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ENVIRONMENT
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SOUTH WEST REGION

FISHERIES TECHNICAL REPORT

**STOCK ASSESSMENT REVIEW ON THE
RIVER TEIGN.**

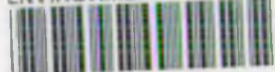
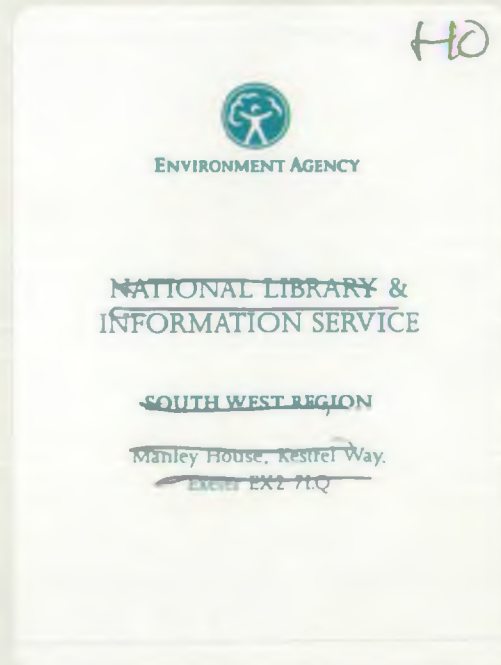
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REGIONAL WATER MANAGER**

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STOCK ASSESSMENT REVIEW ON THE RIVER TEIGN.

This paper gives details of the assessment of the salmon and sea trout stocks for the River Teign from the 1950's to date. It also gives for the salmon population the results of the compliance with egg spawning target assessment according to the Environment Agency national guidelines.

Data used to evaluate the stocks include rod catches returns, net catches returns and juvenile survey.

1- Net catches.

Monthly total catches were available since 1953.

SALMON CATCHES:

Total catches have been varying considerably from the 1950's to date, from 600 fish caught to 2500, then reaching their lowest level after 1994 with around 400 fish caught. They have been declining significantly since the beginning of the 1980s to date. The slope of -56 is significantly different to 0 ($p=0.02$) and $R^2 = 0.27$ (Fig. 1, 2 and table 1).

Early season catches (from the start of the netting season to end of May) have been significantly declining from the 1950's to date. The slope of -13.6 is significantly different to 0 ($p<<0.01$) and $R^2 = 0.68$ (Fig. 3).

At the same time, although considerable variation in fish caught after the 1 June occurred varying from around 300 fish to 2400 fish, these catches were increasing significantly from 1950's to late 1980's. The fitted line, number of fish caught after 1 June (Y) against years 1953 to 1987 (X) shows that the slope of $+27.4$ is significantly different to 0 ($p<<0.01$) and $R^2 = 0.38$. Then from the 1990's to date these catches have been declining.

SEA TROUT CATCHES:

Total sea trout catches have decreased strongly since the beginning 1980's. The slope of -71.8 is significantly different to 0 ($p<<<0.01$) and $R^2 = 0.72$. Catches were in 1996 back at their lowest level as in 1971 and 72 with around 300 fish then picked up in 1998 with 730 fish. This reduction in sea trout catches is more abrupt than in salmon for the same period (Fig. 4, 5 and Table 2).

Total sea trout catches had been increasing from the 1950's to the late 1960's where they dropped abruptly followed by an increase to the early 1980's.

The number of sea trout caught in the early season have been declining since 1950's to date. The slope of -13 is significantly different to 0 ($p<<<0.01$) and $R^2 = 0.33$ (Fig. 6).

The slope is the same as for early season salmon catches though variation in sea trout catches in the early season are more important than for salmon (R^2 is lower for sea trout).

From 1951 to 1998, 10 nets have been operating most of the time with 9 in 1951-53, 1991 and 1993-94, 5 in 1995-96 and 6 in 1997-98. The netting effort seems to have been decreasing since 1991.

The comparison between salmon prejune net catches and sea trout prejune net catches (since netting effort on these two species is the same) does not allow to highlight clearly that the salmon spring stock of the River Teign is declining .

2- Rod catches.

Monthly total catches were available since 1966.

SALMON CATCHES.

There is a significant trend in a very slow increase in the total rod salmon catches from 1966 to date, with considerable variation in the number of fish caught.. The slope of +3.1 is significantly different to 0 ($p=0.016$) and $R^2 = 0.17$ (Fig. 7, 8 and Table 3).

Early season rod salmon catches have been declining significantly middle 1960's to date. The slope of -1.6 is significantly different to 0 ($p=0.003$) and $R^2 = 0.24$ (Fig. 9). Variation in the number of early running fish caught is important. Their proportion changed from 60%-90% before 1981 to nowadays 11%.

The number of fish caught after 1 June is increasing from the mid 1980's to date.

SEA TROUT CATCHES.

There is no significant trend in a change in sea trout rod catches from 1966 to date ($R^2 = 0.12$, $p= 0.049$ and slope= -19) but these catches have been varying considerably, from around 500 to 2000 fish caught (Fig. 10, 11 and Tab. 4).

Early season catches (up to end of May) have been increasing slowly from 1970 to date. The slope of +2.16 is significantly different to 0 ($p<<0.01$) and $R^2 = 0.34$ (fig.12).

NB. Without any detailed information on the changes in net and rod fishing efforts from the 1950's to date it is difficult to interpret the observed trends in the rod and net catches and to highlight variations in the level of the River Teign salmon stock.

3-Sea age composition for salmon population.

Analysis of individual weight distributions from 1973 to 1997 of net salmon caught show that the proportion of multi-sea-winter fish is decreasing significantly (percentage of MSW (Y) against years (X), slope of -0.01 , $p < 0.01$) from a maximum of 53% (in 1978) to 13% (in 1997) (Peress 1999).

Scale reading carried out in the 1960's and in the early 1970's showed that the proportions of multi-sea-winter fish caught were at their highest equal to 91.7% in 1966 and at their lowest equal to 62.3% in 1972 (Hamilton *et al* 1997).

The decline in the number of early season catches together with scale reading and weight distribution analysis of the total catches lead to the conclusion that multi-sea-winter fish population is declining in the river Teign.

4-Salmon spawning target and compliance assessment.

The spawning target for the river Teign is 315 eggs/100 m² of accessible area for salmon. This density converted with the total accessible area of 975 890m² is equal to 3.1 million eggs (Peress 1999).

Compliance with this target has been assessed from 1964 to date based on annual rod catches and weight distribution analysis of net caught fish (Peress 1999).

Target has been reached in 1966, in 1986, 1988 and in 1994. Periods of failure to meet the spawning target are identified according to the national guidelines. The assessment shows that the River Teign has failed to comply with the spawning target since 1964 (Fig. 13).

5-Juvenile survey.

Juvenile monitoring with electric fishing has been carried out since 1963. Electric fishing was undertaken in sites randomly distributed throughout the catchment. In some year, the number of sites surveyed were small and have been omitted from the analysis (1975, 79)

1-The analysis presented in Hamilton *et al* 1997 shows that salmon and trout were well distributed throughout the catchment.

2-Analysis of estimated average densities of juvenile salmon has been carried out to compare salmon parr population between years and salmon fry population. Average density was estimated separately for parr and fry and all the sites where salmon had access were included.

METHOD:

The null hypothesis is there no significant difference in salmon densities between years. Years are linked between them as the surveys are done at the same site each year. The data set is unbalanced as not all sites have been surveyed each year (Table 5).

Preliminary analysis of variance showed that the data sets for both fry and parr are not normal. Friedmann test, a non parametric alternative analysis of variance for linked samples, was then performed on the data sets which have been balanced (Table 6). This was tested for 1990, 1993 and 1996 for both age classes.

RESULT:

This test showed that for both fry and parr that there is no significant difference in estimated densities between the examined years (fry $P > 5\%$ and parr $P > 5\%$).

6-References.

Environment Agency, 1996. Salmon Action Plan Guidelines. Version 1, Environment Agency.

Hamilton, R.M., Broad, K.J. and Bird, D., 1997. Review of fishery regulations on the River Teign. Environment Agency Report FRCN/97/03

Peress, J.N., 1999. River Teign salmon spawning target and compliance assessment. Environment Agency Report FRCN/99/02

Steel, S., 1997. River Teign fisheries survey 1996. Environment Agency Report DEV/FRCN/04/97

FIGURE 1: NET SALMON CATCHES FROM 1953 TO 1998 - RIVER TEIGN

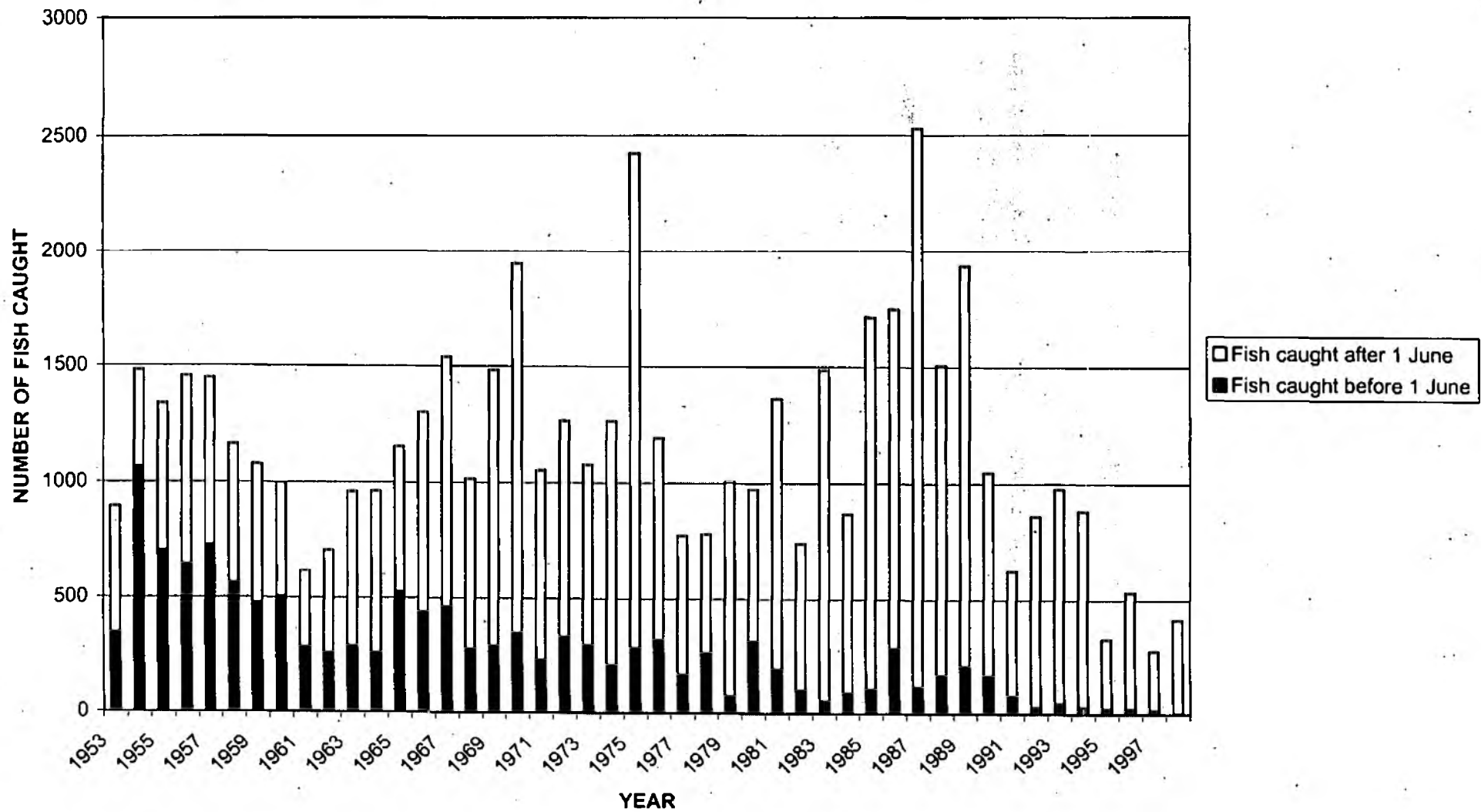


FIGURE 2: TOTAL SALMON NET CATCHES FROM 1953 TO 1998 - RIVER TEIGN

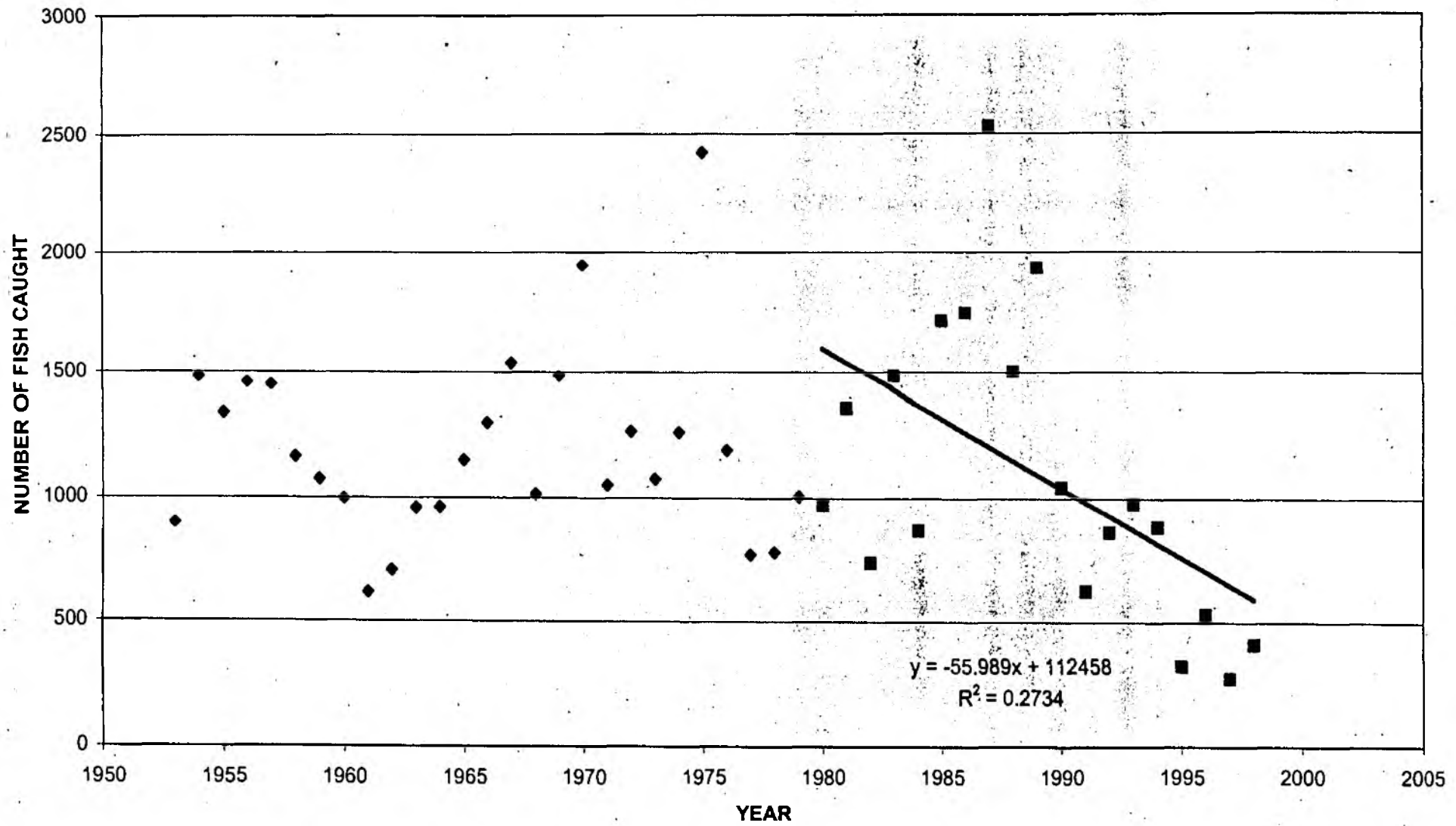


FIGURE 3: PREJUNE NET SALMON CATCHES - RIVER TEIGN

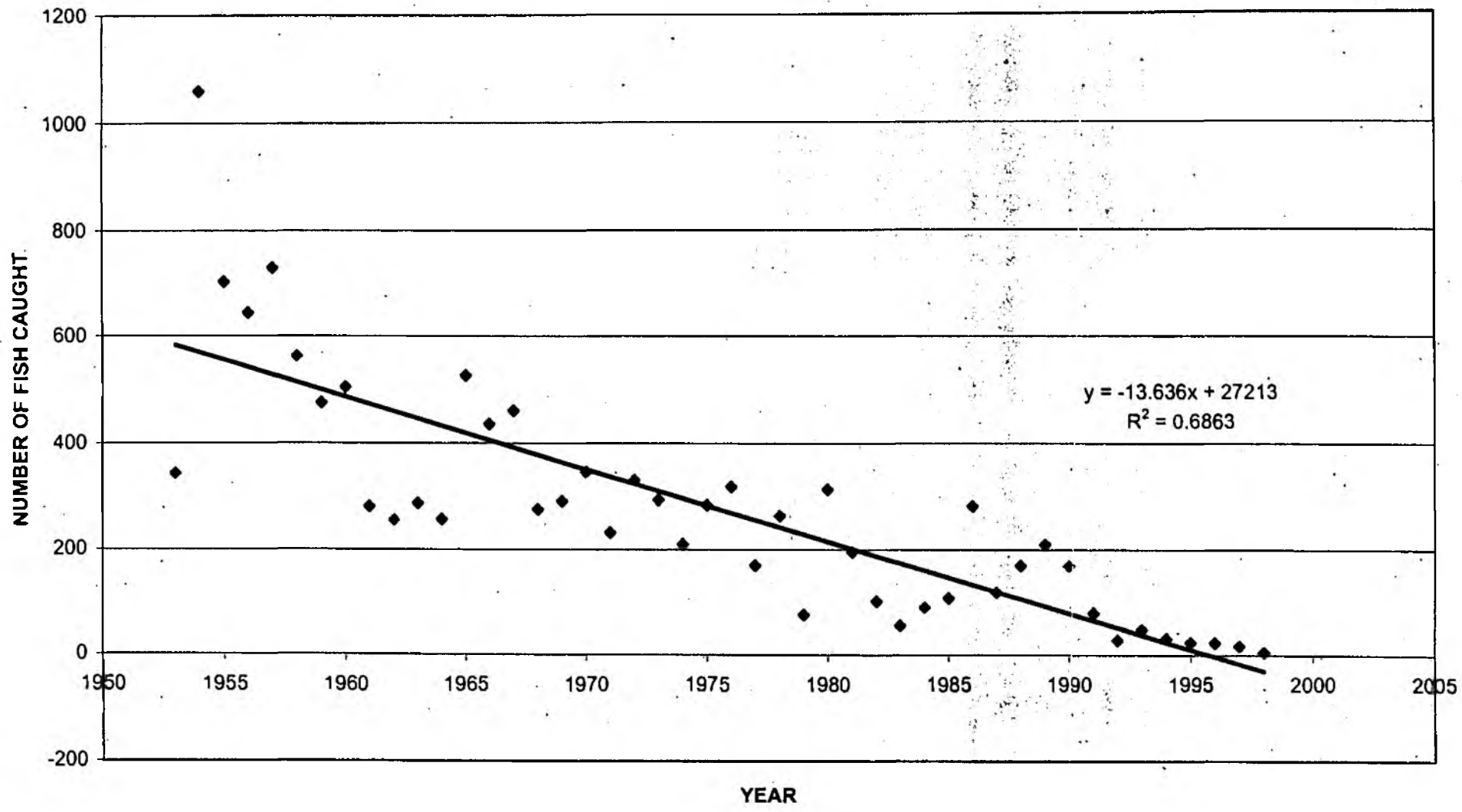


FIGURE 4: NET SEA TROUT CATCHES FROM 1953 TO 1998 -RIVER TEIGN

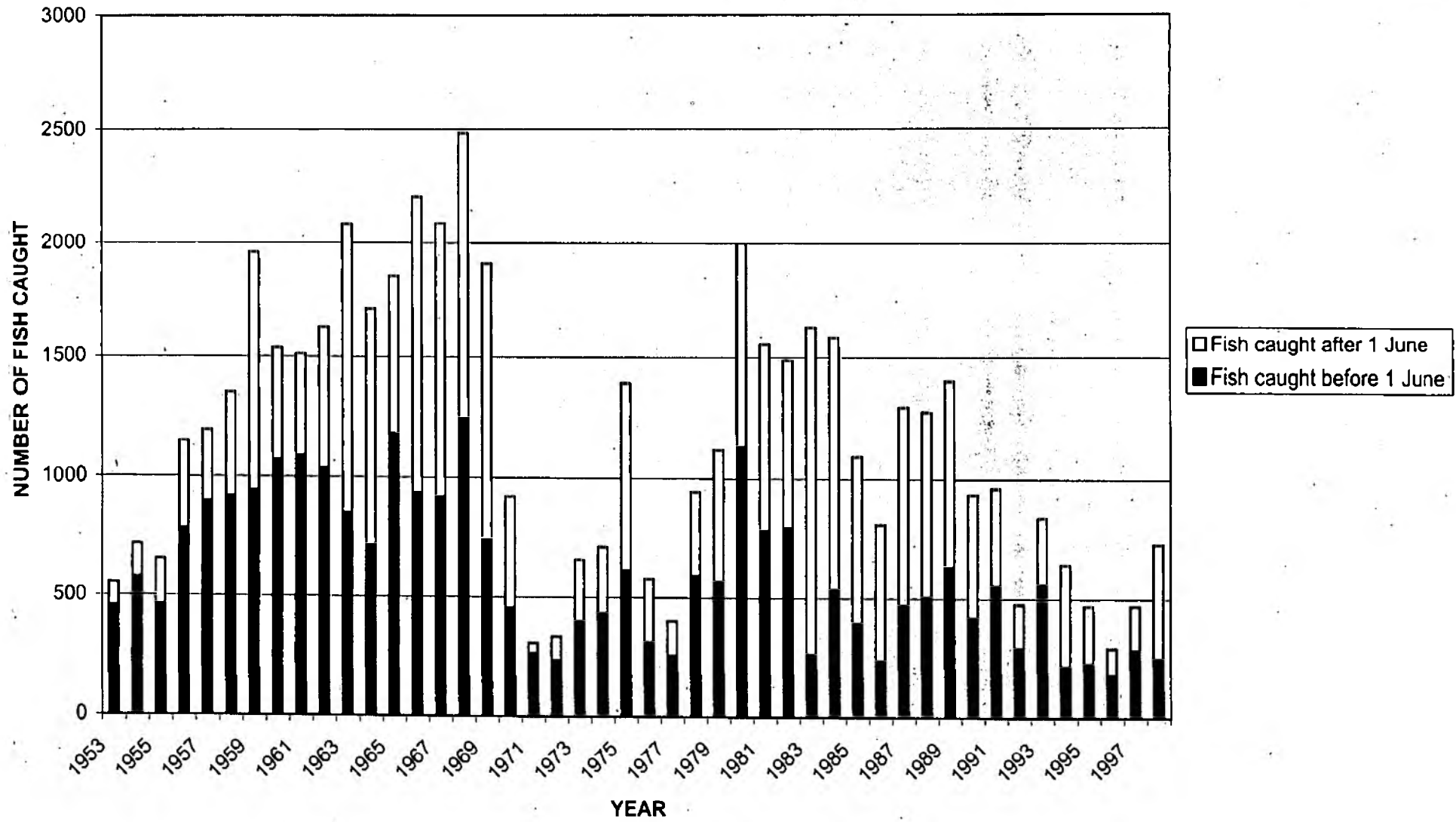


FIGURE 5: TOTAL SEA TROUT NET CATCHES FROM 1953 TO 1998 - RIVER TEIGN

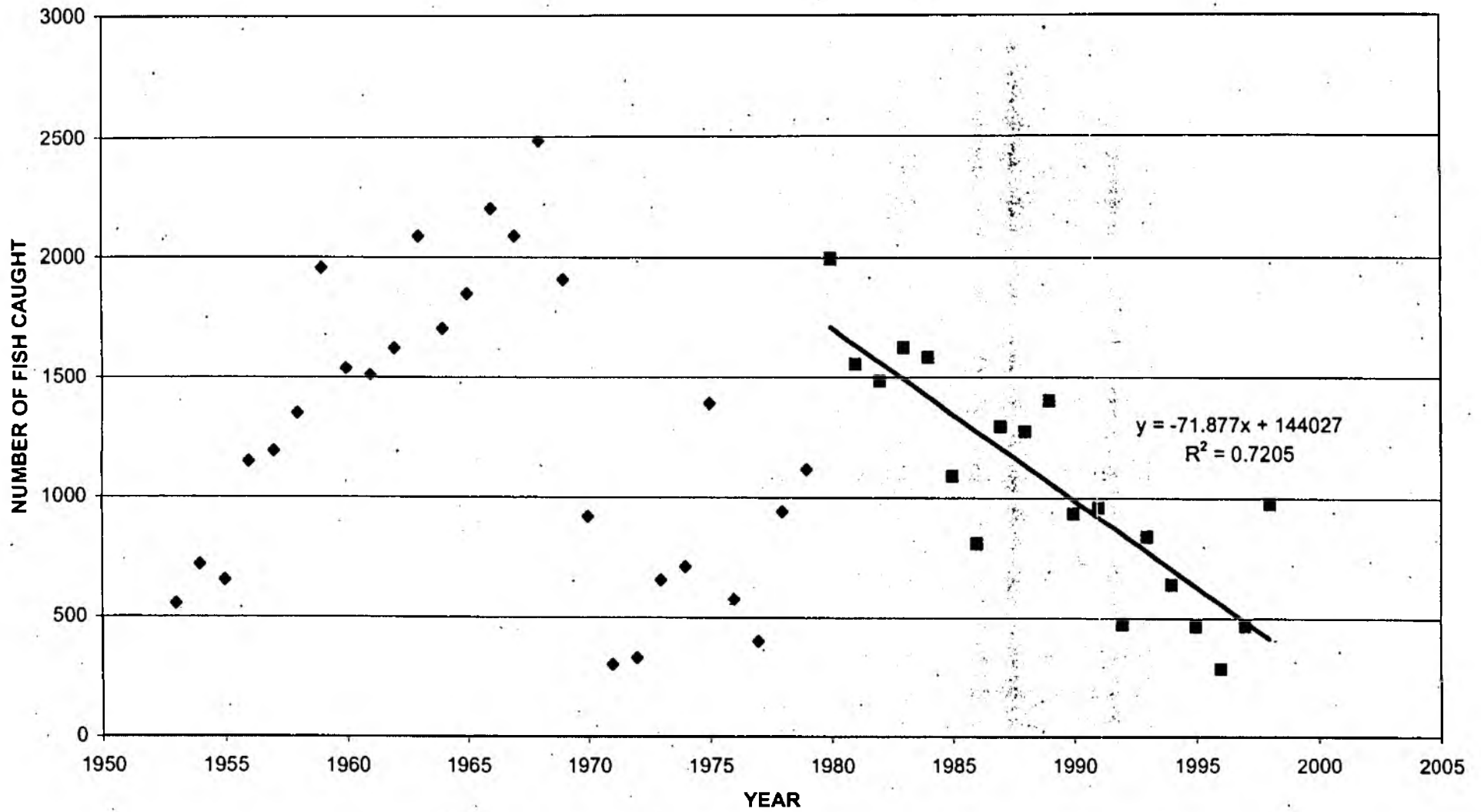


FIGURE 6: PREJUNE NET SEA TROUT CATCHES FROM 1953 TO 1998 - RIVER TEIGN

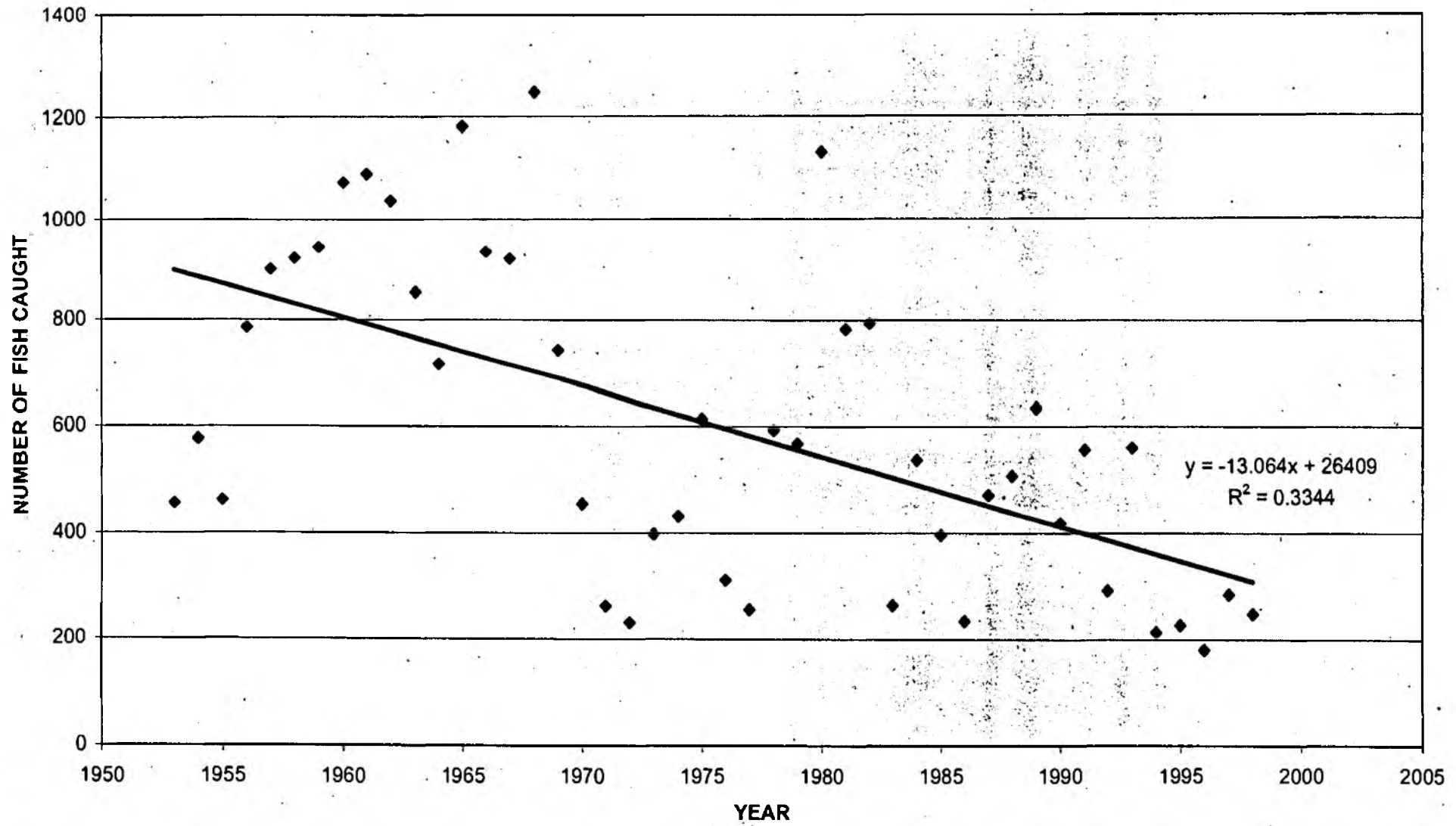


FIGURE 7: ROD SALMON CATCHES FROM 1966 TO 1998 - RIVER TEIGN

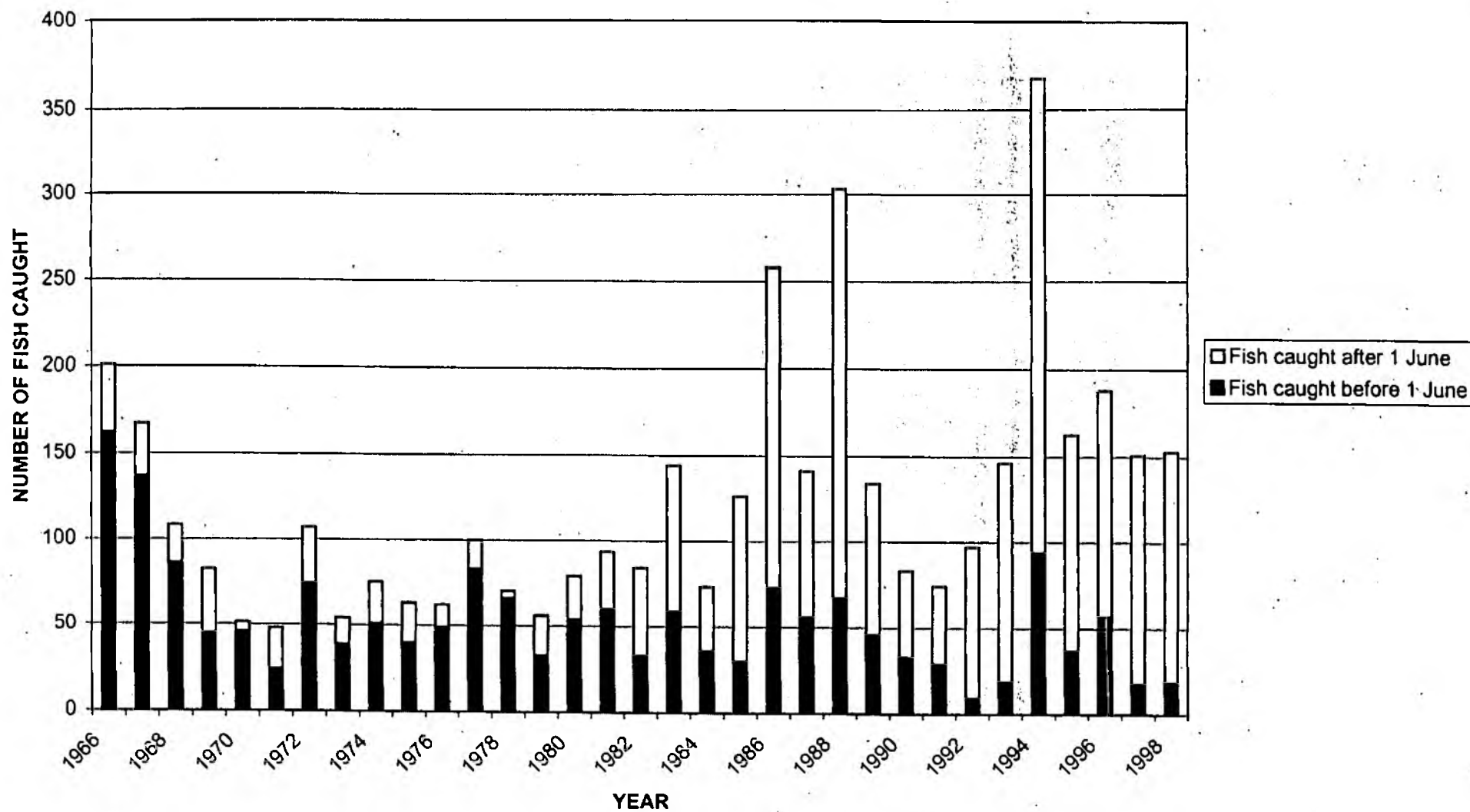


FIGURE 8: TOTAL SALMON ROD CATCHES FROM 1966 TO 1998 - RIVER TEIGN

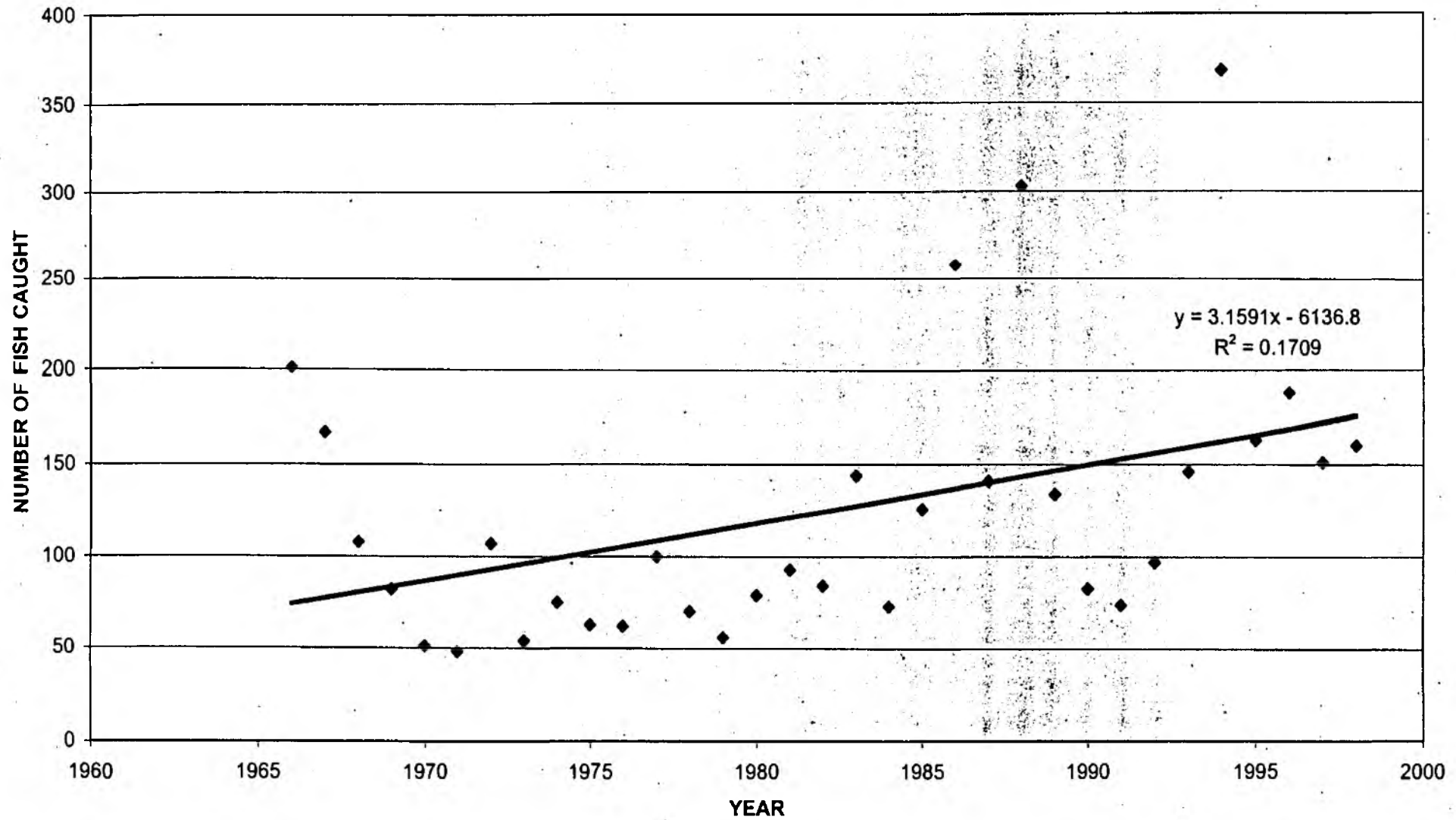


FIGURE 9: PREJUNE ROD SALMON CATCHES FROM 1966 TO 1998 - RIVER TEIGN

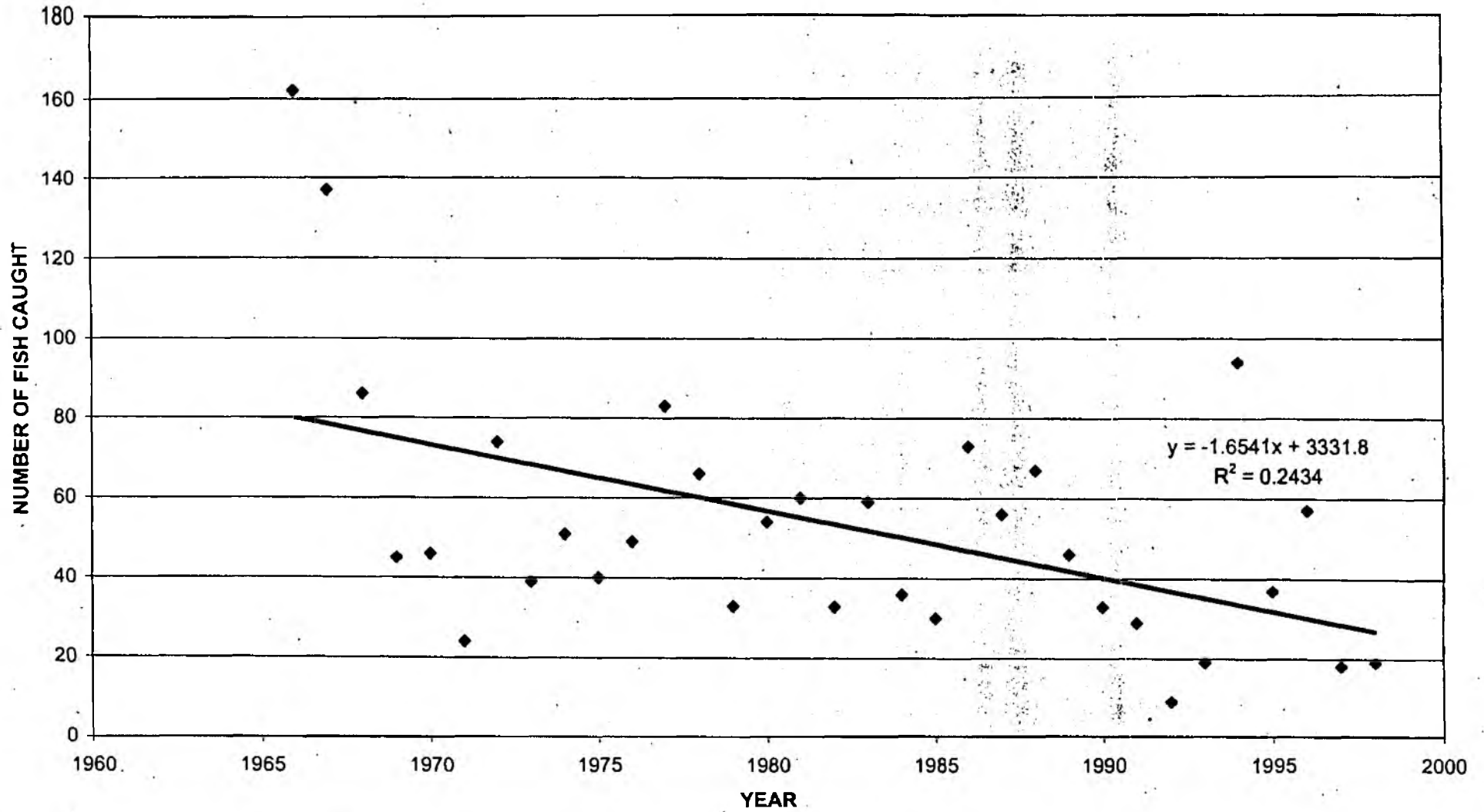


FIGURE 10: SEA TROUT ROD CATCHES FROM 1966 TO 1998 - RIVER TEIGN

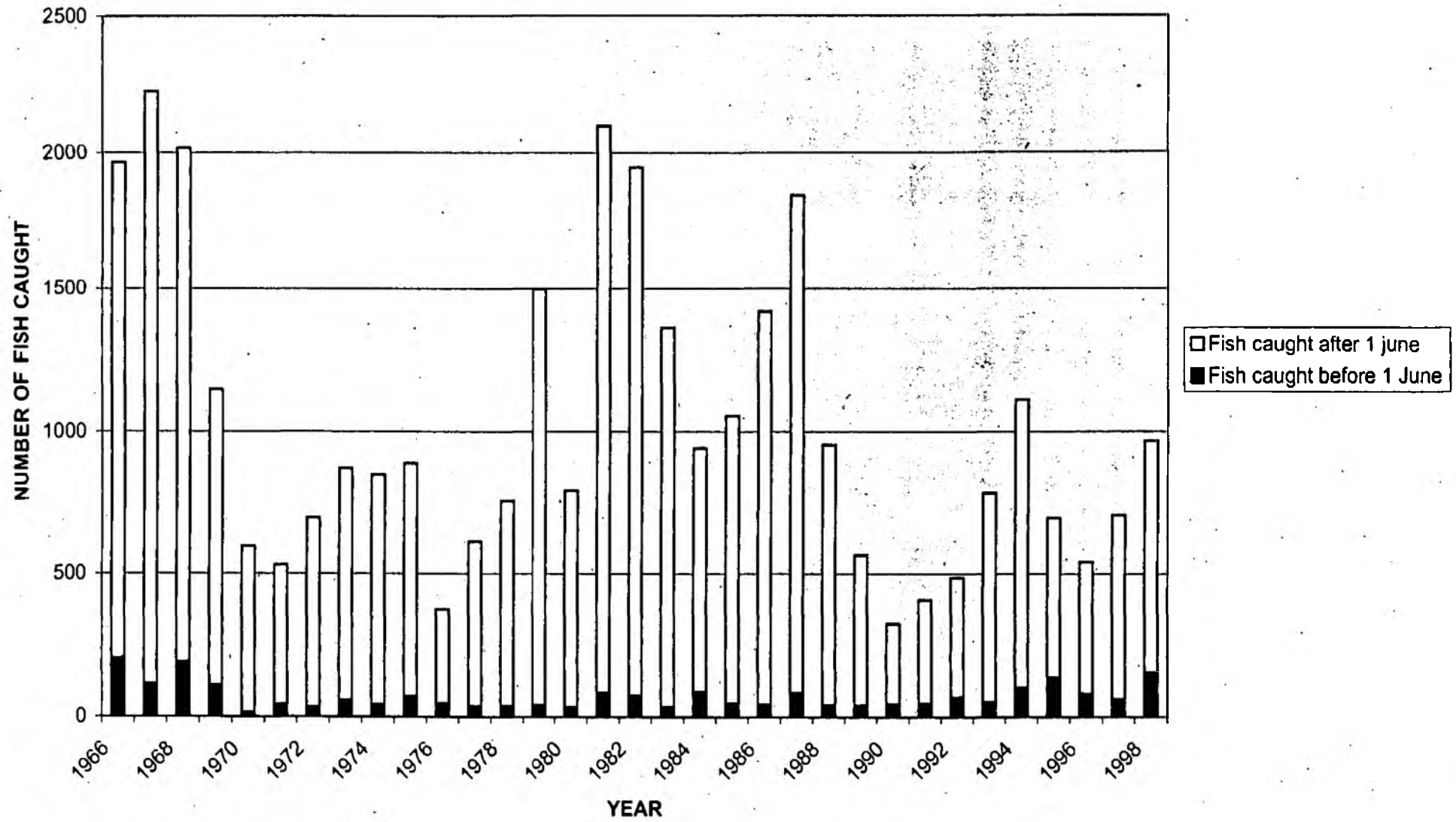


FIGURE 11: TOTAL SEA TROUT ROD CATCHES FROM 1966 TO 1998 - RIVER TEIGN

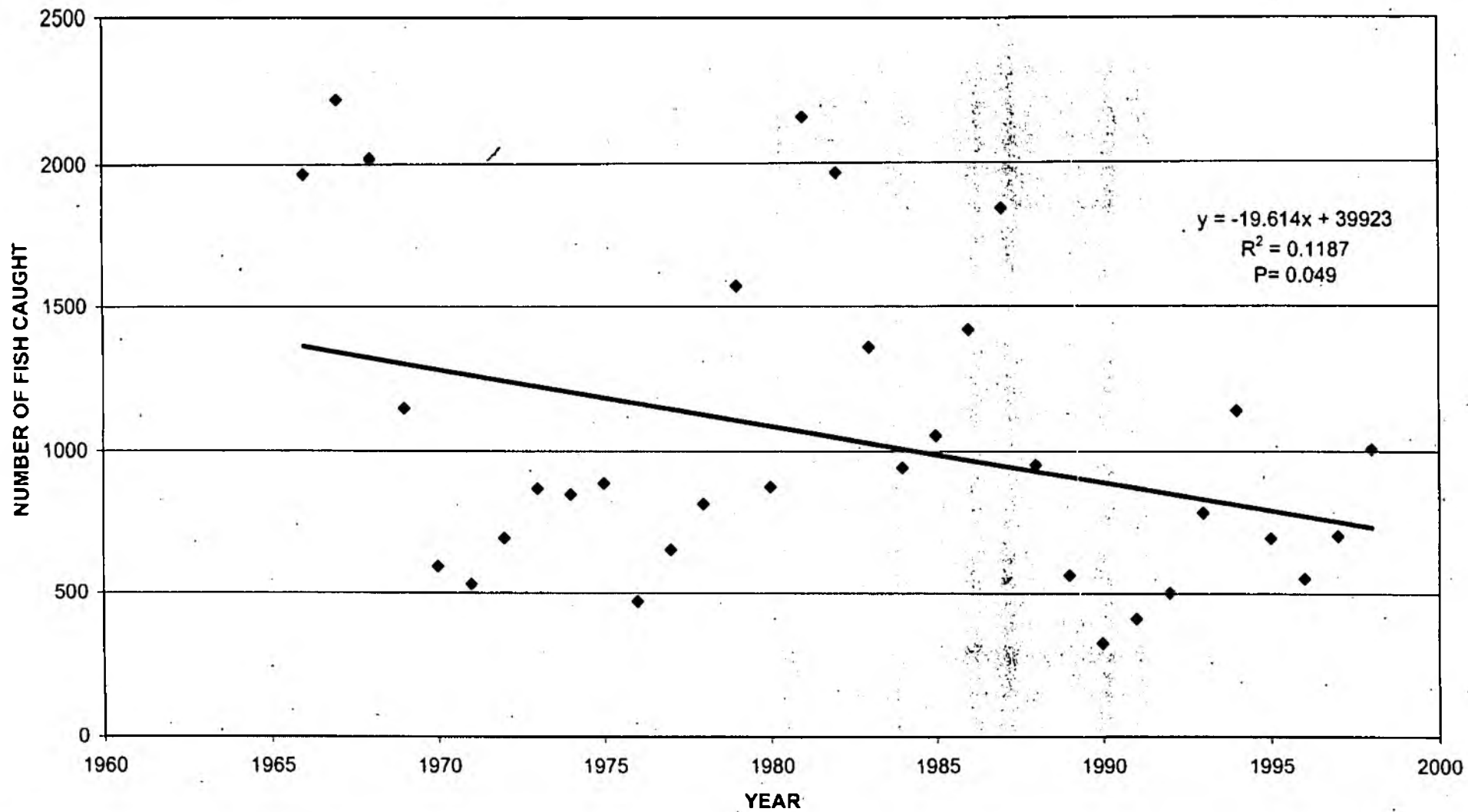
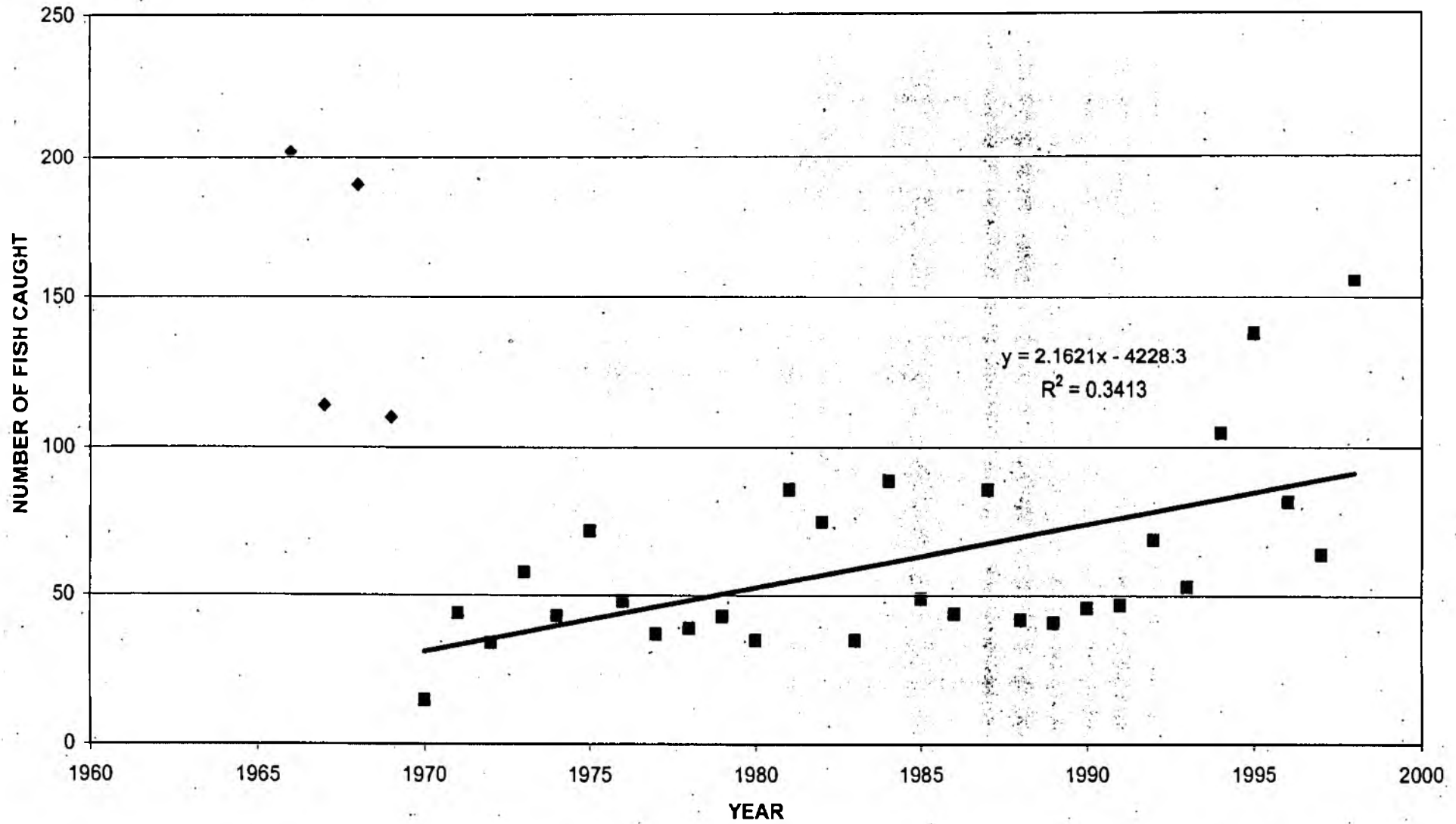
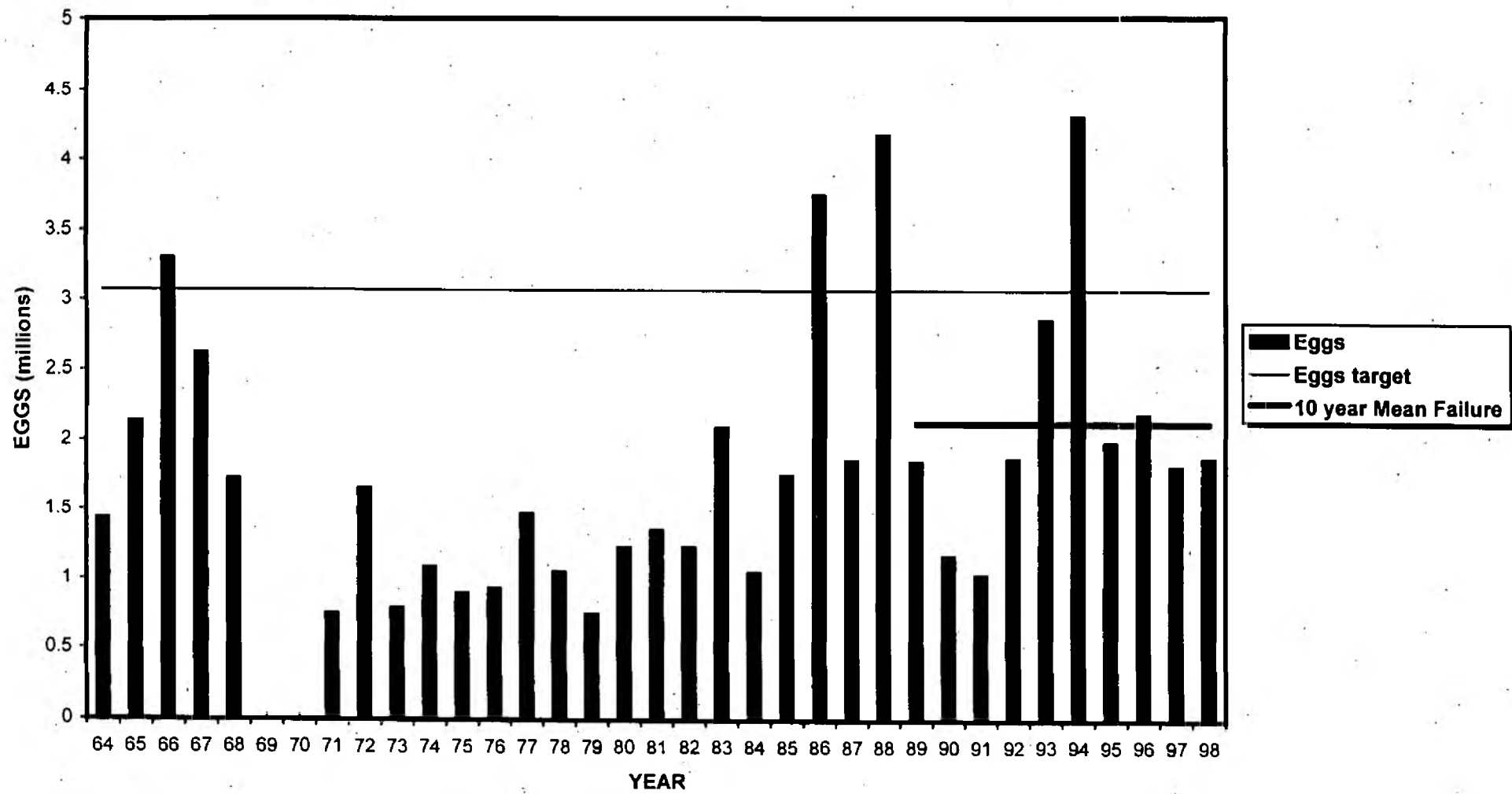


FIGURE 12: PREJUNE SEA TROUT ROD CATCHES FROM 1966 TO 1998 - RIVER TEIGN



**FIGURE 13: Compliance With Salmon Spawning Target,
Rod Extant Exploitation Rate =18.3%, 1964-1998, River TEIGN**



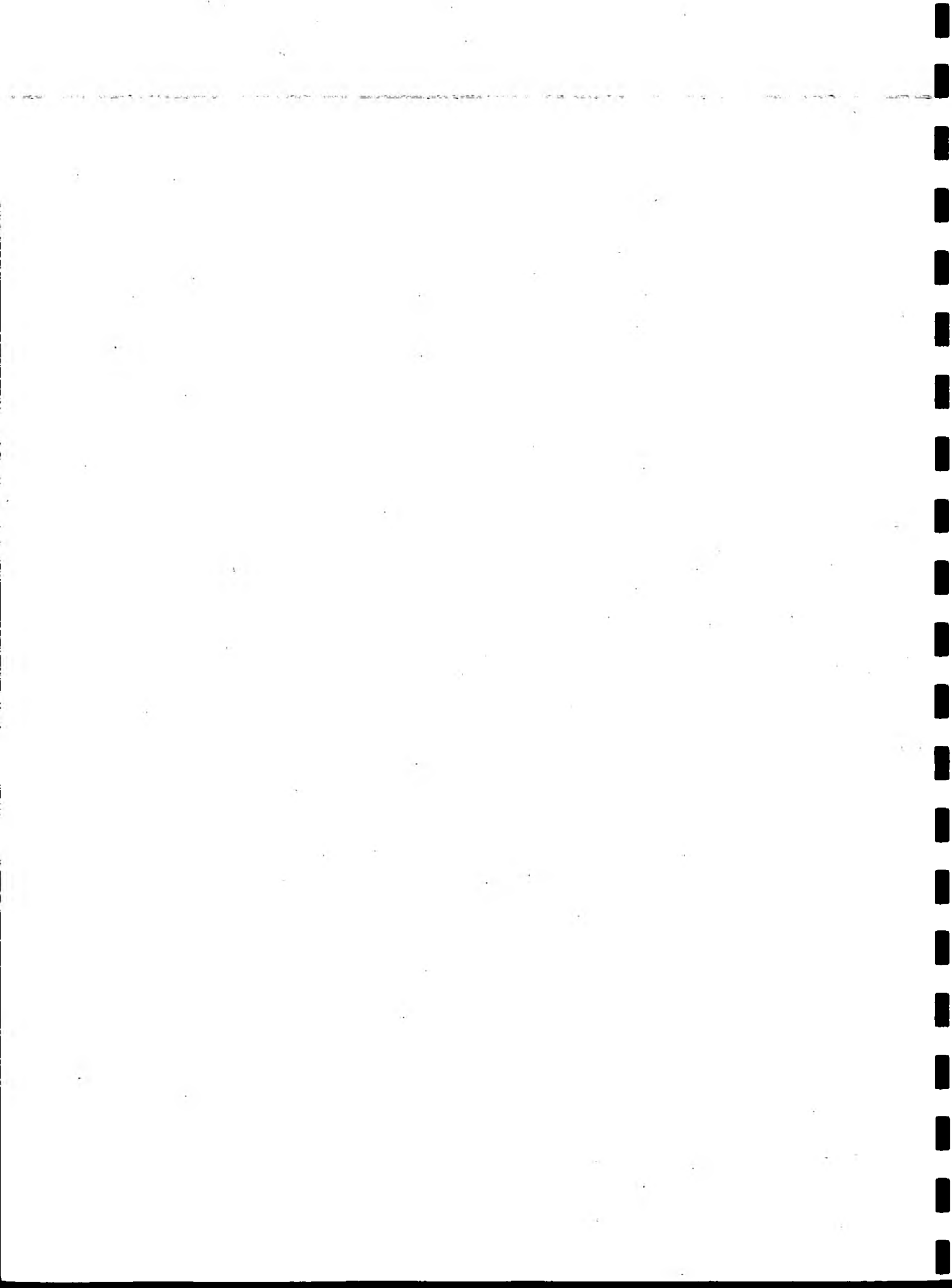


TABLE 1: RIVER TEIGN - NET SALMON CATCHES

Year	Total												Total		TOTAL	
	Jan	Feb	Mar	Apr	May	Jan to May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jun to Dec		unknown
1953	0	0	38	90	215	343	216	244	94	0	0	0	0	554		897
1954	0	0	262	363	438	1063	274	119	25	0	0	0	0	418		1481
1955	0	0	19	231	453	703	432	138	65	0	0	0	0	635		1338
1956	0	0	36	165	442	643	419	256	121	17	0	0	0	813		1456
1957	0	0	21	239	469	729	428	177	76	38	0	0	0	719		1448
1958	0	0	23	173	367	563	260	220	103	17	0	0	0	600		1163
1959	0	0	26	127	323	476	264	214	98	23	0	0	0	599		1075
1960	0	0	44	169	292	505	308	132	37	15	0	0	0	492		997
1961	0	0	46	106	129	281	145	139	51	0	0	0	0	335		616
1962	0	0	11	78	167	256	126	189	135	0	0	0	0	450		706
1963	0	0	4	84	199	287	241	156	276	0	0	0	0	673		960
1964	0	0	33	49	175	257	322	226	157	0	0	0	0	705		962
1965	0	0	33	162	332	527	327	225	73	0	0	0	0	625		1152
1966	0	0	26	126	284	436	437	304	126	0	0	0	0	867		1303
1967	0	0	24	121	316	461	366	410	302	0	0	0	0	1078		1539
1968	0	0	21	74	181	276	255	326	159	0	0	0	0	740		1016
1969	0	0	22	91	178	291	339	654	200	0	0	0	0	1193		1484
1970	0	0	7	94	246	347	386	759	454	0	0	0	0	1599		1946
1971	0	0	6	19	206	231	223	447	151	0	0	0	0	821		1052
1972	0	0	16	96	219	331	264	365	307	0	0	0	0	936		1267
1973	0	0	11	118	165	294	254	381	147	0	0	0	0	782		1076
1974	0	0	9	77	124	210	242	582	231	0	0	0	0	1055		1265
1975	0	0	0	76	208	284	469	840	535	294	0	0	0	2138		2422
1976	0	0	0	74	244	318	201	319	247	108	0	0	0	875		1193
1977	0	0	4	35	131	170	172	261	168	0	0	0	0	601		771
1978	0	0	6	132	126	264	202	172	141	0	0	0	0	515		779
1979	0	0	4	25	46	75	87	461	383	0	0	0	0	931		1006
1980	0	0	1	67	246	314	305	185	169	0	0	0	0	659		973
1981	0	0	2	51	142	195	339	559	271	0	0	0	0	1169		1364
1982	0	0	7	21	74	102	189	177	270	0	0	0	0	636		738
1983	0	0	2	17	36	55	342	708	381	0	0	0	0	1431		1486
1984	0	0	1	9	80	90	162	371	246	0	0	0	0	779		869
1985	0	0	2	15	90	107	229	817	559	0	0	0	0	1605		1712
1986	0	0	4	64	215	283	384	780	299	0	0	0	0	1463		1746
1987	0	0	0	23	95	118	692	1140	582	0	0	0	0	2414		2532
1988	0	0	0	67	103	170	372	629	335	0	0	0	0	1336		1506
1989	0	0	0	4	206	210	253	740	730	0	0	0	0	1723		1933
1990	0	0	0	13	156	169	286	337	254	0	0	0	0	877		1046
1991	0	0	1	13	65	79	72	269	204	0	0	0	0	545		624
1992	0	0	0	6	22	28	128	461	244	0	0	0	0	833		861
1993	0	0	1	8	38	47	108	424	398	0	0	0	0	930		977
1994	0	0	0	1	30	31	268	325	258	0	0	0	0	851		882
1995	0	0	0	3	21	24	69	152	82	0	0	0	0	303		327
1996	0	0	0	3	20	23	33	255	222	0	0	0	0	510		533
1997	0	0	0	6	11	17	55	164	42	0	0	0	0	261		278
1998			0	2	3	5	12	183	214					409		414

TABLE 2: RIVER TEIGN - NET SEA TROUT CATCHES

Year	Jan	Feb	Mar	Apr	May	Total							Jun to Dec	unknown	TOTAL
						Jan to May	Jun	Jul	Aug	Sep	Oct	Nov			
1953	0	0	62	175	219	456	91	7	0	0	0	0	98	0	554
1954	0	0	17	272	288	577	111	26	2	0	0	0	139	0	716
1955	0	0	16	159	287	462	146	43	2	0	0	0	191	0	653
1956	0	0	25	325	435	785	280	63	18	3	0	0	364	0	1149
1957	0	0	64	342	492	898	235	50	11	0	0	0	296	0	1194
1958	0	0	48	326	546	920	347	65	17	0	0	0	429	0	1349
1959	0	0	50	258	636	944	822	172	20	0	0	0	1014	0	1958
1960	0	0	57	406	608	1071	412	56	0	0	0	0	468	0	1539
1961	0	0	271	409	407	1087	280	122	23	0	0	0	425	0	1512
1962	0	0	11	293	732	1036	424	128	34	0	0	0	586	0	1622
1963	0	0	16	248	589	853	888	331	12	0	0	0	1231	0	2084
1964	0	0	65	237	413	715	638	318	33	0	0	0	989	0	1704
1965	0	0	94	417	671	1182	482	151	32	0	0	0	665	0	1847
1966	0	0	29	214	692	935	995	251	22	0	0	0	1268	0	2203
1967	0	0	29	223	668	920	1022	124	20	0	0	0	1166	0	2086
1968	0	0	67	408	773	1248	1126	102	5	0	0	0	1233	0	2481
1969	0	0	40	244	458	742	849	284	33	0	0	0	1166	0	1908
1970	0	0	5	109	341	455	397	64	6	0	0	0	467	0	922
1971	0	0	11	55	196	262	43	0	0	0	0	0	43	0	305
1972	0	0	1	55	175	231	60	36	5	0	0	0	101	0	332
1973	0	0	15	183	200	398	227	25	6	0	0	0	258	0	656
1974	0	0	18	143	271	432	172	95	12	0	0	0	279	0	711
1975	0	0	0	113	501	614	570	204	4	0	0	0	778	0	1392
1976	0	0	0	71	240	311	189	76	2	0	0	0	267	0	578
1977	0	0	7	102	147	256	124	18	4	0	0	0	146	0	402
1978	0	0	10	207	376	593	244	96	10	0	0	0	350	0	943
1979	0	0	7	151	410	568	404	137	9	0	0	0	550	0	1118
1980	0	0	16	469	648	1133	635	213	16	0	0	0	864	0	1997
1981	0	0	8	253	521	782	692	82	3	0	0	0	777	0	1559
1982	0	0	13	228	552	793	546	142	5	0	0	0	693	0	1486
1983	0	0	1	36	227	264	1086	265	14	0	0	0	1365	0	1629
1984	0	0	3	18	516	537	777	268	7	0	0	0	1052	0	1589
1985	0	0	2	61	333	396	509	175	12	0	0	0	696	0	1092
1986	0	0	2	41	192	235	395	168	10	0	0	0	573	0	808
1987	0	0	0	96	376	472	716	106	6	0	0	0	828	0	1300
1988	0	0	3	164	341	508	599	158	14	0	0	0	771	0	1279
1989	0	0	0	30	604	634	625	127	21	0	0	0	773	0	1407
1990	0	0	0	39	380	419	427	83	7	0	0	0	517	0	936
1991	0	0	2	206	348	556	217	176	13	0	0	0	406	0	962
1992	0	0	0	87	205	292	141	37	6	0	0	0	184	0	476
1993	0	0	13	204	343	560	212	54	11	0	0	0	277	0	837
1994	0	0	1	17	196	214	337	80	11	0	0	0	428	0	642
1995	0	0	0	17	210	227	206	34	2	0	0	0	242	0	468
1996	0	0	0	29	152	181	85	22	3	0	0	0	110	0	291
1997	0	0	1	101	183	285	173	12	1	0	0	0	186	0	471
1998			0	69	179	248	85	183	214				482	0	730

TABLE 3: RIVER TEIGN - ROD SALMON CATCHES

Year	Total												Total		TOTAL	
	Jan	Feb	Mar	Apr	May	Jan to May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jun to Dec		unknown
1966	0	27	47	41	47	162	18	7	14	0	0	0	0	39		201
1967	0	29	35	31	42	137	13	9	7	1	0	0	0	30		167
1968	0	23	28	18	17	86	6	9	6	1	0	0	0	22		108
1969	0	4	15	10	16	45	21	7	9	0	0	0	0	37		82
1970	0	5	25	16	0	46	5	0	0	0	0	0	0	5		51
1971	0	8	10	6	0	24	13	3	8	0	0	0	0	24		48
1972	0	13	19	16	26	74	25	4	4	0	0	0	0	33		107
1973	0	4	15	7	13	39	5	5	5	0	0	0	0	15		54
1974	0	8	14	17	12	51	5	1	16	2	0	0	0	24		75
1975	0	5	10	18	7	40	4	6	6	6	0	0	1	23		63
1976	8	3	20	14	4	49	2	8	0	0	0	0	3	13		62
1977	6	8	23	19	27	83	5	1	11	0	0	0	0	17		100
1978	11	4	28	15	8	66	1	0	2	1	0	0	0	4		70
1979	0	1	14	9	9	33	6	5	12	0	0	0	0	23		56
1980	0	12	18	14	10	54	15	5	5	0	0	0	0	25		79
1981	0	10	16	15	19	60	8	3	3	19	0	0	0	33		93
1982	0	5	19	6	3	33	4	10	37	0	0	0	0	51		84
1983	0	7	9	19	24	59	7	5	19	54	0	0	0	85		144
1984	0	7	10	2	17	36	2	5	3	27	0	0	0	37		73
1985	0	3	7	10	10	30	12	6	51	27	0	0	0	96		126
1986	0	5	5	30	33	73	18	24	89	54	0	0	0	185		258
1987	0	10	14	17	15	56	24	15	19	27	0	0	0	85		141
1988	0	9	15	22	21	67	19	78	62	77	0	0	0	236		303
1989	0	6	15	17	8	46	15	12	26	35	0	0	0	88		134
1990	0	1	3	13	16	33	13	12	9	16	0	0	0	50		83
1991	0	6	5	8	10	29	12	14	3	16	0	0	0	45		74
1992	0	1	5	2	1	9	8	9	33	38	0	0	0	88		97
1993	0	3	1	5	10	19	9	19	10	89	0	0	0	127		146
1994	0	9	11	25	49	94	49	25	48	152	0	0	0	274		368
1995	0	1	7	7	22	37	18	8	3	97	0	0	0	126		163
1996	0	0	7	9	41	57	22	8	24	77	0	0	0	131		188
1997	0	1	2	4	11	18	26	10	43	54	0	0	0	133		151
1998	0	1	2	10	6	19	18	23	17	76	0	0	0	134	7	160

TABLE 4: RIVER TEIGN - ROD SEA TROUT CATCHES

Year						Total								Total		TOTAL
	Jan	Feb	Mar	Apr	May	Jan to May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jun to Dec	unknown	
1966	0	12	37	57	96	202	334	558	543	328	0	0	0	1763	0	1965
1967	0	0	12	29	73	114	316	639	635	522	0	0	0	2112	0	2226
1968	0	0	7	34	149	190	255	486	754	333	0	0	0	1828	0	2018
1969	0	0	9	18	83	110	167	340	451	79	0	0	0	1037	0	1147
1970	0	0	3	5	7	15	43	136	243	159	0	0	0	581	0	596
1971	0	0	1	9	34	44	54	95	244	95	0	0	0	488	0	532
1972	0	0	3	8	23	34	46	127	28	287	173	0	0	661	0	695
1973	0	0	4	20	34	58	94	216	352	151	0	0	0	813	0	871
1974	0	0	0	6	37	43	56	206	288	216	39	0	0	805	0	848
1975	0	0	4	33	35	72	65	206	162	292	92	0	0	817	0	889
1976	0	0	7	14	27	48	16	17	25	202	67	0	0	327	95	470
1977	0	0	2	7	28	37	40	114	221	154	46	0	0	575	45	657
1978	0	0	4	19	16	39	58	173	242	154	88	0	0	715	62	816
1979	0	0	4	8	31	43	111	247	559	402	137	0	0	1456	71	1570
1980	0	0	4	12	19	35	46	145	286	227	54	0	0	758	82	875
1981	0	0	7	13	66	86	180	471	923	344	93	0	0	2011	61	2158
1982	0	0	5	9	61	75	126	517	691	428	108	0	0	1870	20	1965
1983	0	0	1	9	25	35	82	282	331	489	140	0	0	1324	0	1359
1984	0	0	10	3	76	89	114	196	216	233	94	0	0	853	2	944
1985	0	0	0	8	41	49	152	270	332	206	47	0	0	1007	0	1056
1986	0	0	4	9	31	44	81	345	544	294	111	0	0	1375	0	1419
1987	0	0	7	19	60	86	199	571	576	375	34	0	0	1755	0	1841
1988	0	0	0	9	33	42	72	301	335	184	19	0	0	911	0	953
1989	0	0	2	7	32	41	93	142	92	170	27	0	0	524	0	565
1990	0	0	1	3	42	46	56	79	90	32	22	0	0	279	0	325
1991	0	0	1	4	42	47	40	120	114	85	2	0	0	361	4	412
1992	0	0	1	19	49	69	39	101	136	142	0	0	0	418	15	502
1993	0	0	8	9	36	53	52	210	230	239	0	0	0	731	0	784
1994	0	0	5	22	78	105	115	263	380	239	0	0	0	997	38	1140
1995	0	0	2	34	102	138	126	135	111	185	0	0	1	558	0	696
1996	0	0	0	15	67	82	70	115	148	127	0	0	0	480	11	553
1997	0	0	2	16	46	64	108	192	179	160	0	0	2	641	0	705
1998	0	1	5	40	110	156	135	208	275	194	0	0	0	812	40	1008

TABLE 5: RIVER TEIGN - SALMON SURVEYS 1963 to 1998

<u>WATERCOURSE</u>	<u>SITE NAME</u>	<u>SALMON FRY (0+)</u>				
		<u>1963</u>	<u>1972</u>	<u>1975</u>	<u>1979</u>	<u>1990</u>
NORTH TEIGN	Taignhead Farm	*	-	-	-	0.00
	Manger Waterfall	*	-	-	-	-
	Teign-e-ver	*	*	-	-	0.45
	Leigh House	*	*	2.90	-	56.23
WALLA BROOK	Wallbrook Bridge	*	*	-	-	58.40
BLACKATON BROOK	East Weck	-	-	-	-	-
	Ash Bridge	-	-	-	-	-
	Highbury Bridge	-	-	5.20	11.47	14.03
MOORTOWN BROOK	U/s Blackaton Bridge	-	-	-	-	-
SOUTH TEIGN	U/s Femworthy	-	-	-	-	-
	Teignworthy	*	*	-	-	0.00
	Leigh Bridge	*	*	2.30	3.08	20.75
ASSYCOMBE STREAM	Assycombe Bridge	-	-	-	-	-
METHERALL STREAM	Lodge Bridge	-	-	-	-	-
TEIGN	Chagford Leat	*	*	-	-	-
	Chagford Weir	*	*	-	-	-
	Rushford Mill	*	*	20.90	6.19	47.05
	Sandy Park / Dogmarsh Bridge	*	*	-	-	-
	Black Pool	*	*	-	-	-
	Bad Rock	*	*	3.20	1.51	-
	Sharp Tor	-	-	-	-	-
	Fingle Bridge	*	-	-	-	21.51
	Ten Beeches	-	-	-	-	-
	Clifford Bridge	-	-	-	-	25.03
	Cod Wood	-	-	-	-	-
	Steps Bridge	*	*	0.70	23.34	21.40
	Sowton Weir	*	*	-	-	-
	Bridford Weir	-	-	-	-	-
	Higher Orchard Pool	-	*	-	23.88	21.64
	Ashton	*	-	-	-	-
	Canonteign Barton	*	-	-	-	-
	Hyner Farm	-	*	-	11.73	16.16
	Trusham	*	-	-	-	-
	Spara Bridge	-	-	-	-	-
	Hyner	-	-	-	-	-
	Crowcombe Bridge	-	-	-	-	-
	Lyneham	-	-	-	-	-
	Chudleigh Bridge	*	*	-	-	-
	Chudleigh Run	-	-	-	-	-
	New Bridge	*	*	-	12.34	1.43
Preston	-	-	-	-	-	

SALMON PARR (1+)

<u>1993</u>	<u>1996</u>	<u>1963</u>	<u>1972</u>	<u>1975</u>	<u>1979</u>	<u>1990</u>	<u>1993</u>	<u>1996</u>
0.00	0.00	0.00	-	-	-	0.00	0.00	0.00
-	-	0.00	-	-	-	-	-	-
24.90	6.72	0.00	0.20	-	-	3.15	13.51	6.22
59.29	103.68	3.30	11.60	4.50	-	18.03	38.68	29.36
7.26	5.65	0.00	0.00	-	-	10.40	0.00	7.26
10.35	0.76	-	-	-	-	-	0.64	8.86
12.15	8.91	-	-	-	-	-	3.52	5.84
6.16	13.03	1.00	15.30	8.90	9.44	8.87	11.65	12.14
24.65	30.04	-	-	-	-	-	21.42	23.85
0.00	0.00	-	-	-	-	-	0.00	0.00
0.00	0.00	0.70	1.20	-	-	0.00	0.00	4.56
1.86	3.85	1.30	11.00	7.90	11.27	8.99	4.24	4.45
0.00	0.00	-	-	-	-	-	0.00	0.00
0.00	0.00	-	-	-	-	-	0.00	0.00
-	-	2.40	2.30	-	-	-	-	-
-	-	5.10	8.10	-	-	-	-	-
#	#	6.00	11.10	8.90	4.11	8.41	#	#
#	#	4.70	-	-	-	-	#	#
-	-	9.80	3.80	-	-	-	-	-
-	-	1.10	8.90	7.50	6.21	-	-	-
#	#	-	-	-	-	-	#	#
#	#	15.20	-	-	-	8.08	#	#
#	#	-	-	-	-	-	#	#
#	#	7.00	-	-	-	9.87	#	#
#	#	-	-	-	-	-	#	#
#	#	5.80	9.40	6.30	9.28	10.20	#	#
#	#	15.60	8.20	-	-	-	#	#
#	#	-	-	-	-	-	#	#
#	#	14.20	23.00	-	2.13	11.27	#	#
-	-	5.40	-	-	-	-	-	-
-	-	4.60	-	-	-	-	-	-
-	-	2.40	8.00	-	6.49	7.85	-	-
-	-	1.80	-	-	-	-	-	-
#	#	-	-	-	-	-	#	#
#	#	-	-	-	-	-	#	#
#	#	-	-	-	-	-	#	#
#	#	-	-	-	-	-	#	#
-	-	1.90	2.70	-	-	-	-	-
#	#	-	-	-	-	-	#	#
#	#	2.30	5.40	-	4.32	4.52	#	#
#	#	-	-	-	-	-	#	#

<u>WATERCOURSE</u>	<u>SITE NAME</u>	<u>SALMON FRY (0+)</u>				
		<u>1963</u>	<u>1972</u>	<u>1975</u>	<u>1979</u>	<u>1990</u>
PADLEY STREAM	Millhouse	-	-	-	-	-
WEEKE BROOK	Crannaford Bridge	-	-	-	-	-
THE WHITE WATER	Mill End	-	-	-	-	-
WHIDDON BROOK	Forder	-	-	-	-	0.00
FINGLE BROOK	East Fingle Bridge	-	-	-	-	-
	Drewston Wood	-	-	-	-	5.56
SCOTLEY BROOK	Woodbrooke	-	-	-	-	0.00
CLIFFORD BROOK	W/s Teign Confluence	-	-	-	-	-
DOCCOMBE BROOK	D/s Doccombe Mill	-	-	-	-	-
REEDY BROOK	Dunsford D/s	-	-	-	-	0.00
	Lower Reedy Brook	-	-	-	-	-
SOWTON BROOK	Sowton Barton	-	-	-	-	0.00
ROOKERY BROOK	Bridford Bridge	*	-	-	-	-
	Stone	-	-	-	-	0.00
CHRISTOW STREAM	Gidleigh Meadow	-	-	-	-	-
ASHTON STREAM	Place Barton	-	-	-	-	0.00
SHOOTAMoor BROOK	D/s B3193 Road Bridge	-	-	-	-	-
BEADON BROOK	Hyner Bridge	-	-	-	-	0.00
BRAMBLE BROOK	Middle Copse D/S	-	-	-	-	0.60
	Shortridge	-	-	-	-	-
KATE BROOK	Lawell House	-	-	-	-	0.00
	Harcombe	-	-	-	-	-
BOVEY	Greencombe	-	-	-	-	-
	Stiniel Bridge	-	*	0.00	0.00	-
	D/s Wormhill Bridge	*	*	-	-	0.40
	North Bovey Bridge	*	*	-	-	-
	Clapper Bridge	*	*	-	0.00	1.98
	Hisley Woods	*	*	5.10	6.48	7.29
	Willford Bridge	*	*	-	-	-
	Parke Bridge	*	-	-	-	4.66
Little Bovey Bridge	*	*	14.10	17.01	6.81	

SALMON PARR (1+)

<u>1993</u>	<u>1996</u>	<u>1989</u>	<u>1963</u>	<u>1972</u>	<u>1975</u>	<u>1979</u>	<u>1990</u>	<u>1993</u>	<u>1996</u>
1.81	0.00		-	-	-	-	-	0.00	1.43
16.66	0.00		-	-	-	-	-	3.03	1.28
3.47	7.58		-	-	-	-	-	10.42	2.04
0.00	6.11		-	-	-	-	0.00	13.70	1.69
20.14	17.96		-	-	-	-	-	0.00	4.07
14.92	1.28		-	-	-	-	2.08	1.24	14.06
0.00	0.00		-	-	-	-	0.68	1.67	0.00
0.00	0.00		-	-	-	-	-	0.00	0.00
0.00	0.00		-	-	-	-	-	0.00	0.00
0.00	0.00		-	-	-	-	0.00	-	-
0.00	0.00		-	-	-	-	-	0.00	2.15
5.56	15.10		-	-	-	-	0.00	0.00	1.62
0.00	0.00		27.60	-	-	-	-	-	-
0.00	0.00		-	-	-	-	0.00	0.00	0.00
0.00	0.00		-	-	-	-	-	0.00	0.00
0.00	0.00		-	-	-	-	0.00	0.00	0.00
4.78	2.43		-	-	-	-	-	0.00	0.00
0.38	0.00		-	-	-	-	0.00	0.00	0.00
0.00	0.00		-	-	-	-	5.36	-	-
0.00	5.36		-	-	-	-	-	0.66	5.00
0.00	0.00		-	-	-	-	0.00	0.00	0.00
0.00	0.00		-	-	-	-	-	0.00	0.00
0.00	0.00		-	-	-	-	-	0.00	0.00
0.00	0.00		-	30.30	18.20	0.00	-	0.00	1.18
15.12	9.08		2.20	0.40	-	-	1.60	5.61	11.07
0.00	0.00		0.90	0.20	-	-	-	-	-
0.00	10.76		0.80	2.60	-	0.00	25.00	19.83	21.63
0.00	0.00		7.90	7.50	4.50	4.71	2.82	0.35	5.13
-	-		33.50	5.10	-	-	-	-	-
2.49	#		5.50	-	-	-	4.90	3.74	#
#	#		7.30	3.70	4.30	2.68	2.20	#	#

WATERCOURSE	SITE NAME	SALMON FRY (0+)							SALMON PARR (1+)						
		1963	1972	1975	1979	1990	1993	1996	1999	1963	1972	1975	1979	1990	1993
BECKA BROOK	<i>D/s Beckaford Bridge</i>	-	-	-	-	-	0.00	0.00	-	-	-	-	-	0.00	0.00
WRAY BROOK	Wray Barton	-	-	-	-	0.00	0.00	0.00	-	-	-	-	0.00	0.00	0.00
	Casely Bridge	*	*	-	0.00	-	0.00	0.00	0.00	0.00	-	0.00	-	0.00	0.64
	Knowle	-	-	-	-	0.00	0.36	1.41	-	-	-	-	0.79	0.36	2.56
LIVERTON BROOK	D/s Ilington	-	-	-	-	-	0.00	0.00	-	-	-	-	-	0.00	0.00
	Stover Bridge	-	*	-	-	-	0.00	3.96	-	1.10	-	-	-	0.00	0.00
ABBROOK STREAM	D/s Roadbridge / Fishwick	-	-	-	-	0.00	0.00	2.87	-	-	-	-	0.00	6.60	2.54
LEMON	Sigford	-	-	-	-	-	0.00	0.00	-	-	-	-	-	0.00	0.00
	Halfway House	-	*	-	0.00	0.00	0.00	0.00	-	0.00	-	0.00	0.00	0.00	4.11
	Mortey	-	-	-	-	0.00	0.00	0.00	-	-	-	-	0.00	0.00	6.94
	Bradley Manor	-	-	-	45.60	3.23	19.42	15.91	-	-	-	15.28	5.88	17.03	15.25
ALLER BROOK	Aller Orchard	-	-	-	-	0.00	-	-	-	-	-	-	0.35	-	

N.B. Densities are given in Estimated Numbers of fish per 100 square metres.

KEY

- # = Species present (semi-quantitative survey)
- @ = Species absent (semi-quantitative survey)
- * = Fry were ignored during this survey.
- = Site not surveyed.

INACCESSIBLE SITE FOR SALMON ARE IN ITALIC

SOURCE: Steel S, 1997. River Teign Fisheries Survey 1996. Environment Agency Report DEV/FRCN/04/97.

TABLE 6 : RIVER TEIGN - SALMON JUVENILE SURVEY - BALANCED DATA SET

<u>SITE</u>	FRY SALMON			PARR SALMON		
	<u>1990</u>	<u>1993</u>	<u>1996</u>	<u>1990</u>	<u>1993</u>	<u>1996</u>
1	0.45	24.90	6.72	3.15	13.51	6.22
2	56.23	59.29	103.68	18.03	38.68	29.36
3	58.40	7.26	5.65	10.40	0.00	7.26
4	14.03	6.16	13.03	8.87	11.65	12.14
5	0.00	0.00	0.00	0.00	0.00	4.56
6	20.75	1.86	3.85	6.99	4.24	4.45
7	0.00	0.00	6.11	0.00	13.70	1.69
8	5.56	14.92	1.28	2.08	1.24	14.06
9	0.00	0.00	0.00	0.68	1.67	0.00
10	0.00	5.56	15.10	0.00	0.00	1.62
11	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.38	0.00	0.00	0.00	0.00
14	0.40	15.12	9.08	1.60	5.61	11.07
15	1.98	0.00	10.76	25.00	19.83	21.63
16	7.29	0.00	0.00	2.82	0.35	5.13
17	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.36	1.41	0.79	0.36	2.56
19	0.00	0.00	2.67	0.00	6.60	2.54
20	0.00	0.00	0.00	0.00	0.00	4.11
21	0.00	0.00	0.00	0.00	0.00	6.94
22	3.23	19.42	15.91	5.86	17.03	15.25
average	7.65	7.06	8.88	3.92	6.11	6.85
standard deviation	20.65	15.15	21.83	6.57	9.66	7.69
confidence at 5 %	8.63	6.33	9.12	2.75	4.04	3.21