

One hundred and fifty years of Mute Swans on the Thames

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Introduction

The custom of marking and pinioning Mute Swans *Cygnus olor* has persisted for many years on the river Thames between central London and Henley, though it has now apparently died out elsewhere except on the rivers Yare and Wensum, near Norwich (Ticehurst 1957). The swans are recorded for the Crown, the reigning monarch being the Seigneur of Swans, and the two Livery companies, the Vintners' and the Dyers', who have a royalty of a game of swans on the Thames (i.e. a right to all the swans on the Thames which are marked with their marks). The Dyers' Company have kept an annual record of the swans counted during swan-upping since 1823 and have most generously made this available.

The colourful pageant of swan-upping involves a four-day survey by boat to count all swans, pinion the young and mark them where appropriate. From 1823 it took place in early August each year, then in 1878 the introduction of the August Bank Holiday resulted in a change to the present date of the second or third week in July. By means of a prior survey the location of breeding birds is known and during swan-upping search is made for all breeding adults and their young. In a few instances when the populations were high, the numbers of other adults were estimated, whilst in some years a shortened course was followed (see later). Despite these minor limitations, the swan-upping figures almost certainly provide a picture of population trends more accurate than is available by most other census methods and there can be few, if any, animal populations in a given area which have been surveyed at a similar period each year for as long as 150 years.

The swan-upping totals

The annual counts extracted from the records of the Dyers' Company for the years 1823-1972 are given in Table I. They show (a) adults with young, i.e. the number of successful breeding birds at the time of swan-upping, (b) the number of young and (c) the number of other adults, i.e. non-breeding birds and those birds which may have bred or attempted to do so but have no young at the time of the survey. For some years the counts are known to be incomplete, including 1851 when the course from Runnymede to Henley was not covered and from 1940-

1950 when the swan-upping began at Putney Bridge instead of central London. The normal course begins near Blackfriars Bridge in central London and so far as is known, this has been the practice in all other years. However, as the records show only where the first swans were encountered, which might be some distance upstream, it is possible that in some years the start was made higher up without this being specifically recorded. This is perhaps unlikely and in any case would not affect the broad picture.

The main trends in the total numbers recorded and the numbers of adults with young are perhaps best illustrated by Figure 1 where three-year moving averages have been used to smooth out the annual fluctuations. The picture is, on the whole, one of rather little variation. Thus for all swans counted, the total for much of the 150 years varied only between 400 and 600 birds. The main exceptions were (a) at the beginning of the recorded counts when totals climbed slowly from a little over 200 to reach the 400 level after ten years or so, (b) a brief period in the 1850's and early 1860's when a total of 600 was exceeded and (c) an astonishing rise to over 1,000 birds, followed by an almost equally rapid fall, in the 1950's and early 1960's. Even these peak figures, however, seem to have been exceeded in earlier centuries, for the secretary of the Venetian Ambassador Capello, writing to his master in 1496 said "It is a truly beautiful thing to behold one or two thousand tame swans upon the river Thames as I and also Your Magnificence have seen" (Ticehurst 1957). The number of successfully breeding birds (adults with young at the time of swan-upping) ranged, with few exceptions, between 50 and 100 almost from the start until the late 1920's. Then it rose above 100 birds until 1950, slowly declining since 1959 to reach the lowest figures recorded, except for the very earliest years.

Although the relative stability of both the total numbers of swans and the successfully breeding birds is perhaps the most striking fact, it is tempting to try to explain the relatively few, although in some cases marked, variations which did occur. It must be said at once that this attempt has largely failed, perhaps in part because our knowledge of the various possible factors affecting swan numbers is inadequate even in recent

years and almost non-existent for the earlier periods. As the fluctuations in the total number of swans and in the number of successfully breeding adults appear to be largely independent, they are examined separately.

Successfully breeding adults and young
The numbers of successfully breeding adults (in pairs) and young have been analysed over 10-year periods for three stretches of the Thames: A—Central London to Putney; B—Putney to Staines;

Table I. Counts at the annual swan-upping on the River Thames, 1823-1972.

Year	Adults with young				Year	Adults with young				Year	Adults with young			
	Young	Other adults	Total	Total		Young	Other adults	Total	Total		Young	Other adults	Total	Total
1823	32	55	159	246	1873	84	173	320	577	1923	76	138	281	495
4	8	19	164	191	4	78	143	325	546	4	74	147	324	545
5	48	72	121	241	5	36	54	320	410	5	82	191	363	636
6	44	71	153	268	6	86	149	275	510	6	82	105	356	543
7	36	69	178	283	7	60	82	278	420	7	92	118	371	581
8	44	74	170	288	8	58	110	281	449	8	110	130	383	623
9	50	93	186	329	9	28	57	312	397	9	112	117	294	523
30	32	60	234	326	80	68	108	214	390	30	132	191	272	595
1	52	108	216	376	1	54	85	233	372	1	148	188	284	620
2	50	72	240	362	2	68	136	213	417	2	90	145	348	583
1833	68	131	217	416	1883	80	144	194	418	1933	110	148	335	613
4	58	126	240	424	4	46	71	241	358	4	110	146	405	661
5	44	99	275	418	5	54	85	209	348	5	116	158	382	656
6	80	165	214	459	6	38	58	193	289	6	118	131	348	597
7	98	200	246	544	7	54	103	199	356	7	118	142	401	661
8	68	127	311	506	8	54	111	191	356	8	174	179	364	717
9	70	110	255	435	9	68	116	177	361	9	130	133	324	587
40	74	144	277	495	90	80	130	168	378	40	(110)	(110)	(252)	(472)*
1	48	80	305	433	1	48	101	229	378	1	(118)	(118)	(242)	(478)*
2	66	199	252	517	2	68	129	229	426	2	(148)	(148)	(159)	(455)*
1843	68	137	298	503	1893	68	120	193	381	1943	(102)	(103)	(201)	(406)*
4	104	175	305	584	4	76	143	190	409	4	(136)	(175)	(128)	(439)*
5	66	100	369	535	5	60	114	213	387	5	(136)	(176)	(139)	(451)*
6	70	103	280	453	6	78	168	242	488	6	(156)	(176)	(113)	(445)*
7	52	86	322	460	7	98	181	247	526	7	(100)	(99)	(91)	(290)*
8	68	110	322	500	8	92	170	315	577	8	(102)	(154)	(110)	(366)*
9	80	144	335	559	9	82	184	316	582	9	(100)	(197)	(70)	(367)*
50	72	125	332	529	00	74	118	283	475	50	(84)	(161)	(111)	(356)*
1	(58)	(117)	(227)	(402)*	1	90	165	238	493	1	52	94	264	410
2	76	148	418	642	2	72	119	228	419	2	48	83	554	685
1853	74	142	441	657	1903	26	41	229	296	1953	60	124	514	698
4	62	87	440	589	4	88	186	148	422	4	60	105	743	908
5	34	65	417	516	5	72	132	159	363	5	46	77	1031	1154
6	72	122	369	563	6	66	124	188	378	6	80	157	914	1151
7	120	209	339	668	7	50	91	248	389	7	66	110	776	952
8	108	179	421	708	8	66	120	237	423	8	62	95	796	953
9	110	214	472	796	9	72	137	257	466	9	46	72	823	941
60	18	36	547	601	10	68	111	281	460	60	46	91	703	840
1	96	159	422	677	1	74	154	247	475	1	46	96	734	876
2	34	62	426	522	2	68	123	278	469	2	46	91	542	679
1863	62	116	386	564	1913	84	152	254	490	1963	42	64	484	590
4	58	126	413	597	4	82	142	254	478	4	32	65	449	546
5	46	73	408	527	5	52	106	290	448	5	38	81	557	676
6	80	139	336	555	6	68	117	289	474	6	26	30	574	630
7	68	115	346	529	7	46	94	342	482	7	48	91	431	570
8	104	191	283	578	8	52	81	341	474	8	32	54	336	422
9	66	108	322	496	9	70	134	173	377	9	24	26	415	465
70	72	136	321	429	20	44	107	270	421	70	34	41	265	340
1	62	112	342	516	1	58	108	218	384	1	24	42	242	308
2	82	146	294	522	2	66	128	241	435	2	46	83	270	399

* Partial counts only (see text).

Table II. Adults with young at the time of swan-upping on three stretches of the Thames.

Year	Stretch A		Stretch B		Stretch C		Total		Average no. of young per pair			Total
	Pairs	Young	Pairs	Young	Pairs	Young	Pairs	Young	A	B	C	
1823-32	—	—	94	324	104	369	198	693	—	3.45	3.55	3.50
33-42	4	21	163	620	170	740	337	1381	5.25	3.80	4.35	4.13
43-52	15	70	207	711	(135)	(464)	(357)	(1245)	4.66	3.43	(3.44)	(3.49)
53-62	4	9	174	566	186	700	364	1275	2.25	3.25	3.76	3.50
63-72	3	7	131	383	216	872	350	1262	2.33	2.92	4.04	3.61
73-82	3	10	90	330	217	757	310	1097	3.33	3.67	3.49	3.54
83-92	—	—	77	288	218	760	295	1048	—	3.74	3.49	3.55
93-1902	—	—	144	500	251	982	395	1482	—	3.47	3.91	3.75
1903-12	4	11	121	465	200	743	325	1219	2.75	3.84	3.71	3.75
13-22	—	—	131	501	180	668	311	1169	—	3.82	3.71	3.76
23-32	—	—	209	607	290	863	499	1470	—	2.90	2.98	2.95
33-42	(—)	(—)	272	634	354	779	(626)	(1413)	(—)	2.33	2.20	(2.26)
43-52	(—)	(—)	212	574	296	844	(508)	(1418)	(—)	2.71	2.85	(2.79)
53-62	—	—	130	488	149	530	279	1018	—	3.75	3.56	3.65
63-72	—	—	63	217	110	360	173	577	—	3.44	3.27	3.34

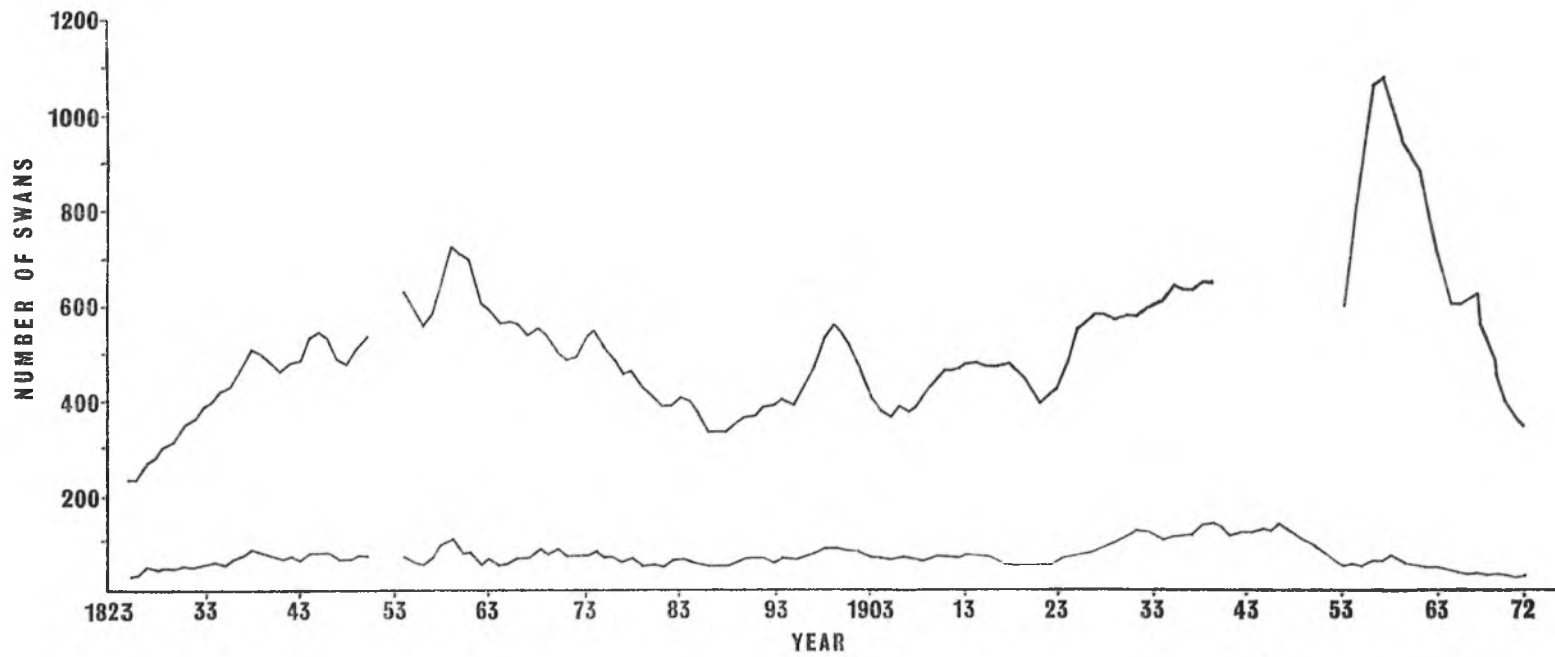


Figure 1. Numbers recorded at swan-upping in three-year moving averages. Above—all swans; below—adults with young. Gaps represent incomplete counts.

and C—Staines to Henley (Table II). Although stretch A was apparently partly undeveloped, especially on the south bank, at the start of the period, it has been built on throughout its length for many years now and much of it is restricted by embankments. It has therefore never offered many suitable nesting sites for swans and the last pair with young was recorded there in 1908. Unsuccessful attempts, however, have been made more recently; thus in 1955 a pair nested at the Chelsea Dock Basin, but was robbed (Cramp 1967). Stretch B from Putney to Staines was developed much later; indeed for much of the first hundred years the built-up areas were limited and largely confined to the lower stretches. Even now there are a number of suitable nesting sites, including many islands. Though human pressures, both along the banks and from boating, have steadily increased, there has been no parallel decline in the number of pairs breeding successfully. Indeed after the usual low totals in the first decade, which might mean that the techniques of locating breeding pairs were then being developed, numbers increased to 1843–1852, then fell steadily from 1893–1902 and after three decades of near stability rose to peak figures in the next thirty years, especially between 1933 and 1942. They then fell again, reaching an all-time low in 1963–1972. It may be wondered if this rise between 1923 and 1952 was due to a greater public benevolence towards swans, resulting in both increased feeding and reduced interference with nesting birds, but it is much more difficult to account for the recent decline, unless human pressures on and near the river are now outweighing these. Whatever the causes, a very similar pattern is found on stretch C from Staines to Henley which physically has changed less during the period, although there has been a similar though smaller growth in human pressures. On this stretch, except for the 1823–32 decade, the number of pairs with young remained fairly stable for the first hundred years, then showed a similar rise from 1933 to 1952, with the peak also in 1933–42, and a recent decline. The average number of young per pair counted in each ten-year period for the three stretches are also shown in Table II. These figures, of course, represent young of various ages, as found and marked at the time of swan-upping. They are, therefore, only a rough measure of breeding successes as the time of swan-upping has varied somewhat (see Introduction) and in early breeding seasons there would tend to be fewer young surviving. The

figures for stretch A are too small to be of value, but there is a general tendency, as might be expected, for breeding successes as shown by these counts to be higher on the less disturbed stretch C. It is also interesting that on both stretch B and C the lowest numbers of young per pair were found in the three decades 1923–1952 when the number of successfully breeding pairs reached the highest levels.

Other adults

This category includes both adult birds which have not bred or, because of failure at the egg or young stage, did not have young at the time of the counts, and birds not fully adult in their first or second years. Although all the young are caught and pinioned at swan-upping, the swan population of this stretch of the Thames is not self-contained, for pinioned birds can move elsewhere in the Thames basin by swimming, and some tributaries of the Thames, such as the Colne and Lee hold considerable breeding populations (Cramp 1957, 1963), whilst full-winged birds can, of course, fly in or out. The numbers of other adults on the Thames, therefore, almost certainly reflects both local factors and population trends over a wider area.

Whereas in the case of adults with young similar trends were found in stretches B and C, in this case the closest parallels are between stretches A and B (Figure 2). In both there was a tendency to increase after the first decade, reaching a peak in stretch B in the early 1860's and a little earlier in stretch C followed by a decline in both, which lasted until the 1920's. These trends may well reflect, especially in stretch A, a decline in natural foods because of the development along the banks and increasing pollution. In stretch B there was then a rise until 1939, followed by a decline until 1951, perhaps connected with less bread being provided by the public during the war and the years immediately following. There was then a marked and very rapid increase to the highest figures in the series in 1956. In stretch A the position is less clear, as no counts were made there from 1940 to 1950, though a similar but smaller increase occurred in the early 1950's. In both stretches these increases were relatively short-lived and numbers declined fairly rapidly to more normal levels. On stretch C the trends from the 1930's to the present day parallel closely those in the other two stretches, but earlier the position was almost reversed, with the highest figures from the 1860's

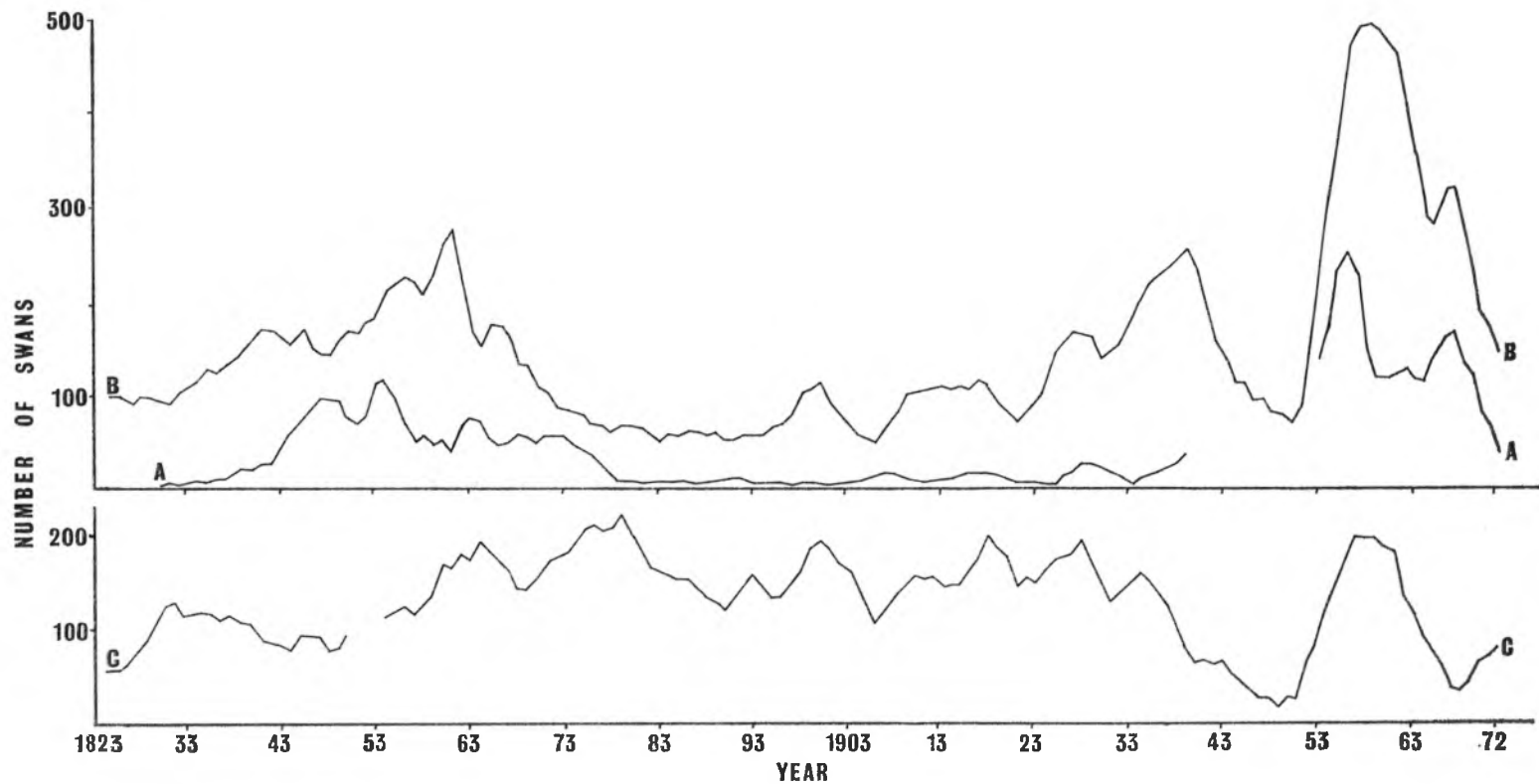


Figure 2. Numbers of other adult swans (three-year moving averages) on three stretches of the Thames. A. Central London to Putney; B. Putney to Staines; C. Staines to Henley. Gaps represent incomplete counts.

to the 1920's when they often equalled and sometimes surpassed the peak in the 1950's.

Again, the causes are not easy to establish. Large flocks of non-breeding birds in the 1950's were found mainly at sites where rubbish was being loaded on barges and more rarely where grain spillages occurred, or at such places as Richmond, Kingston and Staines, where they were fed by the public. Although some of the rubbish loading areas have since been closed (for example at Waterloo, resulting in the virtual disappearance of large flocks there), the changes in both these sources of food have not been sufficiently marked to account for the recent sudden and rapid fall in numbers. Ogilvie (1967, 1972) has discussed recent changes in the numbers of Mute Swan in Britain. The evidence suggests that the population reached a peak in 1959 and then declined. National indices based on winter counts suggest a marked rise from the winter of 1954-55 to 1956-57, a continuing high level between then and 1959-60, followed by a decline to 1963-64, since when the total winter population has fluctuated around 80% of the peak level. There were, however, marked regional differences and he pointed out (1967) that there was no migration of Mute Swans

and little movement other than following watercourses. The decline in numbers on the Thames occurred two years earlier, from 1957, and has been much more marked. Ogilvie showed that the hard winters of 1961-62 and 1962-63 contributed to the national population decline, but there is little evidence that these had any marked effect on the numbers of swans on the Thames. He also noted two other factors which have resulted in increased swan mortality in recent years—collisions with overhead wires and oiling. Overhead wires are perhaps less numerous along these stretches of the Thames than in some other areas, but oiling incidents are not infrequent. A major disaster occurred in December 1956 when the sinking of an oil barge at Battersea led to the known deaths of 243 swans (Cramp 1963); this could well have played a part in the earlier decline in numbers on the Thames already discussed.

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Summary

Counts of Mute Swans *Cygnus olor* made from 1823 to 1972 on the annual swan-upping expeditions on the Thames between central London and Henley-on-Thames are given and the trends illustrated by graphs based on three-year moving averages. For much of the 150 years the total numbers of swans varied between 400 and 600, rising above this briefly in the late 1850's, with a more striking increase to over 1,000 birds in the 1950's, followed by an almost equally rapid fall. The numbers of adults with young tended to vary between 50 and 100 until the late 1920's, rising above 100 until about 1950, thereafter declining markedly. Possible reasons for some of these fluctuations are discussed.

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