

Ecological and Ethological Requirements of the European Otter

Experience of the Reintroduction of the Species in Britain

by

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SUMMARY

Since 1985, the Vincent Wildlife Trust has operated a rehabilitation unit for orphaned and injured otters which, to date, has cared for over 100 individuals. In the U.K., such otters have to be returned to the wild when they are fit. Their destination is determined by their origin and status with some individuals being despatched to their home areas whilst others are used for a restocking programme in cooperation with various conservation authorities.

The practical experience gathered from this programme is discussed in the context of existing reintroduction policy guidelines and the future development of rehabilitation and restocking is considered.

RESUME : exigences écologiques et comportementales de la loutre d'Europe : expérience acquise en matière de réintroduction de l'espèce en Grande Bretagne.

Depuis 1985, une organisation anglaise, le Vincent Wildlife Trust, se charge de revalider puis de relâcher des loutres (jeunes orphelins et adultes accidentés) dans leur milieu naturel. En Grande-Bretagne, en effet, ces loutres doivent être remises en liberté lorsqu'elles sont rétablies. De 1985 à 1992, le nombre de loutres recueillies par le centre est passé de 5 à 22 par an, pour un total de 100. La plupart (85 %) sont des jeunes de 6 à 8 semaines, victimes des tempêtes d'équinoxe ou de l'hiver. Deux tiers de ceux-ci ont été réintroduits avec succès, contre seulement 31 % des adultes. Différents facteurs sont pris en considération pour sélectionner une zone de lâcher : origine des individus, habitat favorable à l'espèce, étendue suffisante, ressources alimentaires adéquates, pollution nulle, nombre minimum de sources de conflits potentiels (présence de piscicultures par exemple), adhésion des propriétaires privés et autres groupes d'intérêts au programme de réintroduction, population initiale peu abondante.

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De nombreux auteurs mettent en cause la nécessité et l'efficacité de la reproduction de l'espèce en captivité et de sa réintroduction dans la nature. En outre, une controverse existe au sujet de la détermination de la cause du déclin de l'espèce en Grande-Bretagne (pesticides dont les PCB, mercure ?). Or, une des conditions à remplir pour effectuer des remises en liberté est de s'assurer que les causes de disparition n'opèrent plus dans la zone des lâchers. A défaut d'un consensus sur la question, la sélection des zones de lâchers s'avère difficile. Concernant les individus revalidés, l'expérience a montré qu'il était préférable de les relâcher dans les zones non occupées, ceci afin d'éviter la compétition et les agressions directes de la part des congénères. Il est aussi recommandé que les jeunes recueillis soient élevés et réintroduits en petits groupes. Entre 1990 et 1994, et après des études préalables, 11 remises en liberté concernant 25 individus ont été réalisées. Le radiopistage a montré qu'une fois relâchées, les loutres établissent progressivement leur domaine vital tout en restant très fidèles à la zone de lâcher. Elles finissent par entrer en contact avec les communautés humaines mais deviennent aussi plus farouches. Actuellement, la population occupe entre 300 et 350 km de rivières. Les premiers jeunes sont apparus un an après le premier lâcher. Jusqu'à présent, on a observé de 8 à 11 familles et des reproductions chaque année. La survie des individus semble, en général, très importante. Toutefois, de 5 à 10 années seront encore nécessaires pour évaluer le succès de l'expérience.

Dans l'avenir, ces programmes de remise en liberté de loutres seront confrontés à deux problèmes : d'une part, l'augmentation du nombre d'individus devant faire l'objet de soins puis d'un lâcher, d'autre part, la diminution du nombre de sites convenant à l'espèce. Dans les autres pays européens, où l'espèce est davantage menacée, une certaine forme de réintroduction de la loutre pourrait trouver une certaine justification dans le cadre d'une stratégie de l'espèce.



Loutron orphelin nourri au biberon (Vendée, hiver 1995).
Hand fed orphaned otter cub (Vendée, winter 1995)

Introduction

In Britain two organisations are releasing otters ; the Otter Trust which breeds otters for release and the Vincent Wildlife Trust which uses rehabilitated otters. This paper will deal only with restocking programmes using rehabilitated otters.

The Vincent Wildlife Trust has run a rehabilitation unit for otters since 1985 at the request of the government conservation agency, as a result of protection afforded to otters by national legislation. When the unit opened the scale of need was unknown, but was expected to be small and irregular. With time it became clear that casualty otters, mainly orphaned cubs but also injured adults, formed a reliable and sufficient intake to be used for restocking in areas of Britain where otters are scarce. The facilities and practice of the rehabilitation unit have been described elsewhere (GREEN, 1991 ; GREEN and GREEN, 1991 et 1992).

Background

Britain differs from much of continental Europe in having an expanding otter population, showing marked recovery since the decline of the 1960s and 1970s. Populations in Scotland and Ireland currently occupy about 90 % of national survey sites and in Scotland otters have recolonised substantial urban and industrial areas and are breeding in Glasgow, our largest city (GREEN and GREEN, in prep.). In Wales in the last 15 years the otter population has expanded three-fold and occupies about 53 % of the country. In England, there has been extensive recovery in the west and otters now occur at 22 % of national survey sites, compared with 6 % in 1977-79.

The otters

Numbers of otters arriving at the unit have increased from 5 in 1985 to 23 in 1993. The total number of otters received is 114, with 50 % coming from Scotland, 27 % from Northern Ireland and 23 % from England and Wales. Of this total 85 % are young cubs, typically around 6-8 weeks old (body weight c. 1kg) but with some as young as one week (200 g). Although some cubs arrive as a result of specific unnatural events such as road accidents or the accidental destruction of a holt, the overall intake is skewed towards the equinoctial gales and, to a lesser degree, winter in general. This correlation leads us to believe that many cubs are orphaned by natural events such as winter storms or, as has been observed in Shetland, (KRUUK, CONROY and MOORHOUSE, 1991) by deliberate abandonment in times of feeding stress. Two thirds of all cubs are successfully rehabilitated, but the figure for injured adults is inevitably lower at 31 %. Typically injuries borne by adult animals arise from traffic accidents or aggressive encounters with other otters.

Release policy

Factors affecting such a policy fall into five groups :

1) Legal factors

In Britain rehabilitated otters have, by law, to be released into the wild when their recovery is complete. Releases are regulated by an Otter Release Committee which comprises the government conservation agencies, the Vincent Wildlife Trust and the Otter Trust. This committee has designated a zone in southern and eastern England where all restocking occurs, in an area where the native population is largely absent. This policy is designed to ensure that otter releases do not mask natural population fluctuations.

2) Genetic factors

Within Britain phenotypic and, possibly, genetic differences have been remarked only for the geographically isolated populations of Ireland (OGILBY, 1834 ; DADD, 1970) and Shetland (KRUUK, pers. comm.). Consequently all Irish otters, whatever their age or status, are returned to that country. In Shetland we have recently assisted in the establishment of a small rehabilitation unit so that casualties do not need to leave the islands.

3) Age and status

Having disposed of the Irish otters there remains a mix of orphans and adults requiring consideration. Since the latter have established home ranges and social relationships they are returned to their precise home area as soon as possible, without elaborate release procedures. The remaining cubs represent a random and widespread selection of the native gene pool. As such they constitute an ideal source of animals for a restocking programme.

4) Welfare factors

Otters must be reared to maximise their fitness for life in the wild and released at optimal age, using optimal procedures, at the best available sites to promote their chances of success.

To assist this process by providing basic behavioural data, wild otters were radiotracked before the programme started (GREEN, GREEN and JEFFERIES, 1984). Five release groups have subsequently been radiotracked to check their progress. Since radio harnesses provide a relatively short term link with released otters all animals are tagged with IUCN approved micro transponders (Trovan/AEG system) and can consequently be identified throughout their lives.

5) Theoretical factors

Moving animals from well stocked areas to parts of the country in which they are scarce is defined as restocking, as opposed to reintroduction which involves putting animals into areas from which the species has been lost. The Bern Convention promotes such exercises, providing that they contribute to the conservation of endangered species. Nationally, the Nature Conservancy

Council includes the translocation of rehabilitated otters as part of its recovery strategy for protected species in Britain (WHITTEN, 1990). A United Kingdom Strategy for the Conservation of the Otter is currently being formulated (TEW, 1993).

Active interventions in the ecosystem have generated considerable discussion which has resulted in various guidelines (UKCINK, 1979 ; IUCN, 1987 ; STUBBS, 1988). The relevant criteria may be summarised as follows :

- a) The species must have been present in the area in historic, preferably recent, time.
- b) There must be a clear understanding of why the species was lost to the area.
- c) The causes of extinction must have been eliminated.
- d) There must be sufficient suitable habitat to permit the establishment of released animals.
- e) Donor and recipient populations must not be jeopardised.
- f) Released animals must be fit for life in the wild and as close as possible to native stock.
- g) The programme should be thoroughly researched, monitored, documented and licenced.

Choice of release area

Working within the foregoing constraints, we consider the following factors when selecting a release area :

- a) Suitable habitat.
- b) Sufficient extent to accommodate the proposed programme and allow for population expansion.
- c) Adequate food supply.
- d) No serious pollution.
- e) Minimum number of potential conflict points, e.g. fish farms.
- f) Widespread acceptance of the programme by landowners and other interest groups.
- g) Sparse local otter population.

Discussion : does practice match theory ?

There has been considerable debate on the advisability of otter release projects (RALLS, 1990 ; MASON, 1991, 1992 ; REUTHER, 1992 ; WEBER, 1992) with many authors concluding that otter reintroduction programmes are unnecessary, of low conservation priority, risky for the animals involved or likely to fail. Concern is also expressed that captive breeding for release consumes resources and attention which could more profitably be applied to studying causes of decline or to habitat improvement. Examples are cited of programmes which have failed (Switzerland in 1975, WEBER, 1992) or are considered to have breached IUCN guidelines (East Anglia, MASON, 1991, 1992 ; REUTHER, 1992). Available information suggests that wild caught otters have a better chance of success in reintroduction projects than captive bred animals (SJOASEN and SANDEGREN, 1992), but there has been little consideration of rehabilitated animals for restocking because only recently has it become clear that numbers are sufficient to make such a project worthwhile.

In our release programme the criterion causing us greatest difficulty relates to the cause of the otter's decline. This reflects a wider controversy within British scientific opinion, which continues to be debated even though the native population is making a significant recovery. Some authors (CHANIN and JEFFERIES, 1978) argue that persistent organochlorine pesticides were responsible for reducing otter populations. This environmental hazard has now been largely eliminated. Others (OLSSON, REUTHERGARDH and SANDEGREN, 1981 ; MASON, 1989, 1991, 1992) have emphasised the continuing role of PCBs in the decline of the otter by depressing reproductive function. In a study of spraints MASON, MACDONALD, BLAND and RATFORD, (1992) conclude that parts of Britain are too contaminated by PCBs to support a viable otter population. MASON (1991, 1992) is also critical of the level of contaminant analysis carried out on prey species before a release programme of captive bred otters in Britain. However, a recent study by KRUUK, CONROY and CARSS (1993), using large numbers of otter corpses and eels, found no obvious correlation between concentrations of contaminants in prey and otters from the same river. The same study, citing the high concentrations of PCBs found in Shetland's thriving, isolated population, concluded that the role of PCBs in depressing otter populations by causing reproductive failure had been overstated. Both MASON and MACDONALD (1986) and KRUUK *et al.* (1993) also identify mercury as a contributor to the otters' decline.

With no general agreement as to the relative significance of these pollutants and dispute concerning biologically significant levels of PCBs, assessing the suitability of release areas is not easy. When the cause of decline cannot be clearly identified, neither can its elimination be demonstrated. As the British population expands into urban and industrial areas we are in danger of demanding higher standards of water quality and habitat in release areas than obtain in the areas from which the otters derive.

In view of doubts about reintroductions of otters, can the use of rehabilitated animals in Britain be justified ?

Given that otters entering care in Britain have to be returned to the wild (a situation which contrasts with that in Norway where euthanasia rather than

rehabilitation of wildlife casualties is the recommended option) we face a choice of either returning all otters to their home areas or releasing some into new territory. Our approach to this problem is essentially pragmatic. The genetic and other factors which condition our response have already been described. All release options involve potential risks, especially for rehabilitated cubs. In their case we have to balance the risks of release into unstocked habitat, with environmental parameters only partially understood, against the dangers of returning behaviourally naive individuals to well stocked habitat, where they may suffer both competitively and from direct aggression. One of ten otters released in Ireland has had to be returned to captivity, after suffering severe bites from a wild otter. It is worth noting that IUCN guidelines (Section 111[3]f) suggest that rehabilitated individuals should not be released into existing populations for this reason. Welfare demands that we rear cubs in small groups although most arrive at the centre as individuals. We release otters in these groups and have found that they remain together for several months after release. Splitting groups to return each to its home area would impose additional stress on the animals and create other, practical problems.

How may releases of rehabilitated otters be assessed so far ?

Initial releases were conducted cautiously, with otters being released within the established ranges of wild populations in Scotland and Wales. All of these releases were radiotracked, for periods of up to 3.5 months. Subsequently operations were transferred to the recommended release area in eastern England while still remaining close to the margins of existing otter populations. The chosen river system, the River Derwent in Yorkshire, is of high environmental quality and includes an extensive wetland National Nature Reserve on its lower reaches. The upper reaches are contained within a National Park. As an additional attraction, eel trapping is not permitted on this system despite its significant eel population. Extensive otter surveys were organised before releases occurred, with only occasional, widely dispersed signs being found. Data on pollution levels and fish stocks were obtained from the National Rivers Authority and the locations of four fish farms were identified. No release took place nearer than 10 km to a fish farm and riparian owners and their employees, particularly gamekeepers, were widely consulted.

Over a four year period, starting in 1990, 13 releases have occurred amounting to 29 animals. This degree of concentration contrasts with previous release practice in Britain which has been sporadic and widely spread. The release procedure, which has been described elsewhere (GREEN and GREEN, 1992), includes the use of temporary release pens of electrified netting. One release group was radiotracked and the entire river system was monitored throughout the release period by local colleagues. No further releases are planned for this area, which will continue to be monitored for at least five years. Limited publicity has been given to the scheme in order to maximise information input.

What have we learnt so far? In many respects our experience on the Derwent is similar to that from our earlier releases in Scotland and Wales. After release home ranges are developed slowly and there is often a short period of naive behaviour when otters lie up in inappropriate situations or are active in inappropriate circumstances. This emphasises the need for good quality habitat in the release vicinity. On the other hand, hunting is innate and although food is left by the release pen for several weeks otters return for it infrequently. Consolidation of home ranges occurs systematically over several months and all

otters radiotracked so far have shown a high level of fidelity to their release areas. One release group in Wales indulged in extensive travels, wandering overland between three river systems, but ultimately returned to within 4 km of the release pen. With the extension of their home ranges otters inevitably come into contact with human communities and our animals are now travelling through settlements on the Derwent system with populations of over 10,000. However they rapidly become wary, and as with genuinely wild individuals, are rarely observed. Monitoring of tracks and spraints suggests that the otter population is currently occupying some 300-350 km of this river system.

Although breeding is difficult to confirm in the wild the first known otter cubs appeared approximately one year after the first release. To date between 8-11 families have been observed with reproduction reported every year after the first occurrence. We are also aware of four losses from the original stock. Two of these were particularly informative since both drowned in a single eel net, one of only 9 illegal nets known to have been deployed on this river during the release programme. The third mortality involved an otter killed on a road 18 months after release. One otter has also been found dead beside a pheasant release pen. The minimum period from release to death has been four months but, in general, the survivability of introduced animals appears to be encouragingly high, over a diverse range of freshwater habitats. The only other negative event recorded was an opportunistic attempt by one fish farmer to blame the release programme for a mass fish kill.

As far as is practically possible this programme has conformed to IUCN guidelines and taken account of theoretical considerations. It is too early to say whether it has been a success, but 4 years on there have been few contra-indications. A more informed judgement will require a further 5-10 years of monitoring and we have deliberately designed this project so that such an assessment will be feasible. Our own expectations are positive but even if it is ultimately judged a failure we believe it will have been a justifiable and informative use of resources.

The future

The intake of otters has expanded steadily since the arrival of the first five otters in 1985 and by 1993 had reached a total of 23.50 % higher than in any previous year. Assuming the British population continues to expand naturally this will be reflected in the number of individuals requiring rehabilitation. At the same time there will be increasing difficulty in finding suitable release areas and in these circumstances our release policy will inevitably have to adapt. In Britain this is a problem which applies even more forcefully to captive breeding which is more costly, more complex and genetically less satisfactory than rehabilitation. The drafting of the United Kingdom Strategy for the Conservation of Otter will promote discussion of these issues.

For some other European countries, however, the position of the otter is more critical and the justification for some form of reintroduction project may be correspondingly greater. While captive breeding may be the only practical solution in more extreme circumstances, the British experience of otters needing care is unlikely to be unique. We are aware of orphaned cubs occurring in several European countries. It remains to be seen whether their numbers would sup-

port a release programme, but in view of the favourable economics and genetics of this alternative, it is our view that such a solution should be considered in any conservation strategy which includes otter releases.

ACKNOWLEDGEMENTS

We thank Libby Andrews, Helen Smith, Rob Strachan, Laura Winter and Gordon Woodroffe for data used in this paper.

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