVON	2002	2003	2004	2005	2006	2007	2008	2009
Trout Fry	1.0	2.1	2.1	1.5	3.3	2.0	1.7	1.8
Adult Trout	1.0	2.9	4.2	3.7	4.4	2.8	2.1	2.4
Salmon Fry	1.0	4.7	3.2	1.2	3.9	3.9	3.2	9.2
Salmon Parr	1.0	1.5	1.7	1.0	1.1	1.4	1.9	2.0

Table 2: Avon fish numbers indexed against 2002

Indexation of all the recent results for the Avon against the Avon figures for 2002 (Table 2) shows the trend with time more clearly.

More detailed comparison of the three rivers is easier if the results for the Erme and Yealm are indexed against those for the Avon on a year by year basis (Table 3) i.e. each annual result for the Avon is taken as unity.

ERME	2002	2003	2004	2005	2006	2007	2008	2009
Trout Fry	2.7	1.2	2.5	3.6	1.4	1.8	1.2	1.4
Adult Trout	3.4	0.7	0.7	0.8	0.5	1.8	0.5	1.3
Salmon Fry	0.4	0.0	0.7	1.6	0.3	0.1	0.0	0.0
Salmon Parr	0.1	0.3	0.3	1.0	0.6	0.8	0.3	0.3
YEALM	2002	2003	2004	2005	2006	2007	2008	2009
Trout Fry	1.0	0.7	0.4	0.2	0.7	0.1	0.7	n/a
Trout Parr	1.6	1.2	0.7	0.6	0.6	0.3	0.6	n/a
Salmon Fry	0.7	0.4	1.0	3.0	1.2	1.2	0.3	n/a
Salmon Parr	0.4	0.4	0.5	1.4	1.2	0.4	0.3	n/a

Table 3: Erme and Yealm results indexed against the Avon, year by year

The results for the Erme are poor in comparison with the Avon for salmon but, arguably, slightly better for trout. Those for the Yealm are generally poorer for salmon than the Avon but better than the Erme and, recently, the Yealm seems not to have been as good an environment as either the Erme or the Avon for trout. The explanation for these intriguing differences between what, essentially, are similar rivers is unclear. The EA's document 'Better sea trout and salmon fisheries: our strategy for 2008-2021' states that 'national catches of sea trout had remained relatively stable from the late 1990s and represented an increase over the earlier part of the decade. However, catches up to 2006 showed a decline from a peak in 2002. Salmon stocks are generally depleted. This is the case in virtually the whole of the salmon's distribution across the North Atlantic.' Interestingly, the Avon seems to differ from these national trends for both salmon and trout.

CONCLUSION: These surveys show that, despite some wide annual fluctuations, salmon and trout stocks in the Avon have increased since 2002 and contrary to anecdotal comment have not been in overall decline in recent years.