

# RSPCA Wildlife Rehabilitation Protocol: Owls

RSPCA

2013



Photo: Little Owls waiting to be released, Mallydams Wood Wildlife Centre, © RSPCA

## Protocol for the rehabilitation of the bird group: Owls

### Contents:

1	Introduction.....	3
2	Species information.....	4
2.1	Species or group of species covered by this protocol .....	4
2.2	Identification of species covered by this protocol .....	4
2.3	General information on species (or group) as relevant to care in captivity.....	6
2.4	Diet in the wild.....	7
2.5	Environmental Enrichment.....	7
3	Pre-admission treatment.....	9
3.1	Information should be collected on the following:.....	9
3.2	Advice related to care, e.g. diet, provision of heat etc. ....	9
3.3	Advice regarding the fitness of the animal for transport. ....	9
4	Health and Safety.....	10
4.1	Introduction .....	10
4.2	Risk assessments .....	10
5	Decision making – to treat or not to treat .....	11
5.1	Information should be collected on the following:.....	11
5.2	Triage.....	11
5.3	Treatment on admission .....	11
5.4	Flowchart.....	13
6	Accommodation.....	14
6.1	Indoor 1 (intensive care) .....	14
6.2	Indoor 2 (less intensive monitoring).....	14
6.3	Stage 3 Outdoor Aviary.....	15
6.4	Flight Aviary .....	16
7	Diet.....	18
7.1	Semi-natural captive diet .....	18
7.2	Supplements .....	19
7.3	Environmental enrichment .....	19
8	Preparation for release.....	20
8.1	When to release .....	20
8.2	Where to release.....	20
8.3	How to release .....	20
8.4	Information .....	20
8.5	Marking requirements/tagging .....	20
9	Areas for research.....	20
10	Annexes.....	21
10.1	Fostering of barn owl chicks.....	21
10.2	Glossary and abbreviations.....	21
10.3	Product details.....	22
10.4	Bibliography.....	22
10.5	References .....	22

### Notes:

Areas highlighted within the text are areas that require further research or further clarification.

All dimensions and weights are in metric units.

All area measurements are for length x breadth x height (L x B x H).

## 1 Introduction

The RSPCA's Wildlife Centres and the Wildlife Department have prepared a series of husbandry protocols for the different species that are admitted to the Wildlife Centres.

The protocols have been produced by amalgamating the working practices from each centre into one document which has then been discussed at a workshop before being agreed by RSPCA staff. Any areas where agreement cannot be reached are then highlighted as areas for future research.

Where possible, an expert (from outside the RSPCA) on the behaviour and ecology of the species in question was invited to attend these workshops so they could offer advice and comment.

These protocols are based on the experience and knowledge of our wildlife centre staff and are supported by research demonstrating their success. They are subject to review and updates will be added as and when required. New protocols will also be added over time.

This protocol contains general information only. The RSPCA makes no warranties, representations or undertakings about any of the content of the protocol (including without limitation any as to the quality, accuracy or fitness for any particular purpose of such content).

References in this protocol to any person or organisation do not represent an endorsement of that person or organisation, or its members, products or services.

To the extent permitted by law, the RSPCA does not accept liability for any loss arising out of or in connection with the use of this protocol.

Copyright notice:

The content of these pages is protected by copyright belonging to the RSPCA. You may download and copy the protocol to use only for the purposes of safeguarding animal welfare during rehabilitation but you must not sell or republish them. For any other purpose, you may quote a single paragraph of text from a page of the protocol without seeking our permission, provided that you acknowledge the RSPCA as the copyright owner of the material.

Pages or sections may be reproduced for teaching or study purposes without obtaining our prior consent. You may print and copy the pages for your private study or for teaching purposes in schools, colleges or universities provided in each case that:

1. copyright and source indications are also printed and copied
2. no modifications are made to the materials and they are not used as part of any other publication
3. the document is printed and copied entirely and is not used in a derogatory or misleading context
4. a maximum of 30 copies are made.

For any other publication of extracts from this protocol, please seek our permission. You can do this by emailing us at [wildlife@rspca.org.uk](mailto:wildlife@rspca.org.uk)

## 2 Species information

### 2.1 Species or group of species covered by this protocol

This protocol covers all species of owl that commonly occur in the UK.

#### OWLS

There are five species of owl that occur regularly and nest frequently in the UK. They all come from one order, the Strigiformes. All species have soft plumage, short tail, forward facing, comparatively large eyes and a broad facial disc. There are two families, the Tytonidae, barn owls and the Strigidae "typical owls". The barn owls are separated from the typical owls because of their sparsely feathered, long, slender legs and a heart-shaped facial disc. The typical owls on the other hand have stronger, usually thickly feathered legs, and an almost round facial disc.

Family: **Tytonidae**

English name: Barn owl

Latin name: *Tyto alba*

Family: **Strigidae**

English name : Little owl

Latin name: *Athene noctua*

English name: Tawny owl

Latin name: *Strix aluco*

English name: Long-eared owl

Latin name: *Asio otus*

English name: Short-eared owl

Latin name: *Asio flammeus*

Other species encountered to date include: eagle owl *Bubo bubo*, Eurasian scops owl *Otus scops* and snowy owl *Bubo scandiaca*; all of which are included in the Strigidae Family.



**Little owl**

**Note:** A description for the eagle owl is included as it is occasionally encountered in centres as it is commonly kept as a pet and frequently escapes or is abandoned.

Species are named following the official listing by the British Ornithological Union (BOU)<sup>i</sup>.

### 2.2 Identification of species covered by this protocol

#### 2.2.1 Adult

##### Barn owl

Almost all white plumage on breast with pale orange, grey flecked back and upper wings. Long white legs with noticeable dark talons to the toes. Heart-shaped facial disc edged with darker feathers. Dense plumage of soft feathers makes the owl look bigger than it really is. Black eyes. Occasionally a dark form will be presented with darker underparts (these may be of continental origin). Sexual dimorphism in coverage of spots on (back and) chest with ♀♀ being slightly more speckled. ♂ & ♀ 240 – 350gms

##### Little owl

Dark brown/grey with light spots and streaks across its back and head; breast and lower front pale/white with dark spots and streaks. Clear white edge to facial disc and white eyebrow line gives a fierce expression. Yellow eyes. ♂ 140 – 190gms, ♀ 150 – 220gms



## Tawny owl

Mottled buff brown head, back, wings and tail lighter chest and belly with brown and black streaks. Light buff feathers down to toes. Darker/grey forms occur occasionally. Clearly marked facial disc with black eyes. ♂ 340 – 500gms, ♀ 420 – 620gms.

## Long-eared owl

Dark buff and grey brown head, back and wings. Dark streaked buff chest and belly. “Ears” (actually tufts of feathers) not always upright but characteristic of the species when showing. Orange eyes set in prominent orange/buff facial disc. ♂ 220 – 330gms, ♀ 240 – 370gms

## Short-eared owl

Light buff head, back, wings and tail with black scalloping making a darker overall appearance. Light buff merging to white chest with heavy streaks fading out to almost completely white on the belly. White/pale underwings with dark wingtips and dark carpal patches. Yellow eyes in clear but not so distinct facial disc. ♂ 260 - 350gms, ♀ 280 – 420gms

## Eagle owl

Brown plumage with darker centre and outer edges of contour feathers on the back giving the bird a mottled appearance. Often shows a paler breast with dense dark vertical streaks from throat that thin towards the belly where it is replaced by fine barring. Large, striking orange eyes set in a dark aggressive looking facial disc. Generally, referred to as being “barrel shaped” it is the largest owl in the region with small males of similar size to a large female snowy owl. ♂ 1800 - 2800gms, ♀ 2300 – 4200gms.

### 2.2.2 Young

#### Barn owl

Nesting period almost any time of year but majority of young appear in care from late May to September. Covered in short white down; leaves nest ledge/box after 9 – 12 weeks. Egg tooth lost comparatively late at about 14 days. A pictorial growth chart is available on the Barn Owl Trust website<sup>ii</sup> giving approximate weights and heights.

#### Little owl

Young appear from late April through May. White down turning grey at about a week of age. Fledge in 30 - 35 days occasionally up to 43 days. May explore from nest before fully able to fly and may fall to the ground where bird will be fed by parents or climb back to nest unaided.

#### Tawny owl

Young appear from late April through to June. Covered with white down until about a week of age then turns grey; eyes have pink eyelids and distinguish it from the barn owl. At around 25 & 30 days young may leave the nest and climb through branches (at this stage these birds are known as “branchers”). Birds fledge at about 35 days and are fed by parents for another 2 – 3 months. Suitable territories may be hard to find until after August. Eye coloration in young develops and clears.

#### Long-eared owl

Egg laying is usually confined to the period late February to early March. The young emerge from nest around last week of April to the first weeks of May. Uncommon in rehabilitation in UK. Covered in short white down. Dark facial disc with orange eyes, clear tufts of down in place of ear feathers. Leaves nest 23 – 24 days; fly at around 40 days. Egg tooth lost around day 9.

#### Short-eared owl

In good vole years when food supply is high, multiple brooded and therefore nests may be found at almost any time of the year. However, in the UK nesting period is usually approximately two weeks later than the long-eared owls. Uncommon in rehabilitation in UK. Nests on the ground. Young covered in pale buff down. Brooded by female for around a fortnight; young scatter into low undergrowth after this time. May travel away from the nest site making runs in the undergrowth, Dark facial disc with yellow eyes. Fly at around 24 – 27 days old but continue begging for food up to about 50 days old when they should be independent.

## Eagle owl

Will nest almost anywhere safe from predation and cryptic colouration of young vital to their survival. Young are mottled grey, white and buff this plumage provides camouflage in rocky nesting areas. Young will leave the nest at about 5 – 6 weeks old but may not fly until eight weeks old. Parents will continue to supply food for another month after this. In northern latitudes independence may therefore not be gained until October.

## 2.3 General information on species (or group) as relevant to care in captivity

### Barn owl

Resident but with post breeding dispersal of young. High winter mortality of young. Occasional birds from the Continent encountered. Often hovers to locate prey; erratic flight with twists and turns; uses post as lookout perches. Usually hunts alone but may be encountered in pairs on good habitat.

The barn owl is listed on Schedule 9 of the Wildlife & Countryside Act 1981 and cannot be released from captivity but a general licence allows the rehabilitation of wild bred and wild caught birds back into the wild. In England they may be released under the provisions of general licence WML GL22, available at:

<http://www.naturalengland.org.uk/ourwork/regulation/wildlife/licences/generallicences.aspx#3>

And in Wales its WCAL – 009 and can be found at:

<http://naturalresourceswales.gov.uk/apply-buy-report/apply-buy-grid/protected-species-licensing/uk-protected-species-licensing/general-licences-birds/?lang=en#.UaXY39LclIE>

Be aware that this is a common bird in captivity and care must be taken to determine if a barn owl is a wild bred owl or an escaped captive.

### Little owl

Usually hunts alone but during breeding season and in good feeding areas pairs may be seen hunting in the same sites. Will use posts as lookout points from where it will pounce on prey; may occasionally hover. Will utilise burrows and short tunnels especially during the breeding season but may also use them during winter periods for shelter. Have been known to “chase” prey down short tunnels.

### Tawny owl

Resident, although some individuals may travel across from the continent. Will pounce on passing prey from branches and actively hunt through the woodland surprising prey while on the move. They will also quarter open ground and even catch worms in a manner similar to that of the blackbird.

### Long-eared owl

Migratory, moving south during winter. A regular movement across the North Sea to the UK of continental birds from October to December mostly of young birds. Often encountered in communal roosts during winter – these may reach many tens of individuals. During breeding season occupies a small breeding territory and may share feeding territory with other long-eared owls but the immediate vicinity of the nest is fiercely defended. Almost exclusively nocturnal – more so than most owls. Although will hunt during daylight if food is scarce.

### Short-eared owl

In good feeding areas large congregations of this species may gather, especially in winter. Will fly at almost any time of the day. However, it prefers the early morning and early evening (crepuscular). Quarters fields and dunes in search of prey upon which it drops; may sometimes hover. Found over large areas in winter often being called nomadic. Britain can get large numbers from the Continent during the winter months. One of the most silent of owls.

### Eagle owl

A nocturnal hunter arising soon after sunset. Hunts alone, although territory fiercely defended by both ♂ & ♀. Very vocal. Unconfirmed as being naturally occurring in the UK. Birds encountered are likely to be escaped captive specimens. However, this species has bred in the wild in England and have produced young which may raise significant questions about the birds legal status in the UK.

**Note that section 14 of the Wildlife & Countryside Act 1981 does not allow the release of the eagle owl and unlike the barn owl there is no general licence. Application to**

release may be made to Natural England but issue of a licence will depend on the animal's origin and history.

## 2.4 Diet in the wild

### Barn owl

Food taken is almost exclusively small rodents with voles being the predominant species most studies state that small mammals make up 96% of the diet. Occasionally takes shrews, bats and small birds.

### Little owl

Diet consists mainly of beetles notably the larger species such as the chafers; dor, rove and ground beetles; crickets, grasshoppers and earthworms; small mice. However, as an aggressive hunter it is capable of taking quite large prey items from small pigeons to starlings and thrushes. May even take bird's eggs.

### Tawny owl

A very general feeder, taking small mammals (up to rabbit size!), birds, reptiles, insects and occasionally carrion.

### Long-eared owl

A specialist hunter of mice and voles. Noted to take young rabbits, dormice and squirrels.

### Short-eared owl

A specialist on small mice and voles of open country. Population does well in years when small rodent populations explode. Only occasionally takes birds.

### Eagle owl

Will take almost anything from voles to rabbits and hares and finches to mallard. The adult eagle owl is known to take larger prey such as small deer, and may even occasionally take fish.

## 2.5 Environmental Enrichment

- Most owl species prefer to eat from a "feeding post".
- Natural branching helps grip and keeps feet in good order.
- Shallow water bowls for drinking and bathing.
- Swinging perches improve balance and mobility.
- Tunnel or small wooden or cardboard boxes for little owl placed on the ground.
- Natural cover is valuable and will be used. Evergreen shrubs are favoured.



Fig 1: A vet examines an injured tawny owl





Figure 2: Young barn owl



Figure 3: Young tawny owl in the wild



Figure 4: Tawny owllet in care



## 3 Pre-admission treatment.

This part of the protocol is to provide information for telephone queries regarding owls and their rehabilitation, prior to receiving a gull at an RSPCA Wildlife Centre. There are two possible scenarios:

A member of the public is reporting a sick/injured or orphaned owl and wants further information as to what to do.

Prior to admission, some animals may be held at a veterinary surgery or other facility. Some, if not all, of these facilities may request information on care of the animal, before they send it to an RSPCA centre.

Does the owl need to be admitted? Try to determine if the bird needs treatment, if it can be treated on site or left alone? **Note that tawny owlets, as pictured in figure 3, are often found in this situation, but the owlet is perfectly capable of climbing back up the tree. So these birds should be left alone and monitored (from a distance), especially if the parents are calling nearby.**

### 3.1 Information should be collected on the following:

- a) Species.
- b) Finder's details.
- c) Date found.
- d) Extent of injuries, evidence of shock.
- e) Body condition, any previous injuries.
- f) Age of animal, including nestling or fledgling.
- g) Location animal was found (important to ensure it is returned to the same place).
- h) Finder's details
- i) All records of previous treatment (if from another establishment).
- j) Whether or not the birds are ringed or not ringed (note that a licence is not required to own an owl, but as all owls are on CITES, article 10 certificate is required if an owl is used for a commercial purpose). Owls may also be micro-chipped. More information can be found at <http://animalhealth.defra.gov.uk/CITES/birdregistration/index.htm>
- k) Closed rings (or microchip data) can be reported to either:
  - The National Theft Register<sup>1</sup> <http://www.theparrotsocietyuk.org/buying-a-parrot/theft-and-investigation> (mostly parrots, but will register all zoological specimens)
  - OR The Independent Bird Register<sup>2</sup> [www.ibr.org.uk](http://www.ibr.org.uk)

All information will be written and kept with the animal throughout its stay.

### 3.2 Advice related to care, e.g. diet, provision of heat etc.

- Warm dark box with a non-slip base eg a towel wrapped around the base insert or fitted carpet tile or fitted *AstroTurf*.
- Bird(s) to be kept in a quiet place.

### 3.3 Advice regarding the fitness of the animal for transport.

- Transport in a darkened box with a non-slip base; for example, a towel wrapped around the base insert of a cardboard carrier.
- Sky or Vari-kennels are useful for transporting larger birds of prey, but note that if these cages have wire doors and/or 'windows' these should be covered to prevent feather damage; towels are useful for this.
- Only when an owl is waterlogged or in extremis will heat be required.

<sup>1</sup> John Hayward. Tel No: 01869 325699. E-mail [jh@ntr.supanet.com](mailto:jh@ntr.supanet.com).

<sup>2</sup> Tel: 0844 700 8500

## 4 Health and Safety

### 4.1 Introduction

The RSPCA has developed the Wildlife Centre Protocols to provide guidance and advice on the keeping of certain species of wild animal for rehabilitation. Anybody who intends to treat sick, injured and/or orphaned wild animals must accept that there are risks in doing so. Some wild animals are potentially dangerous and may be capable of causing serious injury. Furthermore, all wild animals have the potential to carry parasites, disease and bacterial infections. Some of these may be passed to humans (zoonoses) or to other animals, either domestic or wild. Barrier nursing methods should be used to minimise the spread of these infections between animals.

### 4.2 Risk assessments

It is recommended that any establishment admitting owls should complete risk assessments for all areas.

This is a brief summary of some of the possible risks and suggested ways to reduce the effects.

Members of public are advised to use gloves or a suitable alternative (e.g. towel) when handling owls and to keep dogs etc away from injured wildlife.

Hazards	Control measures	Level of risk
Bites and scratches	Leather gloves or towels to be used when restraining. Goggles should also be worn.	Low
Diseases/Zoonoses	Gloves should be worn when handling Treatment areas must be cleaned thoroughly after examination	Low
Parasites	Gloves should be worn when handling	Low

## 5 Decision making – to treat or not to treat

### 5.1 Information should be collected on the following:

A range of information is required to make the most appropriate decision for the animal in care. Information collected under 3.1 on page 9 will be used to make an assessment, as will observations of the bird itself. A veterinary opinion will be taken into full account where necessary.

### 5.2 Triage

#### 5.2.1 Assessment relevant to the condition of the animal

Options for the animal are: euthanasia, treatment or immediate return to the wild. The considerations listed below will help to guide this decision.

Call the wildlife centres for advice. Decisions must also take into account the reasons for admission. Euthanasia is recommended for animals showing the following.

- A prolapsed or ruptured eye.
- A missing eye.
- A missing limb.
- A fractured beak.
- Old compound fractures and fractures at the joint.
- More than 50% flight feathers missing, broken or badly damaged.
- Declining condition when injured - for example when in extremis.
- Trichomoniasis severe
- Severe emaciation

#### 5.2.2 Animals that can be returned to the wild within 24 hours (or later)

- a) Uninjured tawny chicks found near the bottom of the tree. Release towards dusk under the tree where it was found and then return the following morning to check.
- b) Uninjured barn owl chicks where nest has been disturbed/destroyed 1. Install a nest box at the location where found in a suitable position (up high and relatively quiet) and place the chicks inside and monitor to ensure parents return to feed.
- c) Uninjured barn owl chicks where nest has been disturbed/destroyed 2. If a suitable location is available, follow procedure as above but provide food for the chicks in situ (x mice per day, placed by the nest at dusk). The chicks will then fledge normally.
- d) Uninjured barn owl chicks where nest has been disturbed/destroyed 3. These could be fostered but we recommend you follow the advice in the Barn Owl Conservation Handbook (see Annex 10.1)
- e) Uninjured adult owls that have only been confined for a few hours, of the species covered in this protocol can be released immediately (if it is legal to do so). See sections on General Information 2.3 on page 6 and release on page 20.
- f) Owls rescued from chimneys, which are often sooty, may require a wash and a period in care before release.

#### 5.2.3 Assessment relevant to the Centre and the management of the animals

- Is an experienced vet, wildlife assistant or wildlife centre supervisor available to see the animal within an appropriate time-scale?
- Is suitable housing/space available to accommodate the animal according to this protocol?
- Is current staffing levels sufficient to give the bird(s) the time required for good rehabilitation?
- What is the predicted intake of animals in the short term?
- Admission numbers will be controlled carefully to avoid overcrowding.
- A good supply of quality food must be assured.

### 5.3 Treatment on admission

- All adult birds of prey are examined by the vet.
- Uninjured orphans may not always receive veterinary care.

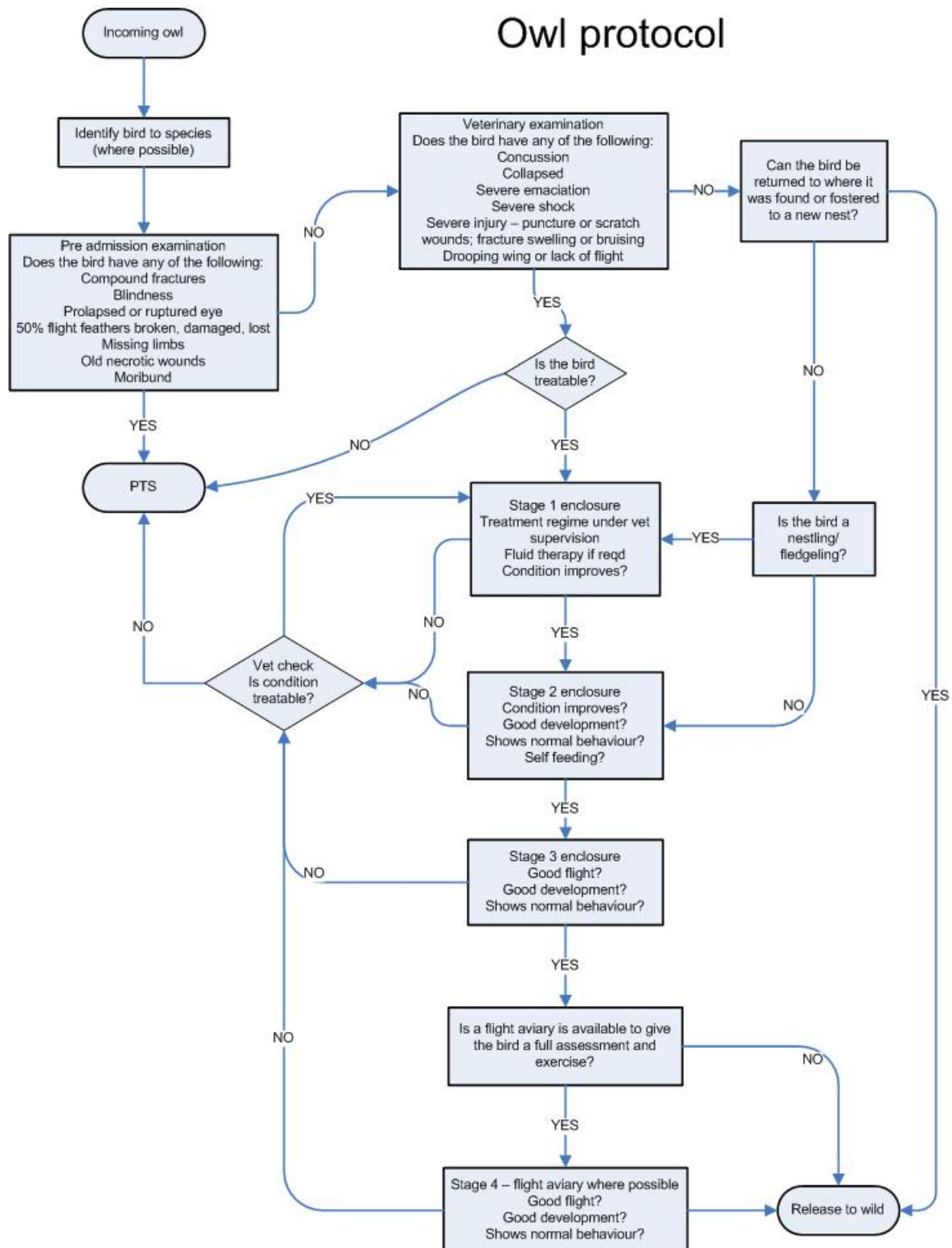
- Fluid therapy is required on arrival for all thin or weak owls.
- As a precautionary measure, a tail guard can be fitted to adult tawny owls under veterinary care and unable to perch in order to prevent damage to the tail feathers (indoor 1).
- Fit unique colour rings if there is more than one owl in any one group.



Figure 4: An intensive care cubicle as described in 5.1 at Stapeley Grange. These cubicles are useful for most species, including birds of prey. However some enrichment will be required in terms of perches etc.



## 5.4 Flowchart



## 6 Accommodation

### 6.1 Indoor 1 (intensive care)

#### Enclosure

- All owls listed in this protocol except the eagle owl can be housed in a darkened plastic cage or cardboard box with approximate minimum dimensions of 60 x 40 x 50cm.
- Nestlings of similar size and of the same species (whether or not they are related) can be kept in pairs in containers of the above size.
- If larger family groups arrive they can be kept together in a larger container but ensure that plenty of food is provided to prevent bigger chicks eating smaller ones.
- Adult eagle owls can be housed in a cubicle or aviary about 2 x 1.2 x 2.5m (a wildlife centre “intensive care cubicle” – see figure 4).

#### Lighting requirements

- Cover front of the cage to reduce light levels.

#### Substrate

- Nestlings not yet able to stand will be put on non-slip “nest-shaped” base. Ideally a small towel can be shaped to form a nest.
- Adults and fledglings that can stand confidently are placed on perch/log with newspaper and towelling/carpet tile/*Astroturf* base.

#### Temperature

- Normal room temperature is adequate unless the bird(s) is collapsed or weakened
- Heat is rarely provided except in cases of complete collapse or when recovering from anaesthetic (in both cases closely monitored) by using ceramic bulbs. Very young chicks (with eyes still closed) are placed them in a temperature controlled incubator.

#### Access to water

- A Small bowl of water may be provided for adults that are able to stand.
- All others, including healthy nestlings, will get moisture from a good diet, so should not be provided with a bowl of water.

#### Environmental Enrichment

- Provide seclusion and quiet. Towel covering wire front or facing open box to wall.
- Provide a stable log or perch for adults.
- If little owls are able to stand and move around a small cardboard box can be provided on the bottom of the container that they may use as a hide.

#### When to move to next stage:

- When bird is self-feeding and capable of getting onto low perches unassisted.
- Birds requiring limb exercise before moving to a large stage 3 “flight” are placed in a stage 2 enclosure.
- Birds may be placed in stage 2 enclosure to be assured of their capabilities or to continue veterinary treatment prior to a stage 3 enclosure.
- Young tawny owls at the “branching” stage (when wings start to develop primary feathers – at about 3-4 weeks old) may require progression to stage 2 to allow exercise. Little owls too may “erupt” the nest early and will be in a similar position to move.

If none of the above applies then a move to a stage 3 enclosure is applicable.

Hacking and soft release for immature owls can be considered at this stage but may require experience and a full site assessment. (See also release section.)

### 6.2 Indoor 2 (less intensive monitoring)

#### Enclosure

2 x 1.2 x 2.5m isolated area or “wildlife centre cubicle”. Ideally, it should provide height over flight distance.

## **Lighting**

Normal daylight hours

## **Substrate**

Astroturf, towels, newspaper (when birds are perching confidently) blankets

## **Access to Water**

Must have access to water bowl with water

## **Diet**

As above for adult (in shaded boxes).

## **Environmental Enrichment**

- Various sized branches
- Plucking perch or tree trunk.
- Wooden open sided box for cover for tawny and little owls.
- A wooden or cardboard box with one open side is useful and provides low cover for little & tawny owls.
- Securely placed branches with foliage may also be used to provide cover.

### **6.2.1 When to move to the next stage:**

- When self feeding and capable of short flight.
- All birds must be eating whole food not chopped.
- Birds may be placed in a stage three enclosure where treatment can be undertaken without being caught up. For example when tablets can be placed in food.
- All tail guards should be removed before moving to aviaries.

### **6.3 Stage 3 Outdoor Aviary**

- Recommended size is approximately 6 x 3.5 x 2.5 m.
- However, up to 4 related little owls may be placed in aviaries of 5 x 2 x 2.5 m.
- Ideally, adult owls will be housed individually. Up to 5 juveniles of the same species of owl can be housed in aviaries of the larger size.
- Adult eagle owls will always be housed singly.
- 2.5 m high may be the maximum height as anything taller makes catching the birds difficult.
- Three sides are close boarded and the fourth is 1" x 1 ½" welded mesh. Plastic windbreak mesh is located inside and covering the wire leaving about a 50mm gap; this helps to reduce tail damage. The roof is 1/3 solid covered to prevent rain penetration with the remainder of the roof wire covered and inside lined with soft mesh.
- A full height baffle screen is provided to give security at the covered end of the aviary.
- A safety door or corridor must be provided to prevent unnecessary escapes.

## **Substrate**

A range of substrates is acceptable including sand, gravel, soil or concrete with carefully placed *Astroturf*. These may be used alone or in a combination. Whatever is chosen it must be able to be kept relatively free of pathogens and incursions from unwanted animals.

## **Shelter**

- Primary shelter is provided in the basic aviary design but additional shelter may be provided with the following.
- Open sided wooden boxes can be placed at height in the aviary.
- Boxes or pipes for little owls may be placed on the ground ensuring they are protected from rain.

## **Temperature**

Ambient

## **Ventilation**

Aviary placed to avoid strong, cold and wet winds.

## **Humidity**

As weather.

## **Access to Water**

- A shallow water container with fresh water in it must be provided.

- The dish should be big enough to allow the bird(s) to bathe. 10cms depth of water should be adequate.

### **Diet**

As above for adult birds.

### **Environmental enrichment**

Most, if not all the following should be provided:

- Natural perches – both swinging and fixed
- Tree stumps
- Branches with foliage
- Hiding boxes
- Shelves/ledges

### **6.3.1 When to move to the next stage:**

Next stage is release.

- Experience is required to make a final assessment for release. A package of factors will be used to make the final assessment and will include:
  - ✓ good quality flight,
  - ✓ high level of fitness,
  - ✓ feather condition and
  - ✓ the ability to perch and land.
- All birds will be in good body condition.
- The vet will sign off all birds that have been under veterinary care.
- When birds have been treated for wing injuries a more stringent flight assessment may be required including distance, turning and ability to make height.

### **6.4 Flight Aviary**

Where possible, any owl that is recovering from a traumatic injury to wing, legs or body will benefit from being able to exercise in a large flight aviary. These aviaries allow the wings to be stretched fully and muscles exercised as they would be in the wild. This also allows an opportunity to examine how the bird is flying, by using CCTV camera systems to film the bird.

The RSPCA currently has two designs of aviary for flight testing birds of prey.





Figure 5: external view of bird of prey flight at East Winch



Figure 6: internal view of bird of prey flight at East Winch



Figure 7: internal view of small bird of prey aviary at Stapeley Grange



Figure 8: internal view of large bird of prey aviary at Stapeley Grange



Figure 9: Little owls in an aviary at Mallydams Wood Wildlife centre.

## 7 Diet

### 7.1 Semi-natural captive diet

- Collapsed birds should be provided with a hand fed diet of either fortified fluids or moistened food.

**Table 1: Adult diet in captivity**

Age/Species	Type of food	Amount and when to feed
Adults of all species in care are fed on the following:	If reluctant to feed, encourage self-feeding by offering one chopped day old chick (DoC) (with yolk and gizzard removed) (DoC) or 2 chopped or whole mice. Ox heart may be an alternative, with appropriate supplement.	Twice a day – morning and late afternoon. (Total of food per day = 1 DoC or 2 mice)
	If already self-feeding, offer 2 whole day old chick or 3 or more whole mice depending on size of mice.  Little owls much prefer an insect diet – provide buffalo worms or the bigger mealworms.	All self-feeding owls are fed at the end of the day, except little owls (fed twice, morning and evening) and short-eared owls (morning).
	Eagle owls – 8 whole chicks or more depending activity. Rabbit may be an alternative (check for lead shot).	

**Table 2: Chick diet in captivity**

Age/Species	Type of food	Amount and when to feed
All species	Feed soft parts of chopped DoC (minus head and legs) (with yolk and gizzard removed) (DoC) or chopped or mice (minus the head and tail).	The age and ability of the chick will determine the frequency of feeding.  Check how full the bird's stomach is before offering more food. By palpating the stomach area between the legs - a full chick's stomach will be firm and a hungry chick's will be flaccid. Training may be required.
Before their eyes open.	Assisted hand feed with chopped food in tweezers.	QID
When their eyes open.	Offer food in front of the bird with tweezers to allow them to peck. Food can be left on ground between hand feeds.	TID
When standing unassisted.	Fresh chopped DoC can be left to allow birds to pick up on their own. And hand feeding can be reduced.	TID
When self-feeding from bowl or dish.	Fresh chopped food as described above can be left in bowl, but gradually introduce whole mice or DoC.	BID

## 7.2 Supplements

Vitamin/calcium supplements are added at the manufacturers recommended proportions or as advised by a vet. Vitamin supplementation is very important for growing chicks. Mice have a better calcium/phosphorus ratio therefore mice may be a better choice for very young growing chicks.

- When feeding mice a pinch of *Avimix* can also be provided.

## 7.3 Environmental enrichment

- Adults may take the food whole.
- Some owls like to feed in a protected area e.g. a roosting shelf
- Some prefer a feeding post.
- Clear uneaten food regularly.

## 8 Preparation for release

### 8.1 When to release

- As stated in section 5.2.2, many juvenile owls can be released without spending time in care (more details below).
- Juvenile owls' release should tie in with the natural dispersal of the wild population
- All owls will be released at dusk or just after dark.
- All owls will be released in good weather conditions with, ideally, little wind and no rain. Checking the weather forecasts for a week or so prior to the planned release is always encouraged. Look for a settled period around the release day.

### 8.2 Where to release

- All immature and adults returned to place of finding
- Juveniles that have been reared will be released in suitable habitat similar to the location in which the bird(s) were found.
- Seek landowner's permission.
- Ensure access.

### 8.3 How to release

- Birds admitted as adults or immature birds are hand released at the site of finding.
- The use of nest boxes for young flightless owlets is recommended where the nest has been destroyed and/or the parents are known to be no longer present (see 5.2.2). Barn owls and tawny owls will do very well released this way as long as food provision is kept up and the box is in a safe site.

### 8.4 Information

- Basic biometric measurements are useful.

### 8.5 Marking requirements/tagging

- All birds should be BTO ringed for release.
- Ensure any temporary identification marks are removed before release.

## 9 Areas for research

- Eye problems in owls (haemorrhage/ reduced sight), do they fully recover, do they cope?
- Juvenile little owl survival and dispersal using radio telemetry.



## 10 Annexes

### 10.1 Fostering of barn owl chicks

The Barn Owl Trust (BOT) only foster in owlets when;

- The owlet is less than 6 weeks old (ideally much younger)
- The age range of the recipient brood covers the age of the foster-owlet
- The recipient brood are all a good weight and/or there are uneaten food items in the nest

Also;

- NOTE In the vast majority of cases the owlet is already used to eating yellow chicks and when it is fostered in, a supply of chicks are placed in the nest with it.
- In the past the BOT have generally only fostered-in at sites where further supplementary feeding is practical
- NOTE fostering-in owlets at six weeks old does not generally work as they are far too mobile and very likely to exit the nest immediately or very soon, may not re-enter it (and therefore highly likely to die). (see Handbook page 358-359<sup>iii</sup>)
- Most fallen owlets come into captivity at an age when they are already too old to be fostered in so fostering is only rarely used. It's more likely to be used in cases of early-stage accidental nest destruction. However, even in these cases, removal of the young to foster-in elsewhere is often not the best option.
- By six weeks of age, many owlets are also too mobile for the 'Young Brood Release Method' to be used (see the Handbook page 354-355).
- Owlets at six weeks or older should only be released following the *Principals* given in section 9.7.4 (Handbook page 359).

### 10.2 Glossary and abbreviations

♀, ♀♀	Female, females
♂, ♂♂	Male, males
<b>Adult</b>	A fully fledged completely independent bird usually capable of breeding.
<b>BID</b>	Twice-per-day.
<b>Biometrics</b>	Measurements taken to provide greater detail on the biology of birds. Data includes: plumage, size(s) and condition. (Further detail can be found in the <i>Ringers' Manual</i> <sup>iv</sup> .)
<b>BOU</b>	British Ornithological Union.
<b>Brancher</b>	A young owl (usually tawny) that has left the nest and is able to walk around the branches of its nest tree before it is able to fly. The young bird's wings start to develop primary feathers (C/f. primaries) – at about 3-4 weeks of age.
<b>BTO</b>	British Trust for Ornithology.
<b>CCF</b>	Critical Care Formula
<b>Cere</b>	The fleshy or waxy part of a bird's beak in which the nostrils are situated. Usually swollen and prominent in hawks.
<b>Chick</b>	See Nestling.
<b>Crepuscular</b>	Active at dawn and dusk.
<b>DoC</b>	Dead day old chick.
<b>Hard release</b>	A method of release where the animal is released without support feeding or provision of additional shelter.
<b>ID</b>	Identification; usually referred to individually marked birds.
<b>Immature</b>	A bird that is independent of its parents but has yet to reach breeding age or establish its own territory.
<b>Irides</b>	Plural of iris.
<b>Iris</b>	The circular coloured membrane of the eye surrounding the pupil.
<b>Juvenile</b>	A bird that is out of the nest and flying but is mostly dependent on its parents for support.
<b>Nestling</b>	A bird still living in the nest and being supported by its parents.
<b>PPE</b>	Personal Protective Equipment.

<b>Primaries</b>	The primary feathers of the wing. These are the long flight feathers towards the tip of the wing. Both hawks and falcons have ten on each wing.
<b>QID</b>	Four-times-per-day.
<b>Raptor</b>	A bird of prey. Usually referring to vultures, eagles, hawks and falcons and specifically differentiated from the owls by the addition of the word “diurnal”.
<b>Siblicide</b>	The killing of one chick by another.
<b>Soft release</b>	A method of release whereby an animal is released with support food and/or shelter prior to attaining its total freedom.
<b>TID</b>	Three-times-per-day.

## 10.3 Product details

<b>Avimix</b>	A mix of Nutrobal and vitamins A, C & E	Vetark Professional, PO Box 60, Winchester, SO23 9XN.
<b>AstroTurf</b>	Artificial turf	Georgia, USA

## 10.4 Bibliography

**Birds of the Western Palearctic, Concise Edition.** By Snow D. W. & Perrins C. M. 1998. Oxford University Press, London.

**Owls of the Northern Hemisphere** by Voous K. 1988.. Collins.

**Handbook of British Birds.** By Witherby H. F., Jourdain F. C. R., Ticehurst N. & Tucker B. W. 1938H. F. & G. Witherby Ltd.

**The Barn Owl.** By Bunn D.S., Warburton A.B. & Wilson R.D.S. 1982. T & A D Poyser.

**Owls of Europe.** By Mikkola H. 1983. T & A D Poyser.

Bennett J. A. & Routh A. D. (2000). Post release survival of hand-reared tawny owls (*Strix aluco*). *Animal Welfare*, **9**: 317 – 312.

Couper D and Bexton S. (2012) Veterinary care of wild owl casualties. *In Practice* **34**: 270 - 281

Griffiths R., Murn C. and Clubb R (2010) Survivorship of rehabilitated juvenile Tawny Owls (*Strix aluco*) released without support food, a radio tracking study. *Avian Biology Research*, **3**: 1, 1-6

Leighton, K., D. Chilvers, A. Charles & A. Kelly (2008) Post-release survival of hand-reared tawny owls (*Strix aluco*) based on radio-tracking and leg-band return data. *Animal Welfare*, **17**, 207.

Glue D, & Scott D. 1980. Breeding biology of the little owl. *British Birds*. **73**: No 4 167 - 180.

### Photographs

All photographs RSPCA.

## 10.5 References

<sup>i</sup> British Ornithological Union (BOU) website <http://www.bou.org.uk/recbrist1.htm>

<sup>ii</sup> [http://www.barnowltrust.org.uk/content\\_images/gallery/Barn\\_Owl\\_ageing\\_guide1180520171.jpg](http://www.barnowltrust.org.uk/content_images/gallery/Barn_Owl_ageing_guide1180520171.jpg)

<sup>iii</sup> Barn Owl Trust, Barn Owl Conservation Handbook, 2013

<sup>iv</sup> Redfern, CPF. & Clark, JA. 2001. Ringers' Manual. BTO, Thetford.