

# SANA's INLAND CORMORANT COUNTS

## FINAL REPORT

### SUMMARY



The **Scottish Anglers National Association** (SANA) has written on several occasions over recent years to the Scottish Government appraising Ministers of the worsening cormorant problem south of the Border, the worries of Scottish anglers over increasing numbers of cormorants and sawbills feeding inland here, and asking for improved control of the birds.

With our words evidently falling on deaf ears, and with **Scottish Natural Heritage** (SNH) disregarding anecdotal evidence, SANA's **Non-migratory Fish Committee** (NMFC) decided to ask member clubs to count cormorants using their waters to try to -

- provide evidence to SNH of the number roosting **and presumably feeding** inland.
- identify hot spots
- provide a benchmark figure against which any future counts might be measured.

The response from members and other angling organisations contacted was disappointing. Nevertheless four counts were planned for January, November, December 2013 and January 2014, after a small but reasonably wide spread of clubs and others elected to participate. It was decided to count birds using roosts at dusk on set dates to avoid double counting, which might have occurred had counts been carried out at differing times on open waters.

Various factors, including poor weather conditions on two of the dates, contrived to limit even further our some might think naive expectations, and the results reflect a less than enthusiastic reaction from Scottish anglers to a problem many say needs addressed.

Counts were carried out at 41 sites ranging from Dundee to Stranraer and Tweed, with just six of them being counted on all of the four set dates. The highest total was 573 birds in November. The average of the four counts was 494 birds, with two sites having an average of over 100 roosting birds and eight more over 20.

Apart from anglers' experiences and allegations there is no proven way of telling what impact these numbers have on fish populations in the waters concerned, and our project makes no attempt to measure the damage they cause. Some birds undoubtedly stay on site to feed whilst others fly off to feed in other waters, but without further study SNH is unlikely to change its view that "*the Scottish cormorant population is stable and, with some localised exceptions, there is no case for an overall population control/reduction programme*". However, there is no doubt that there are many more birds feeding inland than was the case prior to the mid 1970s, so in the light of strong anecdotal evidence of some fish stocks being jeopardised we urge SNH to ensure that fish protection does not always play second fiddle to avian conservation.

SANA welcomes feedback from readers of this report. We will continue to monitor the situation and press the government and SNH when the occasion demands. Meantime we are indebted to all who braved poor conditions to count and to John and Munro Reid of the **River Clyde Fishing Forum** who shared with us their experiences of counting cormorants on the River Clyde.

### INTRODUCTION

Though cormorants are often perceived to be sea birds, historically some could always be found inland in the UK. Around 40 years ago anglers started to complain about increasing numbers feeding in freshwaters and devastating fish stocks in many stillwaters and rivers. Supported by the **British Trust for Ornithology** (BTO) and other bird groups (who rarely consider the well being of fish populations the birds prey on) and, despite burgeoning

numbers, cormorants are protected under the Wildlife and Countryside Act 1981 and cannot be killed except under licence (see Appendix 8 for the EA's online facts leaflet).

**South of the Scottish Border** some regions have seen a significant increase in birds roosting, feeding and nesting inland, with native Great Cormorants (*Phalacrocorax carbo*) being supplemented by subspecies *P.sinensis* from the continent. Many fisheries are being ravaged, but repeated proposals by **The Angling Trust** (AT) for better management of the birds have at last borne fruit; the Westminster Government is introducing new measures to control cormorants and goosanders in England and Wales, including simplifying the licensing system and funding three fisheries management advisers to help reduce predation.

The BTO states *"It remains vital that a reasonable balance is struck between protecting fisheries without posing a serious risk to the conservation status of the cormorant population. Based on recent experience, a level of licensed shooting at around existing levels (2,000 birds per year) is unlikely to result in a significant decline in the cormorant population but will continue to offer protection for inland fisheries."*

The **Wetland Bird Survey** (WeBs) suggest levels have reached a plateau, whilst the **Institute of Fisheries Management** (IFM) states *"It is clear from the evidence given to the DEFRA review that cormorant numbers are stable or falling in the UK and there is no basis for any increase in control which may be achieved by allowing an increased level of shooting under a general licence. The issue of predator control at fisheries remains one that is best addressed holistically through a range of measures, including exclusion, prey shelter, scaring and ultimately (with firm evidence) shooting."*

*The Institute supports the conclusions of the Review Group (July 2013) and welcomes the continuation of the existing evidence based licensing scheme, together with the introduction of the fishery management advisers who will be well-placed to disseminate good practice and ensure solutions to the problems of fish-eating birds are both effective and sustainable."*

Commenting on licensed and unlicensed shooting, the Defra Review states *"it should be noted that the increase in licensed killing of cormorants since 2004 is sufficient to account for the observed decrease in growth rate of the England winter population since that time."*

**In Scotland** things are rather different. There has been no movement since 2008 when the *Strategic Framework for Scottish Freshwater Fisheries* noted it was unlikely that any major changes in the licensing system would take place without a Europe-wide reassessment of the situation. **Scottish Ornithologists' Club** (SOC) reports say *P.sinensis* is a rare vagrant to Scotland, and WeBs data supports other bird groups which say *P.carbo* numbers rose to a peak in the 1990s but have fallen away in recent years (but see chart on p.5). There are few reports of birds breeding inland in Scotland, though the **Joint Nature Conservation Committee** (JNCC) logs breeding colonies on Castle Loch and Mochrum Loch in Galloway.

In 2011 the Chairman of SNH told the NMFC *"I understand from our scientists that the Scottish cormorant population at the moment is relatively stable (in contrast to a rising population south of the border). There is therefore probably not, at present, any justification for an overall population control/reduction programme in Scotland. I agree, however, that there may be justification on a localised case by case basis, and I also agree that it would be good to see more research being done into methods (especially non lethal methods) of protecting fisheries from cormorants."*

NMFC understands this continues to be SNH's position.

Meanwhile SNH has taken over responsibility for issuing licenses to control the birds, but they are not easy to obtain, with various demanding criteria to be met and only a token kill being allowed should one be granted. SANA is aware that many clubs have given up applying because of the hassle in getting one and the small number of birds allowed to be shot.

A Scottish Government source told NMFC *"Last year (2012) SNH received applications for control of fish-eating birds at 23 sites in Scotland. Licences were granted for 18 of these"*

sites. Applications for the other sites were rejected on the basis of insufficient evidence being provided to show that serious damage was occurring or likely to occur.”

They didn't say how many of the applications were for cormorant control and how many were for sawbills.

Despite this many anglers still complain of large numbers of birds coming inland, particularly in winter months, to feed in Scottish waters, where they are having a detrimental affect on fish stocks in some areas. The following examples are symptomatic of many experiences:-

- When a Grayling Society party visited the Clyde in 2004 two flocks each of over twenty birds were on the river and not a grayling was caught, nor were many trout hooked.
- According to the Scottish Bird Report there was an exceptional feeding flock of 60 on the Clyde at Thankerton on 19<sup>th</sup> February 2004.
- The invasion reached new heights during the harsh winters of 2010 and 2011 which saw many birds moving to rivers from frozen stillwaters. This may account for an otherwise unexplained high blip in the **Tweed Foundation's** chart at Appendix 7.
- On the River Earn, once a prolific grayling river, winter grayling anglers have watched teams of 20 to 30 birds rounding up shoals of fish before gorging themselves, rendering formerly productive beats hardly worth fishing. They've even been seen attacking salmon on the redds.
- Comment from the R. Nairn – *“[birds] seen are so full of our parr, that they wait until the last minute to try and take off. They then flop down the river to another spot usually unable to take off and flapping down or upstream on the surface of the river .”*

Individually cormorants are very efficient predators and even more so when fishing in teams. Though SNH and the IFM say the population is stable or falling, the important factor to anglers is too many continue to feed inland and make inroads into fish stocks. It is known that -

- prior to the mid-seventies cormorants were mainly resident in estuaries and coastal areas.
- thereafter a significant increase was seen in birds feeding and roosting inland.
- the increase coincided with significant decreases in stocks of fish in some waters.

NMFC has written in vain to Government Ministers, MSPs and MEPs over the past few years asking them to consider improved controls, and has corresponded with SNH, BTO and others in an attempt to put a handle on Scottish inland cormorant numbers. We have waded through a plethora of reports, surveys and other papers on cormorants, and studied the online WeBs interface which allows some interrogation of numbers at counted sites, but we have not found a definitive overall total for the total Scottish cormorant population let alone inland numbers.

## NMFC's SURVEY

Consequently, as SNH does not rate anecdotal evidence and no-one else seemed to be prepared to do much about the matter, NMFC decided to launch its own survey. We reasoned that as the WeBs records and the RSPB's garden bird watch (both use volunteers to count) command wide esteem, then a measured survey of inland cormorant numbers by angler volunteers should receive similar respect.

### Pilot Count

In 2012 we proposed a count via SANA's newsletters and website, then after receiving less than hoped for support, widened the scope to include the Fisheries Trusts, Salmon Boards, and other fishing organisations. To avoid double or more counting of itinerant birds we asked participants to count on the same date (27<sup>th</sup> Jan 2013) at cormorant roosts, a methodology supported by the BTO and practiced for some time on the Clyde by members of the River Clyde Fishing Forum. A report is at Appendix 2 and also on the SANA website.

### Further counts – interim report

The pilot proved the methodology works so we opted to repeat the exercise on three occasions over the 2013–2014 winter period. An interim report prepared for the SANA AGM

is at Appendix 3 below and on the SANA website. It provides basic details of the project and was sent to all participants.

## DISCUSSION

### Lack of Participants

The counts failed to attract as many participants as was hoped. Of those who responded to our mailings a few were keen and very supportive, others said they would take part then failed to do so, but the great preponderance of Scottish anglers, including most SANA clubs and their members failed to respond. Some of the fisheries trusts and salmon boards took part in the pilot then failed to do so in the main counts, and other fishing organisations and the fishing magazines ignored our requests to broadcast the project. Several things may have conspired to put people off;

- some areas have no inland roosts, with birds flying in each day from the coast (Dunoon and Nairn are but two examples)
- some (many?) waters where birds are active have no roosts, with the birds presumably flying in from inland roosts elsewhere
- roosts can be distant making the trek back to the car in the dark difficult
- both the pilot and the second main count suffered from very bad weather conditions
- many club members are elderly so finding people to count can be difficult
- some disillusioned anglers, having experienced difficulties in obtaining a license, may think the SANA project a waste of time
- some may think that contributing to the AT's "Cormorant watch" is sufficient.
- **it may, of course, be that many areas don't have an issue with cormorants.**

### Methodology

We opted to count at roosts to avoid double counting of travelling birds. This is sound so long as counts take place on set dates, at dusk when birds are flying in to roost, or at dawn when they are leaving. In practice it was not always possible to conform to these criteria because of weather conditions, availability of counters etc, so in one or two cases we agreed counts could be made the day before or after, or as close to the dates as possible. Participants were asked to provide an OS national grid reference (NGR) for each roost, though not all did.

### WeBs data

The Wetland Bird Survey is administered by BTO in conjunction with RSPB and is accepted by governments and others to be the authoritative GB survey. A monthly programme of counts is made by enthusiastic volunteers, with results available on a new online reports interface at <http://blx1.bto.org/webs-reporting/?tab=numbers&speciescode=26>. This contains over 800 Scottish counted sites (our list is comparatively tiny) together with what amounts to a wish list of many other places where apparently no counts have been made.

These records are almost impossible to compare with ours as WeBs counts are largely carried out on open waters during the day rather than at roosts, and sites are logged under local names rather than NGRs. In addition their counters don't always conform to programmed dates because of various factors, there are holes (especially in linear sites) where volunteers to count are presumably not available, and there are some unaccountable anomalies (eg they list figures for Loch Earn yet list *Loch Earn West* and *Loch Earn St Fillans* as not counted, and they record only one bird on three short sections of the River Earn where winter grayling anglers have seen large flocks).

Despite this, we have included their last five year average figures alongside our year's results for interest where we feel they might be relatively compatible (Appendices 1 and 6).

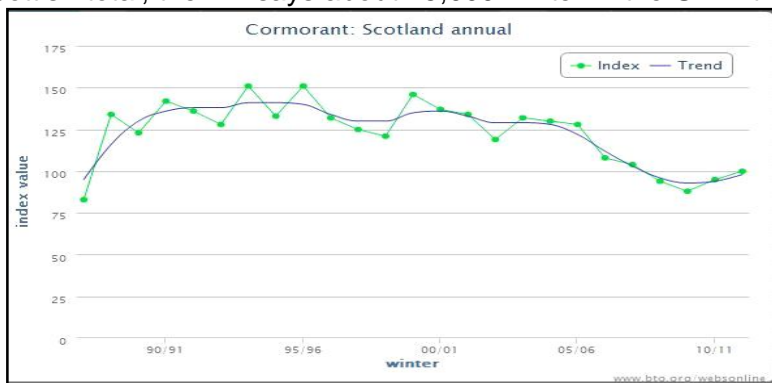
### Scotland's cormorant population

It is difficult enough to find reliable figures for the UK total cormorant population never mind for Scotland alone. Figures from differing sources are often not comparable and have to be treated with caution, and we have found none for Scotland's inland population.

The JNCC website gives Scottish breeding population estimates for coastal populations of 3438 in 69/70, 2986 in 85/88, and 3626 in 98/02 based on “*apparently occupied nests*”, but any inland breeders are not included (see web refs below).

WeBs gives a maximum of 18,385 for the total GB carbo population, the SOC's Bird Report lists regional numbers but not a Scottish total, the EA says about 25,000 winter in the UK with 10,000 wintering inland, but we have been unable to find similar data for Scotland alone, save for a chart in the WeBs online interface which shows the “index value” (not total numbers) and trend since 1990.

BTO's *Bird Trends* also states “*Trends during 1986-2005 show decreases in Scotland.*”



There is little doubt, however, that there are still many more birds operating inland now than there were prior to the mid 1970s.

## RESULTS

SANA count sites and the numbers of birds counted are listed at Appendix 1.

The list shows 41 roost sites counted of which 13 are on four rivers and the rest on stillwaters. Many were not counted on each of the four dates because of bad weather and other factors, with only Loch Earn, Loch Kindar and four roosts on the R Clyde being counted on all occasions. The average total of 494 birds for the 41 sites would likely have been higher had the weather for the December count not been so bad.

Three hotspots are identified where action is desirable from a fisheries viewpoint:-

- Loch Leven, probably the most studied site in Scotland, is one of five in Scotland of European wildlife importance for wintering cormorants. Records list 200+ birds counted in the 1940s, and a peak of 800 in 1991. (See Appendix 4 for background)
- Loch Kindar AC reports a resident population of up to 25 birds, but these are supplemented daily with often well over 100 more flying in from the Solway to roost; the club believes these exacerbate predation of their rainbow trout stocks.
- River Clyde counts show peaks for the four counts of 214, 90, 137, and 118. It may be that many of them feed at other waters in the catchment, but they must make inroads into fish stocks in the river. (See Appendix 5 for some Clyde background)

The following should be taken into account when reading Appendix 1 :-

- The omission of counts on the rivers Annan, Earn, Tay, Teith etc where winter grayling anglers have seen many cormorants over the years. No volunteers came forward.
- Birds roosting at Balgavies Loch likely feed on adjacent Rescobie Loch which is stocked with rainbow trout.
- The roost counted at Loch Earn is at the E end on Neish Island. Birds may utilise this and the nearby Drummond Loch roost from time to time.
- The fall in numbers at Linlithgow Loch is significant and puzzling but welcomed by the counters who hope it will continue.
- The Stranraer main roost is on the Black Loch with the angling club presuming birds counted on Souleseat Loch use it too.
- The counter at Killin notes that some birds seen feeding at the W end of L Tay fly off at dusk towards Kenmore and L Earn where they are assumed to roost.
- Though 9 birds were counted at Kingennie fishery, 38 were on the water the following day, which illustrates the mobility of birds and the randomness of one-off counts.





We thank Rab Brown for this photograph taken in January 2010 on the River Teith at Callendar. On another day 22 birds were counted.

There is a roost in a tree overhanging the river in the town, but no one volunteered to count for SANA either on the Teith or the River Forth.

## WHAT NEXT?

Individuals from the NMFC spent much time in organising this project. It has shown that useful information on inland cormorant numbers can be collected by the angling community, but we are disappointed that insufficient folk were prepared/able to identify roosts and count birds using them. We expected SANA members to form the bulk of the counters, but evident lack of interest persuaded us to ask others to participate.

We are grateful to the River Clyde Fishing Forum for their help, to the Tweed Foundation for arranging counts and sharing with us the results of their quarterly counts on the river, and to the Nith Fisheries Trust for participating in the pilot count, however, the lack of practical cooperation from other trusts, salmon boards and angling organisations is regrettable. We are aware that some, like Tweed, carry out their own counts and that sawbills may pose a bigger threat than cormorants in some areas, but this was **a chance missed to provide SNH with wide-ranging data on the number of cormorants roosting and ostensibly feeding inland**

The count results, apart from a handful of sites where large numbers of birds evidently pose a significant threat to local fish stocks, are unlikely to persuade the Government that there is an extensive problem. To prove such a problem exists much greater coverage is required for any further surveys, otherwise the status quo is likely to continue. That said, **we hope SNH will concede that there are many cormorants roosting as well as feeding in some inland areas, and consider using their own resources to more fully quantify the numbers.**

SANA expects the imminent Wild Fisheries Review to address predation issues, and urges anglers to take any opportunity to provide their views to the Review team, as well as making a response to any subsequent consultation. If sufficient voices are raised **it might help persuade SNH to treat sustainability of bird and fish populations equally.**

Alan Ayre & Willie Miller  
Non-migratory Fish Committee  
SANA Ltd  
18<sup>th</sup> March 2014

## APPENDIX 1

<b>SANA's Counts Results</b>							
<b>Count site</b>	<b>27 Jan 2013</b>	<b>10 Nov 2013</b>	<b>15 Dec 2013</b>	<b>12 Jan 2014</b>	<b>av of 4 counts</b>	<b>WeBs 5 year av</b>	<b>Grid refs</b>
Antermoney Loch (Caurie AC)	1		3	1	2	13	NS 667 768
Balgavies Loch (Rescobie LDA)	14	16			15	26	NO 532 509
Balloch Loch - Crieff	4	4			4	5	NN 837 191
Barcraigs Res (Rowbank AC)	5				5		NS 390 570
Baron's Haugh	0				0	10	NS751 549
Brother Loch	16	17			17	18	NS 505 527
Carron Res		20		20	20	9	NS 6884
Clyde - Bothwell Rd	65	60	68	65	64		NS 714 576
Clyde - Carstairs	18				18		NS 9346
Clyde - Dalmarnock Rd	4	10	15	7	9		NS 608 625
Clyde - Drumpellier CP	1				1		NS 703 663
Clyde - Strathclyde park	73	4	38	23	34		NS 72 57
Clyde - Tulliford	53	16	16	23	27		NS 895 397
Dunwan Dam (Ballageich AC)		4	4	4	4	5	NS 553 494
Drummond Loch		11		8	9	18	NN 855 186
Glencorse Reservoir	10	12			11	9	NT 215 639
Hillend Res (Airdrie AC)			1		1	4	NS 835 678
Kingennie	9				9		NO 479 362
Lake of Menteith	27	27		26	27	17	NN 567 003
Linlithgow Loch	47		8	8	21	24	NT 003 776
Lintrathen Res		17	21	14	17	39	NO 278 550
Loch Earn	15	11	15	23	16	40	NN 691 243
Loch Kindar	92	142	137	72	111	25	NX 968 643
Loch Leven		131		190	160	173	NO 14 01
Loch Walton				10	10		NS 665 866
Nith Slatehouse Loch	1				1		NX 85829 99908
Nith Top Boards	3				3		NX 96025 80975
Nith Thornhill	1				1		NX 86537 94715
Nith Blackwood	1				1		NX 90739 87264
Pilmuir Res - Walton AC	1	0	1	0	1		NS 516 510
Spey - lower river - MM		1	3	0	1		
Spey DSFB		0			0		NH 92070 813800
Stranraer & DAA (Black Loch)	32	18	21		23		NX 114 612
Stranraer " " (Souleseat Loch)	21	0	2		7	0	NX 102 587
Tay - Killin Crannog Pier		0	0	3	1		NN 582 343
Tay " Opp Sand Island		0	0	4	1	9	NN 589 334
Tay " R Lochy Iron Bridge		3	0	0	1	1	NN 574 335
Tweed Rutherford	35	46			40		NT 655 314
Tweed Drepper Island	3				3	31	NT 880 445
Tweed Lennel	0	3	0	0	1		NT 866 428
Whiteadder Res		0			0	3	NT 64 63
<b>Total counted</b>	<b>552</b>	<b>573</b>	<b>353</b>	<b>501</b>	<b>494</b>		

**Notes** - Blanks indicate no visit made, and/or no feedback received

0 indicates visit but no birds present

Averages are of counts made on all 4 visits Jan 2013 to Jan 2014

WeBs last 5 years averages given where their count areas seem relatively coincident with ours.

13th Dec count was blighted by atrocious weather

## SANA's Pilot Cormorant Count



### Preamble

SANA is aware that anglers have for long grumbled about the increasing numbers of cormorants and sawbills feeding in Scottish freshwaters. It is commonly supposed that a



dearth of fish in the sea has contributed to this. They are regularly seen on lochs, stillwater fisheries, canals and rivers where they must make inroads into valuable fish stocks. Both species are opportunistic feeders and will take salmonids as well as most other freshwater species, with cormorants taking larger fish than sawbills, often of several pounds in weight. Cormorants have been seen fishing in teams of twenty and more in rivers such as Clyde, Earn and Tay where grayling stocks in particular have been decimated in recent years and who knows how many

trout and young salmon devoured or damaged.

The problem is possibly worse in England, but there the Angling Trust has lobbied MPs and Defra with some success in improving cormorant control and management. SANA's Non-migratory Fish Committee has written on several occasions to Scottish Ministers, MSPs and SNH drawing attention to the English position and asking for similar action to be considered in Scotland. Politicians defer to SNH, who recently took over responsibility for licensing to shoot birds, and who say that any proposed action needs to be backed up with scientific evidence.



Most evidence from anglers is anecdotal and is not easy to gather, so last year we addressed the matter in a SANA newsletter and the annual Handbook, asking for members feedback on their local experiences, but little was received. However, ongoing counts on the Clyde by members of the River Clyde Fishing Forum (RCFF) encouraged us to ask SANA members again, this time to participate in a count of birds seen roosting locally, as at least this would provide some positive evidence on the number of birds spending part of their lives inland. The response was better but still disappointingly low, so some Fisheries Trusts and others were asked to participate, and on the afternoon of Sunday 27<sup>th</sup> January around 30 parties were out in inclement weather counting birds at known

inland roosts on lochs and rivers from Angus to Galloway.



## Methodology

With advice from the RCFF and the British Trust for Ornithology (BTO) we asked participants to provide OS grid references for roosts in their areas, then to count (bearing Health and Safety in mind) cormorants using the roosts at dusk on the 27<sup>th</sup> January. In that way there should be no double counting of birds flying between different sites.

## Results

Counts were made at 15 lochs and three rivers (Clyde, Nith and Tweed) as shown on the list below. There was a total of 295 cormorants on the lochs, and 257 on the rivers (Clyde 214, Nith 5, and Tweed 38), a grand total of 552 birds.

The map shows in red the distribution of count sites, in blue places where counts were promised but for various reasons not carried out, and in yellow a few other roost sites. See

<https://maps.google.co.uk/maps/ms?msid=213477796627388432466.0004cef20c1d18d84fe19&msa=0&ll=56.353078,-3.592529&spn=3.122987,9.876709>

where it can be viewed in more detail.



## Conclusions

It is disappointing that only a small proportion of SANA members chose to respond to the initiative. However, those that finally did count can have satisfaction in knowing that their efforts helped to show the methodology works. It is hoped that more can be persuaded to participate in any future counts.

It was unfortunate that the weather was bad on the count date, to the extent that snow prevented access to some sites, and ice at some meant birds were absent. These were factors that prevented counting by Pitlochry AC and Ballageich AC. The conditions were possibly responsible for fewer birds than expected appearing at some sites, and more at others. It may, of course, be normal for birds to use different roosts at different times according to conditions or other reasons. Only repeated counts will shed some light on this.

Getting everyone to count at the same time, to avoid double counting, was critical but difficult, and three or four sites were counted earlier, Balloch Loch and Rutherford on Tweed are examples.

Birds are regularly seen on some waters where there are no roosts, Dunoon is such a case where birds leave waters at the end of the day bound it is said for coastal roosts. On the other hand some birds may come in from the coast to join 'resident' birds at inland roosts, Loch Kindar is an example of this.

Because of these difficulties and various problems encountered in organising the count, it was decided to look upon it as a pilot and use the lessons learned to inform future counts intended for next winter, when we hope to have many more SANA and other participants.

Alan Ayre, Willie Miller, & Jim Twaddle of SANA  
Munro and John Reid of RCFF  
27 Feb 2013

## SANA's Cormorant Counts

(Interim Report for AGM)

Over the past decade anglers have complained of flocks of cormorants feeding in many Scottish inland waters and denuding fish stocks, but most evidence is anecdotal and with few exceptions no reliable figure of the number of birds is known. SANA's Non-migratory Fish Committee therefore organised a trial count on 27<sup>th</sup> Jan 2013. Its aims were to.....

- provide evidence to SNH of cormorant numbers roosting and presumably feeding inland
- identify hot spots
- provide a benchmark figure against which any future counts can be measured.

Participation was less than expected, but encouraged by the results we planned three further counts on Sundays 10<sup>th</sup> November, 15<sup>th</sup> December and 12<sup>th</sup> January of this winter. To swell support we wrote to and/or emailed all SANA members urging their help, as well as advertising the counts on the SANA and the RAFTS websites and inviting individual fisheries trusts and other fisheries organisations to participate; we also contacted the main fishing magazines to get even wider coverage. Despite this, even fewer volunteers came forward, with several who took part in the trial not opting to count again.

Nevertheless the counts went ahead, the dates being preselected to ensure everyone counted at the same time. As in the trial we asked volunteers to identify cormorant



roosts then count at dusk the numbers of birds using them; in that way there would be no double counting of birds flying between waters as might happen if the counts were done earlier in the day or over a longer period.

This time there was some rain, and the December count was blighted by

storm force winds driving heavy rain, but there was no snow and ice from which the trial suffered. We very much appreciate the efforts of those who got out to count, but are disappointed that we've had no response to date from some who said they would take part, hardly any feedback from the Fisheries Trusts, and none from the fishing magazines. However, results are still trickling in so we're hoping there will yet be significant addition to the table below. A final report will be written once all the figures are to hand.

Many thanks to Iain Wilson and colleagues for the Rutherford photograph.

Alan Ayre & Willie Miller  
Non-migratory Fish Committee  
26 January 2014

## Loch Leven background

A 2009 report by SNH says Loch Leven is one of five sites in Scotland of European wildlife importance for wintering cormorants (*Phalacrocorax carbo*). The others are the Firth of Forth (the third largest in the UK), the Solway, the Moray Firth and the Tay Estuary. Loch Leven is the only inland site. Although mainly a coastal bird, it is known that cormorants have traditionally wintered in a few inland sites in Scotland. It is likely that Loch Leven is a traditional long-established site for cormorants as suggested by the naming of one of the small islands as Scart Island, the old Viking name for cormorants. The historical records of cormorants at Loch Leven go back several centuries. For example a report produced by NCC, ITE and the Wildfowl Trust in 1974 states: "*Cormorant - present throughout the year but does not breed...up to 60 in Jan - March with only occasional birds in mid-summer. Shot by the Estate. Ringed birds included individuals from Orkney, Berwickshire, Northumberland and Wigtownshire. Many birds roosted in large trees on Reed Bower. Recorded from loch as far back as 1791. Scart island, exposed after 1830, was named after this bird. Present in very large numbers in 1940's with reports of 200+. Cormorants have therefore been present in large numbers at Loch Leven for many years.*" The report also states "*The count data show an increase in the number of cormorants from an average of 72 up to the winter of 1989/90 to 201 up to the winter of 1994/95.*"

As well as quoting Moran committee findings the report contains much useful information about cormorant movements on the Scottish eastern seaboard, saying various studies have postulated that though some birds may be faithful to a local roost, others may fly elsewhere to feed, and radio or satellite tracking is the only useful way of identifying movements of individuals.

Information on cormorants is provided in the loch's annual reports, with peak and mean figure charts showing fluctuating numbers since the 1980s (peak numbers vary between 100 in 1980, 800 in 1991, 600 in 2001, dipping to 175 in 2008, and rising to over 200 in 2012). Mean figures for 1992 and 2001 are 260 and 360 respectively, which illustrates that care must be taken when quoting figures not to confuse *peak* with *mean*. (Peak means the highest count recorded in any one year, and *mean* the average calculated from several winter counts in any one year). We also wonder about the reliability of some figures on finding that 5 year peaks in the 2012-13 annual report differ from those logged by WeBs.

An FRS study (*Diet and prey selection of cormorants (Phalacrocorax carbo) at Loch Leven*) states that "*stocking has led to an increase in cormorant numbers and the subsequent increase in predation may have prevented any increase in the trout population or in fishery catches.*" This is reiterated in a FRS leaflet.

### Loch Leven References -

SNH report <http://www.snh.org.uk/pdfs/scottish/taysclack/cormorantff.pdf>

SNH 2011-12 Annual report is at <http://www.snh.gov.uk/docs/A742632.pdf>

SNH 2012-13 Annual report is at <http://www.snh.gov.uk/docs/A1021365.pdf>

FRS leaflet <http://www.scotland.gov.uk/Uploads/Documents/Cormorants.pdf>

FRS report <http://onlinelibrary.wiley.com/doi/10.1017/S0952836905007387/abstract>

See also <http://theses.gla.ac.uk/1623/1/2002wrightphd.pdf> which has some interesting data.

## River Clyde background

Prior to the early 1970s there were no sightings by anglers, by bird-watchers or by the general public of cormorants in the Clyde area upstream of Erskine.

Before that time, between Motherwell and Hamilton, there was the Clyde Park, which had a boating pond. No cormorants had been seen in at the boating pond or around any part of the Clyde above the estuary. Then Strathclyde Country Park was constructed. This included a new loch which took in the old boating pond and part of the course of the River Clyde.

In September 1975 a park ranger reported the sighting of a cormorant in the newly constructed loch, and during the winter that followed **The Glasgow Herald** carried a story about a cormorant being seen in Glasgow for the first time ever.

In the following years things began to change. **The Scottish Bird Report** produced by **The Scottish Ornithologists' Club** (SOC) first appeared in the summer of 1969. It claims to give a comprehensive annual account of birds across Scotland. The data collected are made available to organisations such as the RSPB, and provide information for the Wetland Bird Survey (WeBs). In fact, the earlier reports are less comprehensive than those produced more recently. It is also possible that counting may not have been done simultaneously at all counting stations, which means that there may some double counting since the birds move around during the day.

However, the SOC figures are of value since they give information about the increase in Scottish populations, see <http://www.the-soc.org.uk/publications/scottish-bird-report-online/> . For example in part of the Clyde catchment there were:-

- 1 in Strathclyde Park in 1975
- 29 in Strathclyde Park on 19 December 1976
- 40 in Strathclyde Park in January 1979
- 117 in Strathclyde Park in March 1992
- On 28 Dec. 2002 there were 109 at the tree roost at Crookboat, above the Falls of Clyde, and 120 at a tree roost near Hamilton (i.e. total of 229). Doubtless there were additional birds at other locations on the river on that date.
- A cormorant of the continental race *P c sinensis* was at Prince's Dock, Glasgow on 26 Dec 2005, only the second accepted record of this race in Scotland.
- In January 2013 SANA's Non-migratory Fish Committee and the River Clyde Fishing Forum conducted a count of birds arriving at dusk at four Clyde roosts between Bothwell Bridge and Carstairs. Two hundred and ten birds were counted.

Thus, over the years the population above Bothwell Bridge has increased dramatically from zero to more than two hundred. The population now seems relatively stable and there should be no question of cormorants requiring special protection.

## APPENDIX 6

From WeBs online interface		WeBs latest 5 yr peak figures							
WeBs Count	Site Names	07/08	08/09	09/10	10/11	11/12	top month	WeBs 5 yr mean	SANA 1 yr mean
	Loch Leven	122	142	186	197	(219)	Oct	173	160
	Loch of Lintrathen	77	138	27	73	126	Feb	88	17
	Loch Earn	57	38	33	40	34	Jan	40	16
	Hamilton Low Parks & Strathclyde Park	82	45	17	15	38	Mar	39	34
	River Tweed - Kelso to Coldstream	25	18	(35)	33	45	Feb	31	3
	Balgavies Loch	41	25	15	20	31	Nov	26	15
	Loch Kindar	12	38					25	111
	Linlithgow Loch	27	25	14	26	30	Jan	24	21
	Brother Loch	21	33	20	9	6	Jan	18	17
	Lake of Menteith	15	18	15	20	19	Sep	17	27
	R Clyde – Blantyreferme to Carmyle	16						16	
	R Clyde: Carstairs to Thankerton	(46)	8	5	16	2	Sep	15	
	Antermoney Loch	11	6	32	3	12	Dec	13	2
	Barons Haugh	19	4	8	13	8	Nov	10	0
	Carron Valley Res	11	11	6	9	8	Oct	9	20
	Glencorse Res	10	8	12	8	6	Oct	9	11
	Loch Tay	16	17	6	3	2	Dec	9	9
	Rescobie Loch	10	12	0	7	(12)	Feb	8	
	R Clyde – Mavisbank Rd to Wanloch St	10				6	Mar	8	
	R Nith – Keltonbank to Nunholm		5	15	3			8	
	Barcraigs Res	8	15	5	5	4	Apr	7	5
	Dunwan Dam	6	3	2	9	3	Aug	5	4
	Hillend Res	2	9	1				4	1
	Loch Walton	4	5	0	4	5	Oct	4	10
	Whiteadder Res	3	3	5	2	2	Sep	3	0
	R Clyde - Lamington	5	2		0			2	
	River Nith - Dumfries			1	2	3	May	2	
	R Tweed – Boleside to Galafoot	1	0		1	4	Jan	2	
	R Tweed – Galafoot to Lowood Br	0		2	0	0		1	
	R Tweed – Lowood Br to Newstead	0	2	0	1			1	
	R Earn – Lawhill Oxbows	1	3	1	0	1	Oct	1	
	R Earn at South Kinkell			0	1	0		0	
	R Earn – Dalreoch South	0	0	0	0	0		0	
	Roscobie Res		1	0	0	0		0	
	Stranraer Lochs					0		0	23
	Loch Earn West (not counted)								
	Loch Earn – St Fillans (not counted)								
	Mouth of R Lochy (not counted)								1
	R Clyde – Carstairs Junc “ “								18
	R Clyde – Crookboat “ “								27
	R Clyde – Lamington to Hyndford Br “								
	R Clyde – Bothwell to Motherwell “								
	R Clyde – Dalmarnock Br to Yoker “								9
	R Tweed – Dryburgh Br to Mertoun Br “								
	R Tweed – Rutherford (not counted)								40

**Notes** - We find the new WeBs interface less user friendly than it could be. It doesn't always respond correctly when changing pages under some habitat types, some rivers are listed under rivers & marshes and also under reservoirs, and there are various other niggles which will hopefully be ironed out before long.

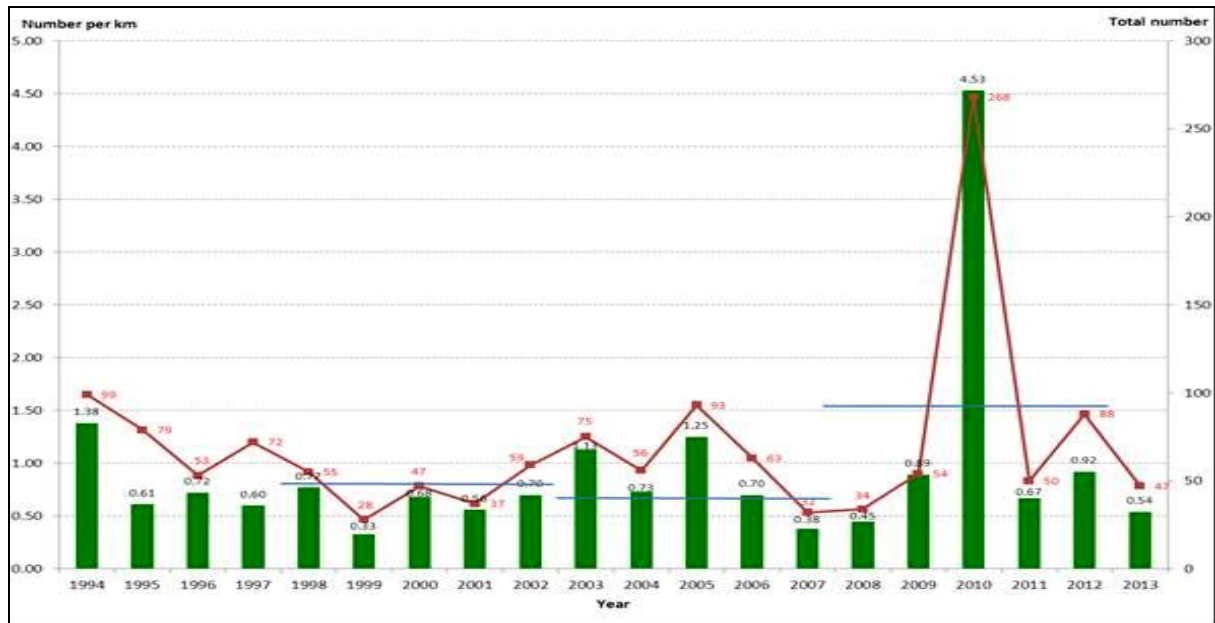
Crookboat appears to be the same, or close to, our Tulliford roost.



## APPENDIX 7

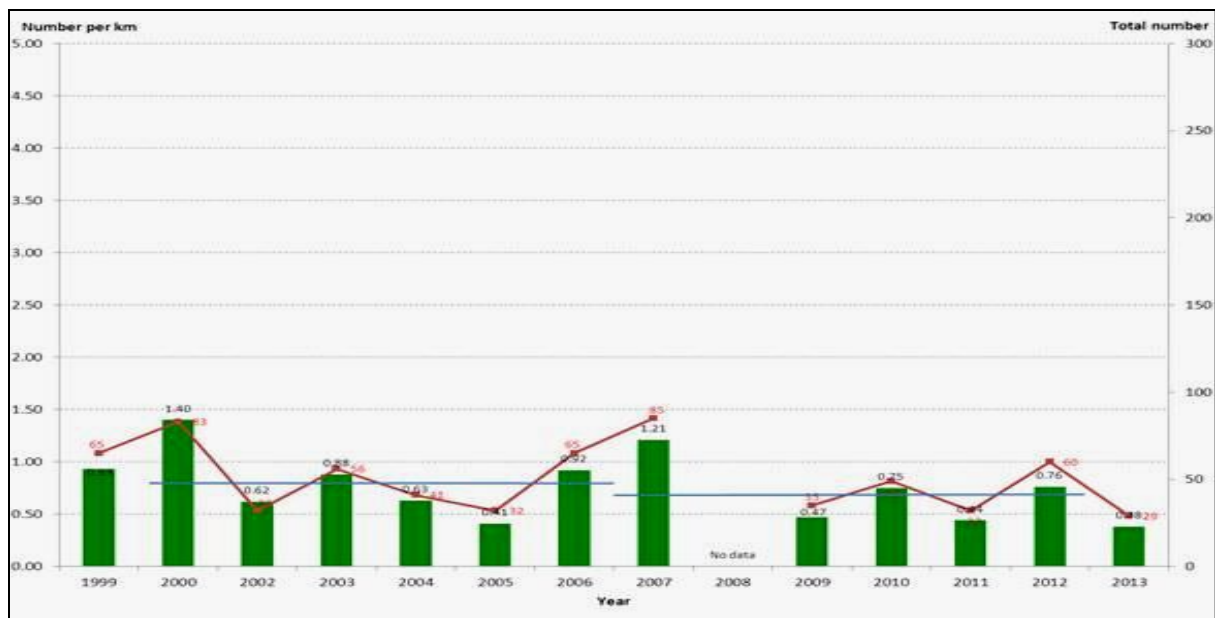
### Middle & Lower Tweed Cormorant Counts: **January**

*Green bars are total numbers, red lines are numbers per km*



SANA's comment – The huge increase in 2010 seems likely due to the very cold winter when stillwaters were frozen over.

### Middle & Lower Tweed Cormorant Counts: **October**



Charts by kind permission of the Tweed Foundation © 2014

## References

EA cormorant facts leaflet –

[www.environment-agency.gov.uk/static/documents/Business/cormorantfacts\\_234731.pdf](http://www.environment-agency.gov.uk/static/documents/Business/cormorantfacts_234731.pdf)

SOC counts - <http://www.the-soc.org.uk/publications/scottish-bird-report-online/>

JNCC data - <http://jncc.defra.gov.uk/page-2876> and

[http://jncc.defra.gov.uk/PDF/S2000\\_06\\_corm\\_tabs\\_and\\_figs\\_web.pdf](http://jncc.defra.gov.uk/PDF/S2000_06_corm_tabs_and_figs_web.pdf)

WeBs trend chart - <http://blx1.bto.org/webs-reporting/?tab=numbers&speciescode=26>

BTO trends - <http://blx1.bto.org/birdtrends/species.jsp?year=2012&s=cormo>

Index values - <http://www.bto.org/volunteer-surveys/webs/publications/webs-publications-faqs>

England's position

<http://www.anglingtrust.net/news.asp?section=29&sectionTitle=Angling+Trust+News&itemid=1976>

Angling Trust's Cormorant watch - <http://www.cormorantwatch.org/index>

Defra Review July 2013 - Pages 60-62 contain particularly interesting information

<https://www.gov.uk/government/publications/fish-eating-birds-management-policy-review>

SNH count guidance - <http://www.snh.gov.uk/docs/B879288.pdf>

SNH trends - <http://www.snh.gov.uk/docs/B424905.pdf>

SANA Pilot count -

<https://dl.dropboxusercontent.com/u/47616133/SANA%27s%20Cormorant%20Count.pdf>

SANA Interim count -

<https://dl.dropboxusercontent.com/u/47616133/SANA%20Cormorant%20Survey%20Interim%20results%20Jan%202014.pdf>