Riv. ital. Orn., Milano, 82 (1-2): 58-65, 30-IX-2013

Peter Rock

URBAN GULLS. WHY CURRENT CONTROL METHODS ALWAYS FAIL

Abstract – Urban gull populations in Britain and Ireland have grown exponentially since 1969 to something in excess of 100,000 pairs today and could reach 500,000 pairs within ten years. Pest control has singularly failed to address the issue and will continue to fail until underpinning science reveals why urban gulls are so successful. All deterrence methods so far employed (and described) are largely based on guesswork and may have introduced further complications into the issue. In Italy numbers of urban gulls and their attendant problems will certainly grow (possibly exponentially) in the next ten years.

Key words – urban avifauna, Laridae, British Isles, pest control, deterrence methods.

Riassunto – *Gabbiani urbani. Perché gli attuali metodi di controllo falliscono sempre.*
Le popolazioni di gabbiani urbani (Gabbiano reale nordico, *Larus argentatus*, e Zafferano, *Larus fuscus*) in Gran Bretagna e Irlanda sono aumentate esponenzialmente a partire dal 1969 fino a raggiungere oggi qualcosa come 100.000 coppie, e potrebbero raggiungere le 500.000 coppie in altri dieci anni. Il controllo delle specie infestanti ha sorprendentemente fallito in questo campo e continuerà a fallire, finché con l'appoggio delle conoscenze scientifiche non si scoprirà perché i gabbiani urbani abbiano un tale successo. Tutti i metodi deterrenti finora impiegati (e descritti) sono in gran parte fondati su congetture e possono aver anche introdotto ulteriori complicazioni in questo campo. In Italia i numerosi gabbiani urbani e le loro conseguenti problematiche aumenteranno di certo (probabilmente in modo esponenziale) nel prossimo decennio.

Parole chiave – avifauna urbana, Laridae, Isole Britanniche, controllo infestanti, metodi deterrenti.

Introduction

Roof-nesting by the large gulls was virtually unknown in Britain before the Second World War. There was some minor colonisation by the early 1960s (Parslow, 1967), but in 1969-70 Operation Seafarer identified significant numbers of urban sites (60) and a total of 1,310 pairs of Herring, *Larus argentatus*, and Lesser Black-backed Gulls, *Larus fuscus*,

7, Parkside Avenue, Winterbourne, Bristol BS36 1LU. E-mail: pete.rock@blueyonder.co.uk

nesting on buildings (Cramp, 1971). Thereafter, urban colonisation was rapid. By 2004 it was estimated that well over 100,000 pairs were nesting on rooftops in Britain & Ireland (Rock, 2005a).

This exponential growth was fuelled by massive food availability - mostly from newly opened landfills catering for massive increases in municipal waste (the beginning of 'Throw-Away Society') and particularly after the 1956 Clean Air Act forbade the burning of refuse on site. The gull species were, of course, quick to take advantage of this new feeding opportunity (Parslow, 1967) and in the Severn Estuary Region, for example, numbers rose by fifteen-fold in rural (wild) colonies by the early 1970s (Mudge & Ferns, 1980).

As a result of dramatic population increases, it appears that traditional colonies were outgrown and prospective breeders sought out alternative breeding areas. In short, they began to colonise towns and cities by the late 1960s and early 1970s. Gloucester, for example, was first colonised (3 pairs) in 1967 (Owen, 1967). It now supports 2,700 pairs (Rock, 2007a).

Since the mid-1980's complaints to local authorities in UK about roof-nesting gulls have grown in direct proportion to colony sizes. Many local authorities nowadays receive in excess of 100 complaints annually (Rock, 2005a). This, in turn, led to increasing Media coverage of the problems attending all urban gull colonies, but with particular emphasis on aggression. Aggression (especially during the chick-rearing phase), however, is a far less common subject of complaint than are noise, mess and damage in that order.

Nuisance is a fact of life in towns with urban gull colonies, but urban gulls can also have serious financial consequences for local economies. The readily calculable costs surround mess clearance (faeces on streets, masonry, windows, car paintwork, etc), damage repair (air-conditioning and other roof plant insulation, roofing felt and flashing, rain-washed nests blocking gutters and drains causing flooding, degradation of roofing material, etc), roof maintenance (nest clearance and roof cleaning - a very expensive operation if this involves many nests) and so on... Even the costs of responding to complaints can be assessed.

Less easy to calculate are the hidden costs, but it is suspected that these may be rather more significant for local economies. For example, tourists persistently woken before dawn will be reluctant to visit again; shoppers having to avoid faeces and aggression will prefer to spend their money at centres where gulls do not breed; sleep-deprived workers will either fail to turn up or will produce substandard work and so on...

In the light of the foregoing it is not difficult to understand the growth of those sectors of the pest control industry specifically targeting gulls. This paper assesses the efficacy of various systems, methods and equipment devised for the purpose of deterring roof-nesting by the large gulls.

Materials and methods

A plethora of equipment has been devised or adapted for use against urban gulls.

All of the above methods have the potential to cause urban gulls to relocate their breeding effort. However, of these simple methods two in particular (continual nest removal and roof netting) can certainly result in forced relocation (see discussion).

Roof netting, originally designed to prevent pigeon access has (without testing) been assumed to be suitable for gulls. This is not the case. In most urban gull colonies in UK gulls are all too often caught in roof nets because the mesh size is wrong. Carpal joints are trapped resulting in a lingering death over several days. The worst observed was in Cardiff in 2004 with 13 dead gulls (ROCK, 2004a).

People feeding gulls in town will always attract attention. This has led to the anecdotal assumption that gulls breed in town because of feeding opportunities. Of course, the large gulls never reject such opportunities, but the primary reason for breeding in town is a safe nest platform. Town has no predators and little disturbance. Additionally, ambient temperatures in town are 4-6 °C higher than the surrounding countryside (Heat Islands) allowing urban gulls to breed slightly earlier than those in traditional, wild colonies (ROCK, 2005a).

Furthermore, the large gulls are capable of flying speeds in excess of 100 kph (ROCK, 2006a) allowing home (feeding) ranges to be greater than 100 km in radius. From research (e.g. ROCK, 2007b), it is clear that the large gulls forage widely at all times of the year and know their home ranges intimately. This is a sensible survival strategy because if one food source becomes unavailable, they will know about others.

The more serious methods require more attention because (in theory) they can be effective. There are, realistically, only two lethal methods. These are poisoning/narcotising and shooting. Poisoning has long been outlawed in UK, but narcotising (and then despatching narcotised gulls) has been shown to be very effective in reducing breeding numbers in wild colonies (e.g. COULSON *et alii,* 1982; SOWTER, 2004). However, the colonies involved were far from the public gaze. In town, such action would be very public. In Scarborough in 1995 a vociferous, well-connected and articulate lobby effectively prevented further intervention. The active chemical (Secanol) has now been proscribed by DEFRA.

The shooting of gulls in town would require many guns and much time. In Gloucester, for example, with 2,700 pairs (ROCK, 2007a) this would mean eliminating a major percentage of at least 7,000 gulls (the breeding adults plus the non-breeding immatures). Even assuming that the legal complexities surrounding private property and the use of firearms could be overcome, this would be quite a task!

Tab. I - Outline of the simplest methods with comment.

Method	Description	Comment
Nest Raking	Smashing eggs and/or destroying nests.	Birds simply rebuild nests and relay eggs.
Egg Pricking	Eggs are pricked with a needle or injected with formalin.	Eggs are quickly recognised as being non-viable. Gulls reject them and relay.
Continual removal of nest material	Requires someone to visit roof daily and remove nest material as soon as it appears.	This method is completely effective, provided it is assiduously carried out and that all parts of the roof are accessible. *Comment below*.
Signs/Posters	Requesting people not to feed gulls or threatening bye-laws.	These are mostly ignored amongst many other signs and posters. Every town has one (or several) people who feed gulls. No effect. *Comment below*.
Bird Scarers	(a) Loud bangs, screaming noises, waving streamers, etc.	Loud noises are quickly ignored by gulls in towns full of odd noises.
	(b) Plastic Eagle Owls, Balloons resembling threatening eyes, etc.	Plastic and other objects of all types are ignored by gulls. No effect.
	(c) Gull distress calls broadcast across urban areas.	These have a temporary effect, but are quickly recognised and then ignored. Often they make more noise than gulls and can be stopped by complaints from residents.
	(d) Wind-driven, moving structures - 'The Spider' etc.	No effect.
Wires & Spikes	Tensioned wires/spikes are positioned on parapets and other structures to prevent perching and nesting.	Little or no effect. Gulls will place nests elsewhere and, sometimes, on top of such equipment.
Birds of Prey	Falconers fly birds of prey in urban areas.	This creates considerable disturbance amongst the gulls. However, this does not deter breeding and may result in injury to falconer's bird. More show than effect. *Comment below*.
Roof Netting	Covering the whole, or part of a roof so that birds cannot get to it. Can be very expensive.	This has some effect, provided netting is carefully positioned and maintained. If not, birds will nest on top of it. Well positioned and erected netting will prevent birds nesting on a particular roof, but will also cause birds to relocate. *Comment below*.

Such an operation would certainly attract considerable Media attention. Quite apart from the inevitable, unfavourable publicity, in an increasingly litigious society, if buildings or other structures were damaged or, worse, somebody were shot (or narcotised), due legal (and costly) process would be brought to bear. Even though some (discreet) shooting by individuals and pest control companies is known to occur, local authorities have distanced themselves from such action. It is therefore concluded that lethal methods would be politically unwise in town.

Currently, the most popular method is to oil, or replace eggs with plastic dummies. Oiling with liquid paraffin effectively prevents hatching, but sand-filled dummy eggs (as used by poultry breeders) are seen as more efficient. In theory, by preventing hatching (i.e. reducing the number of offspring in any year), it is believed by adherents that populations will decline. This is wrong.

The figures are these:

Of 100 untreated eggs, approximately 20% can be expected to be unsuccessful (hatch failure, fledging failure or death very soon after fledging, etc). Statistically, half can be expected to be males/females. Females can be expected to emigrate whereas males tend to return to their natal colonies once they are old enough to breed (Rock, 2005a). And then there is survival. Survival rates amongst the large gulls are high but, statistically, only (circa) 45% can be expected to survive to breeding age. Thus:

100 minus 20%=80 x 45%=36 divided by 2=18.

Therefore, if 100 eggs are oiled/replaced, the possibility is that 18 birds will have been prevented from returning to breed. However, other factors are also at work.

1 If a gap appears in any niche, it will be filled.
2 Successful colonies attract more recruits than failing colonies.
3 There are many other urban colonies supplying recruits to the treated colony.
4 If pairs fail to breed in any season (or several seasons), it will make no difference to growth rates in the region.

The figures above and the additional factors serve to negate any hoped-for reduction in population size and neither will there be any decrease in the mean annual growth rate. The same figures would also apply to surgical sterilisation (assuming that these birds survive the surgery).

Egg interventions can have a place in management of urban gulls. During incubation adult birds are measurably quieter than during other breeding phases (especially chick-rearing). Therefore, this method is properly used in sensitive areas such as hospitals, shopping centres, etc.

But, there are other dimensions to egg interventions. In 2004 an egg

oiling campaign took place in Gloucester. In 2005 an 18.6% decrease in numbers of breeding pairs was observed in the treated areas (ROCK, 2005b). However, a 51% increase in numbers of breeding pairs in another part of Gloucester was observed in the same year. Similar declines and increases as a consequence of oiling have been noted in Brest, France (CADIOU *et alii,* 2005).

Further, little is known about divorce amongst gulls. Under normal circumstances the large gulls pair for life (CRAMP & SIMMONS 1983). Breeding failure is a cause of divorce, but exactly how many breeding failures will result in divorce is not known. Amongst Great Skuas, *Catharacta skua*, divorce results in females seeking younger, fitter males (CATRY *et alii,* 1997) and amongst urban gulls, whilst uncommon, it is increasingly the case that adult females are paired with young males (3cy birds) in urban colonies in the Severn Estuary Region (ROCK, 2005a). It is possible that these adult females are divorcees and that perhaps it is only one breeding failure that has triggered divorce. If this is the case, then interventions (such as egg oiling) may be responsible for divorce.

Discussion

Several of the methods described above can result in forcing gulls to relocate their breeding efforts (most particularly continual nest removal, netting and egg interventions). It is often the case that local authorities acting against urban gulls care less about what happens after interventions than about simply getting rid of gulls from their areas of jurisdiction. The large gulls can live for 35 years and if they are deterred from nesting in one location, they will certainly breed in another, possibly only as far as the building next door. Questions, therefore, must be raised about the wisdom of forcing relocations.

Little is known about such forced relocations, but the demolition of a large warehouse in Bristol in 1997 (ROCK, 2005a) resulted in approximately 60% of colour-ringed breeding birds relocating to roofs elsewhere in the colony, but 40%, though they were seen at landfills, roosts and even abroad, were never found breeding in Bristol. It was not until 2003 (ROCK, 2003) that the first of these 'disappeared' birds was found breeding in Chippenham - some 32 km from Bristol. Had this bird relocated in 1998 it would have been one of Chippenham's first colonists... It is suggested that interventions (of whatever kind) are very likely to introduce more complexity into an already complex situation.

To illustrate rapid colonial growth, the Bath colony doubled in size from 400 to 800 pairs in 6 years (ROCK, 2007c), Gloucester doubled from 1,350 to 2,700 pairs in 5 years (ROCK, 2007a), but Felixstowe, Suffolk, more than doubled in size from 630 to 1,470 pairs in only 3 years (ROCK,

2007d). Growth rates, of course, are entirely dependent upon the carrying capacity of the environment (i.e. food and nest sites).

Town offers limitless nest sites (even Gloucester has ample room for expansion), but food may become an issue. In line with the European Framework Directive on Waste (75/442/EEC) and the Landfill Directive (1999/31/EC), Government is acting to reduce waste to landfill (Waste Strategy 2000, National Waste Plan 2003-2020), the requirement being that municipal waste is reduced to 30% of present levels. Landfills play an important role within the urban gull issue (ROCK, 2005a), but during a deterrence trial at Gloucester Landfill (ROCK, 2007b) 31% of deterred gulls did not utilise alternative landfills. These birds were able to find food from sources other than landfills, but these sources are unknown. As landfills receive less organic waste these alternative food sources may become critically important (ROCK, 2007b).

If the annual growth rates observed between 1994-2004 (17.6%) are maintained the urban gull population in Britain & Ireland may exceed 1 million pairs within the next 10 years (ROCK, 2005a), but if not, it is highly likely that we will see at least 500,000 pairs and urban gulls will far outnumber wild gulls (e.g. MITCHELL *et alii,* 2004).

And what of Italy? Italy has several known urban gull colonies of varying sizes including Naples, Livorno, Venice, Rome and Trieste where Yellow-legged Gulls, *Larus michahellis*, breed on city rooftops and industrial units. It is clear that within the next 20 years there will be many more and some will become large colonies (i.e. more than 1,000 pairs).

Pest control has so far failed to make any significant impact on annual growth rates in UK (ROCK, 2005a). It is suggested that this is because, at best, methods attempt only to address the symptoms and, at worst, are just guesswork. The considerable expense involved in pest control to date must, therefore, be viewed as wasted money. Until we understand much more about why urban gulls are so successful from scientific investigation, there will be no resolution to the issue, failure will be perpetuated and money spent to little effect. The question is this: when did we ever solve any problems without first knowing, precisely, what we are dealing with?

Italy, presently, is at the beginning of the urban gull issue with only small roof-nesting populations. In 2007 Trieste supported circa 350 pairs (BENUSSI, 2005). Bristol supported this kind of population in the late 1980s, but in 2004 the Bristol colony stood at almost 2,000 pairs (ROCK, 2004b). All established Italian urban colonies will grow and new towns will be colonised during the next 10 years. If, as seems likely, exponential growth similar to that experienced in UK is Italy's future, this paper carries a warning...

Acknowledgments - I would like to express thanks to Enrico Benussi and Emily Prall for inviting me to speak at the 14th Italian Ornithological Congress in Trieste and for inviting this paper.

REFERENCES

Benussi E., 2005 - La gestione di *Larus michahellis* nell'area urbana di Trieste. Primi risultati sui metodi di censimento e contenimento dei nidificanti. In: Boano G., Cucco M., Pavia M. & Rubolini D. (eds). Atti XIII Convegno Italiano di Ornitologia - *Avocetta*, 29 (num. spec.): 135.

Cadiou B., Esnault C. & Sonneck M., 2006 - Bilan des opérations de contrôle de nuisances de la population de goélands de la ville de Brest, Finistére - 2005. Rapport Bretagne Vivente - *SEPNB, Alpiniste brestois du bâtiment*, Ville de Brest, 20 p.

Catry P., Ratcliffe N. & Furness R.W., 1997 - Partnership and mechanism of divorce in the great skua - *Animal Behaviour,* 54: 1475-1482.

Coulson J.C., Duncan N. & Thomas C., 1982 - Changes in the breeding biology of the herring gull (*Larus argentatus*) induced by reduction in the size and density of the colony - *Journal of Animal Ecology*, 51: 739-756.

Cramp S., 1971 - Gulls nesting on building in Britain and Ireland - *British Birds*, 64: 476-487.

Cramp S. & Simmons K.E.L., 1983 - Birds of the Western Palearctic. Vol. 3, Waders to Gulls - *Oxford University Press*, Oxford.

Mitchell I.P., Newton S.F., Ratcliffe N. & Dunn T.E., 2004 - Seabird Populations of Britain & Ireland - *T. & A.D. Poyser*, London.

Mudge G. & Ferns P., 1980 - A census of breeding gulls in the inner Bristol Channel - *Cardiff University*.

Owen B.A., 1967 - Lesser Black-backed gulls nesting on warehouse roofs inland - *British Birds*, 60: 416.

Parslow J.L.F., 1967 - Changes in status among breeding birds in Britain and Ireland: part 3 - *British Birds*, 60: 177-202.

Rock P., 2003 - Roof-nesting Gulls in Wiltshire. Survey conducted in April 2003. Report to Wiltshire Ornithological Society.

Rock P., 2004a - Roof-nesting Gulls in Cardiff. Follow-up survey conducted in May 2004. Report to Cardiff County Council.

Rock P., 2004b - Roof-nesting Gulls in Bristol. Survey conducted in May and June 2004. Report to Bristol City Council.

Rock P., 2005a - Urban gulls: problems and solutions - *British Birds*, 98: 338-355.

Rock P., 2005b - Roof-nesting Gulls in Gloucester. Follow-up survey conducted in May 2005. Report to Gloucester City Council.

Rock P., 2006a - Report to Gloucestershire Airport.

Rock P., 2007a - Report to Gloucester City Council.

Rock P., 2007b - Monitoring the effects of deterring gulls from a major landfill site - A Two week trial in March 2004 - *Aves*, 44 (3): 155-162.

Rock P., 2007c - Report to Bath & North-East Somerset Council.

Rock P., 2007d - *Suffolk Birds*, 56 (2006): 17-21.

Sowter D., 2004 - Report to UUPLC and Abbeystead Estate.