



Report on the Black Headed Gull Ringing Project 2003-2007



The Cotswold Water Park Ringing Group was formed in the spring of 2003 in order to coordinate the study of birds in the CWP using ringing. One of the first projects identified was to study the small population of breeding Black headed Gulls.

Black Headed Gulls are a relatively recent addition to the breeding species in the CWP with the first pairs breeding at Lake 34 in 1998.

In 2003 a survey of the CWP founded 30+ pairs breeding at 4 locations, since then the number of pairs breeding has increased dramatically.

In 2003 a pilot project was carried out to explore the feasibility of ringing nestling Black headed gulls. 30 pairs were found to be breeding and from these 52 young were ringed with BTO rings and at least another 20 fledged without rings.

	Pairs Breeding					Nestlings Ringed				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Lake 9 – Cerney Wick - Glos	12	47	78	c80	C80	14	69	54	51	65
Lake 74 – Cleveland Farm - Wilts	12	26	45	c60	C60	36	53	73	82	45
Lake 86	8	0	0	0	0	0	0	0	0	
Lake 34 -Cokes Pit – Glos	1	3	9	c20	4	2	0	11	26	0
Lake 7 – Watermark Glos			2	0	0			0	0	
Lake 95 – Cleveland Farm Wilts			3	3	0			0	0	
TOTAL	32	76	137	c160	C140	52	122	135	159	110



Lake 9 – Cerney Wick (Cotswold Sailing Club)

This is a large gravel pit used for recreational sailing. There are 3 islands that are project 6-10ft out of the water. All of the islands are managed to reduce the height of vegetation in order to reduce “wind shadow” and provide a clear line of vision across the lake. This is achieved by clearing the islands of vegetation to ground level each winter.

The Black Headed gulls initially nested on the smaller island “Gull island” but have spread to another island where Common Terns also breed. In 2007 the third island was used for breeding by gulls

Lake 74 – Cleveland Farm



A large lake with no natural islands and little vegetation. Prior to the study nesting rafts were provided for breeding gulls and terns. Traditionally the first was positioned in March for BHGs and the second in late April for Common Terns. In 2006 the number of rafts was increased to 4 with 2 early rafts and two later.

Lake 34 – Cokes pit

Traditionally this is the first lake in the CWP to be colonised by BHGs. It is a large lake with numerous islands. However these had vegetated with trees and were no longer used by gulls. Several rafts and man made islands are provided.

During the study initially only a few pairs bred here with just a few pairs on rafts of the same size that supported over 20 pairs on Lake 74. However in 2006 water levels were much lower exposing a gravel island that was used by a small colony of BHG gulls. In 2007 water levels returned to normal with a consequent reduction in the number of pairs breeding

Lake 7 – Watermark

This is a smaller lake that is part of a housing complex. Rafts are provided and these are normally used by terns in 2005 2 pairs attempted to breed and failed.

Lake 95 – Cleveland Farm

This is a recently excavated shallow gravel pit with numerous islands.

Method



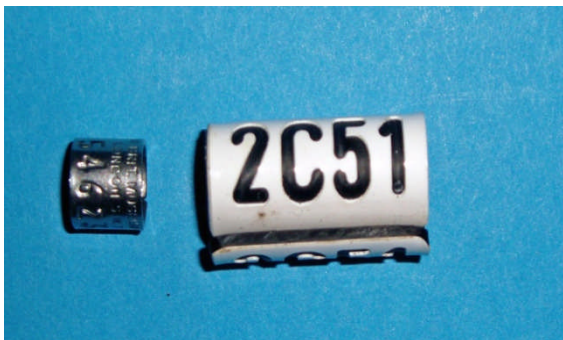
In 2004 a project was initiated to study the BHGs breeding in the CWP using engraved colour rings. The recovery rate of BTO metal rings is low and dependent on birds being found dead or being recaptured. With the relatively small numbers we expected to ring it was hoped that using colour rings would increase sightings and therefore increase our chances of obtaining significant results.

Since 2004 a total 526 nestlings have been ringed with Darvic colour rings.

Visits are made to the breeding colony throughout the breeding season. A visit is made in late May to count nests and estimate the colony size. This is a crude estimate because we know that some breeding attempts commence later than this.

It is difficult to monitor individual nests as, particularly in the larger colonies, the time taken to do this could cause excessive disturbance.

Visits are made at regular intervals to ring the pulli until the last nestlings fledge. All of the pulli large enough to ring are fitted with a BTO metal ring on one leg and an engraved Darvic ring on the other leg. The minimum age for ringing with Darvics is greater than if using BTO rings alone because whilst the thickness of the tarsus is enough to allow a metal ring to be fitted at 4-5 days old the distance between the knee and the ankle is not enough to fit a darvic ring until about 10 days old. Due to the poor recovery rate of metal rings it is not thought to be worth ringing smaller nestlings with just BTO rings.



The height of the Darvic ring we uses is a compromise between having sufficient space to have a large inscription and reducing the height to allow the pulli to be ringed before they become too mobile to catch.

The length of time visiting a raft or island is kept to a minimum in order to reduce disturbance. In our pilot study we were at first concerned that in natural sites pulli tended to swim away from the islands as we approached. However our observations show that BHG pulli take to the water as soon as they are able and are naturally aquatic from an early age. At natural sites prior to fledging they form “crèches” of young on the lake; probably this is an approach that ensures that the young are safe from ground predators.

On two occasions we witnessed large young being pulled under water and the most likely culprit is that they were eaten by large Pike!

The BHGs breeding on rafts are confined and we therefore able to ring all of the pulli that live to be big enough to ring. On the natural island sites with frequent visits we are to ring a large proportion and we estimate from observation that we successfully ring at least 90%.

Project Aims.

At the beginning of the project we set ourselves a number of questions that we hoped would be answered by ringing. After 4 years we have begun to answer some of these questions and inevitably we have raised some more questions as a result of our findings.

This report is an update on the findings to date of what is becoming a fascinating long term study.

- **Where do Black headed gulls which breed in the CWP go in winter?**

Throughout Europe Black headed gulls are long distance migrants. Ringing recoveries show that birds found in Britain in winter can originate from as far away as Russia. Recoveries of Black-headed gulls hatched in Britain suggest they stay in Britain but do the CWP birds stay in the CWP area in winter?

The number of sightings of our colour ringed BHGs has so far exceeded our expectations. Almost as soon as the birds are on the wing we begin to get sightings. To date of the 526 pulli ringed with Darvic rings we have had sightings of 80 individual gulls of these 67 individuals (13%) have been reported outside of the CWP. Many individuals have been sighted on multiple occasions and we are beginning to build detailed life histories of individual birds.

The sightings suggest that young BHGs linger in the CWP for a short time after fledging, they then disperse in a mainly west/ south direction. (see map)

At least some of the young hatched in the CWP “migrate” this tends to be in a westerly direction. This would be consistent with the strategy of the Black-headed Gulls from mainland Europe that migrate to Britain. One could argue that the reason British birds are not long distance migrants is that there is no land further to the west than Cornwall and Ireland for them to migrate to. However in 2007 we received our first long distance sightings with birds seen in Spain and Portugal

Although some CWP birds migrate, sightings of colour ringed birds in the CWP in the suggest that some stay or at least return to the CWP area in winter

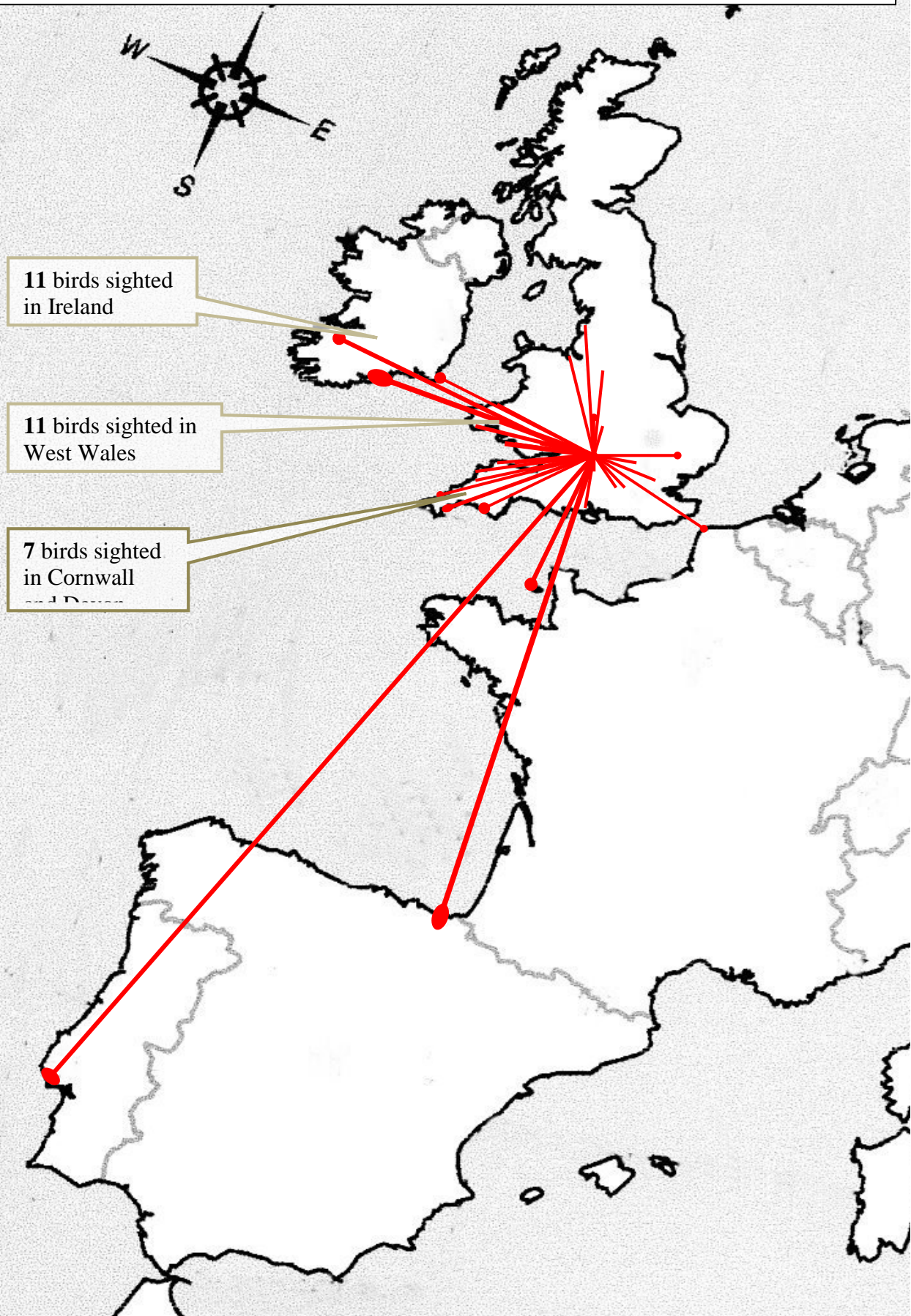
- **Do the young reared in the CWP return to breed?**

Non Breeding birds in their second year of life are seen at the breeding colonies in Spring. Life histories based on sightings show that these birds are not necessarily individuals that stay in the CWP in winter. Individuals have been shown to migrate as far as Ireland and then return as non breeding first year adults

Birds ringed as nestlings in 2004 and 2005 have now returned to breed. A total of 47 individuals been recorded in the CWP in during the breeding season mostly at or close to a colony.

An interesting phenomenon is that birds are sighted at different colonies throughout the breeding season. It is possible that whilst we regard each site as an individual colony the birds regard the area as one colony.

Sightings of Black Headed Gulls Ringed as Nestlings in the Cotswold Water Park





A young Black Headed Gull - 2A92 - which was ringed June 2004 at Lake 9 as a chick and sighted in Cheshire September 2004

- **Can the numbers breeding be increased by providing more artificial nest sites?**

The answer is most certainly yes. Indeed without the provision of artificial nesting sites or the management of natural sites Black Headed gulls would probably only breed sporadically in the CWP when suitable sites occurred as a result of gravel working.

- **What are the preferred breeding conditions of Black headed gulls in the water park and how can artificial sites be managed to encourage breeding.**

In the water park Black Headed gulls breed on rafts and islands. On islands they seem to prefer those with a combination of low vegetation and bare ground. They also seem to prefer the island to have an elevated profile so that their nests are a foot or more above the water. Terns seem to prefer bare ground without any high vegetation but will nest on short grass. Terns will also nest on islands and gravel banks that are just above the water level.

Survival

The number of sightings of birds is such that we can at least make estimates of the minimum number of birds surviving. Using sightings of birds ringed we have been able to calculate the number of birds known to have survived to breeding age. These estimates are the minimum number as it is likely that some birds survive and are not sighted.

This analysis has revealed that there is a marked difference in resighting rate between pulli ringed at the two main colonies. Assuming that the likelihood of a bird being resighted is the same from each colony this would suggest that there is a difference in survival.

	2004 Pulli % resighted in first year	2005 Pulli % sighted in first year
Lake 9	36%	31%
Lake 74	23%	19%

Why is this? There is a possible concern is that providing rafts is a type of “ecological trap” that encourages BHGs to breed in an unsuitable location. However this is not the only possible reason for this phenomenon.

The way in which young are selected for ringing is different for the two sites. Pulli on Lake 74 are confined on rafts by a fence that keeps them there until they can fly. Ringing is carried out on 2 or 3 visits each year when all pulli large enough to take a darvic ring a re ringed. On the other hand on Lake 9 the islands where the gulls breed are covered in vegetation by the time nestlings hatch. Most young are found when they leave the island and are either hiding in the margins or in “crèche” groups on the lake. Therefore most of the young ringed on Lake 9 are close to fledging whereas on Lake 74 the sample is made up of on average younger chicks.

The most likely explanation of the differential survival of ringed bird is that by the time Lake 9 birds are ringed most nestling mortality has already occurred on Lake 74 some of the young ringed do not fledge and are therefore not available to be resighted.

The fact that on average far more young are ringed per pair on 74 than 9 would support this. (In 2004 ,0.7 per Pair on Lake 9, 1.6 per pair on Lake 74)

This highlights the difficulties of calculating survival using data from nestlings.

The future.

We plan to continue to ring as many BHGs as possible in future years. In order to learn more about survival and movements.

Ultimately we hope to have a large proportion of the breeding birds colour ringed although recruitment of birds ringed as pulli is not likely to achieve this quickly. It is hoped that we will be able to find a way of capturing breeding adults either before or after the breeding season. Tape luring has been attempted with no success.

Acknowledgements

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- Gareth Harris and Nick Adams who spent many hours reading hundreds of colour rings of birds roosting on Lake 32.
- The Cotswold Sailing Club whose management of Lake 9 provides ideal conditions for BHGs and whose hospitality gave us access to the colony here.
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- Oaklands signs who engrave the rings.

