RSPCA Wildlife Rehabilitation Protocol: Pigeons

RSPCA

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Photo: Juvenile Collared Dove at East Winch Wildlife Centre ©RSPCA

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Protocol for the rehabilitation of the bird group
Pigeons (family Columbidae)

Contents:

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.

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2 Species information

2.1 Species or group of species covered by this protocol

There are about 300 species of pigeon in the world; thankfully only a seven are recorded on the British list as resident or visiting in a wild state. Of these, only three species are brought in for care with any regularity, the wood pigeon, collared dove and the rock dove in its various forms of racing pigeon and feral pigeon. All of the following species are all from the family **Columbidae.**

English name	*Latin name*	International name
Rock Dove / Feral Pigeon / Common Pigeon	*Columba livia*	
Stock Dove	*Columba oenas*	
Woodpigeon	*Columba palumbus*	(Common Wood Pigeon)
Collared Dove	*Streptopelia decaocto*	(Eurasian Collared Dove)
Turtle Dove	*Streptopelia turtur*	(European Turtle Dove)

Table 1: Species of Pigeon/Dove regularly occurring Britain

2.2 Identification of main species covered by this protocol

2.2.1 Adult

Feral pigeon

Usually grey all over the body and upper wings. Occasionally with lighter or darker flecks or patches; dark, almost black primaries and occasionally tail feathers; possibly with a metallic blue neck patch. Other colours may be seen or mixes of brown, white, black, - often has white patches in wing or tail. Adult feral pigeons weigh between 230 and 370gms (occasionally up to 500gms).

Figure 1: Feral pigeon

Figure 2: Owner's contact details on primary feathers of a racing pigeon

Racing pigeon

Much the same as feral pigeon but will have a ring on one or both legs and may also have an address stamped on a primary wing feather. See page 23 for details of admission and return to owner.

Wood pigeon

White and iridescent collar patches in adult quite noticeable, pink/buff breast, grey over back and wings. Black primaries with notable white flashes in wings and black towards end of tail. Adult male wood pigeons weigh between 325 & 620gms: females between 284 & 587gms. They are heaviest in October and their lightest in July.

Collared dove:

Brown/buff colours above with soft pink head and breast. Thin black half-collar on back of neck. The adult's collar has a more pronounced white border otherwise ageing is difficult in well-plumaged individuals. Black and white under tail feathers with white edges on upper surface. (May be confused with the similar Barbary dove, which is usually kept as an aviary bird). The collared dove originated in Asia but following expansion of its range over Europe has nested in Britain since 1953.

Turtle dove:
Pale grey head turning light brown to the back, pink below. Wings show black and brown turtle-shell pattern with dark primaries. Four, short black and white "slashes" to each side of the neck. Black under tail feathers with narrow white band at tip. Migrant species arriving May and departing September.

Stock dove:
Unlike all other pigeons the stock dove is dark – mid-grey all over with a pinkish breast. Shows a notable black-bordered wing with tiny wing-bars. Shows metallic-green patches either side of the neck.

2.2.2 Young

The young of all species are called squabs when at the nestling stage or squeakers when they are just fledged. They are usually unmistakable although they are often mistaken when very young for ducklings because of their broad, pliable "spatulate-shaped" beaks and squat appearance. However, their identification is relatively easy - mainly as their feet are not webbed! Their plumage mostly consists of yellow down that in the young bird is very sparse. Their skin may often be described as black or dark brown beneath the light feather covering. Most species are similar at birth but size and speed of development will vary. Aging young birds can be difficult but all species follow a similar pattern to that of the woodpigeon, described below.

Figure 3: Feral pigeon squab

Feral pigeon
- Variable coverage of down feathers but generally as above; leaves nest between 35 – 37 days but can be as short as 25 days.

Wood pigeon
- Generally scantily covered with tufts of yellowish down; mouth pink with a pale flesh coloured gape. It leaves nest at about 33 -34 days. **Note**; the skin is lead/blue with tinges of flesh colour.
- In the wood pigeon, the young are blind at hatching and their eyes open on the 3rd or 4th day, the wing quills appear on the 4th or 5th day and the feathers break from the quills around the 9th day.
- Although wood pigeon squabs leave the nest at around 36 days of age they are probably "helped to feed" by the parents until two months old. However, in most situations this will be much shorter. Careful group housing may assist in speeding up this process.
- Immatures gain the white and iridescent collar patches of the adult during the first moult – usually sometime during October to November.

Collared dove
- Usually scantily covered with tufts of yellowish down with buff tinges, leaves nest between 14 and 21 days.

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

- The young of all species (except the turtle dove) can be found at almost any time of the year but most commonly in late spring and summer. However, feral pigeon squabs are more often encountered earlier and later in the year: February – March & October - November.
- Feral pigeons will nest almost anywhere from open ledges and branches in trees and bushes to holes in buildings, cliffs and other structures.
- Wood pigeons, collared doves and turtle doves build flimsy platform nest of twigs in the branches of a tree or bush.
- Stock doves nest in tree holes with minimal twig nest material.
- As a group, the young are notably difficult to feed and invariably need to be hand fed until the bird picks up by itself which may, in wood pigeons and *in extreme cases*, take up to 60 days. Squabs covered in only yellow down are not easy to rear.

- All doves, but particularly wood pigeons, are prone to shock moult and will shed down and contour feathers at the slightest excuse but most often as a response to a predator attack. The loss of such large numbers of feathers at one time can also be the result of bad housing or handling.

2.4 Notes on environmental enrichment

- Stock doves are mainly solitary except during the breeding season.
- All other pigeons except the collared dove are social for most of the year except during the breeding season where pairs will maintain small territories and during this time the adults can be aggressive to other birds.
- Wood pigeons will form loose flocks almost any time of the year.
- The collared dove can hold its territory through the year and as a consequence is likely to be territorially aggressive.
- Young birds require a non-slip substrate underfoot to ensure security. Need twiggy nests.

Figure 4: Collared dove

3 Pre-admission treatment.

This part of the protocol is to provide information for telephone queries regarding pigeons and their rehabilitation, prior to receiving the bird(s) at a Wildlife Centre. There are two possible scenarios:

i. A member of the public is reporting a sick/injured or orphaned bird and wants further information as to what to do.
ii. 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 bird need to be admitted? Try to determine if the bird needs treatment, if it can be "treated" on site or left alone?

NOTE: in all cases ensure that the bird is really in need of care. Consult the Society's *"Leave me Alone"* campaign material.

3.1 Information should be collected on the following:

a) Species (note – members of the public often think pigeon squabs are the young of many other species, but not pigeon!)
b) Date found,
c) Extent of injuries, evidence of shock,
d) Body condition, any previous injuries,
e) Age of animal; dependent nestling (yellow plumage, non-flying) fledgling (recently left nest but still dependent) independent immature or adult,
f) Location at which the bird was found (important to ensure adults and immature birds are returned to the same place),
g) Ringed or not ringed,
h) All records of previous treatment (if from another establishment) including feed and water provision.

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

- Diet - see below, paragraph 7.2 page 17.
- Keep isolated from all other animals especially cats.
- Place in a warm dark box with a suitable lining to the base to prevent the bird slipping. A towel wrapped around the base insert of a pet carrier is ideal.
- Keep birds at room temperature.
- Avoid over-handling for fear of feather loss.
- **DO NOT USE** open wire cat baskets at any time during transport or care.

3.3 Advice related to the treatment of particular problems.

- Keep isolated from other birds if there is concern about disease transfer, e.g. trichomoniasis (canker) and paramyxovirus (Newcastle disease).
- Note that paramyxovirus is a notifiable disease. If paramyxovirus is suspected you must inform your local Animal Health Office[1].
- Ensure that all containers, food and water bowls are cleaned and disinfected after use. (A sterilising solution such as Milton may be used.)

3.4 Advice regarding the fitness of the animal for transport.

- Transport in a well-ventilated cardboard carrier. Use larger pet carriers (45 x 30 x 25 cms; 17 ½"x 11 ½" x 10 ½") for wood pigeons.
- The substrate in the box should allow bird to grip, e.g. use a towel to cover the base.
- If injured, vet should check condition prior to transfer.

[1] For more detailed information see the Defra website on paramyxovirus in pigeons at http://animalhealth.defra.gov.uk/managing-disease/notifiable-disease/paramyxovirus-of-pigeons.html

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 pigeons 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 pigeons and to keep dogs etc away from injured wildlife.

Hazards	Control measures	Level of risk
Bites and scratches	Gloves to be used when restraining	Low
Diseases/Zoonoses Psittacosis?	Gloves should be worn when handling Use of face masks where necessary Treatment areas must be cleaned thoroughly after examination	Low
Parasites	Gloves should be worn when handling	Low

Table 2: Potential hazards and measures that can be taken to reduce the risk from these hazards.

5 Decision making – to treat or not to treat

5.1 Information

A range of information is required to decide the most appropriate action for the animal in care. Information collected under 3.1 on page 7 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 as many of these conditions indicate a poor survival to release. Call the RSPCA Wildlife Centres for further advice. Note that wood pigeon survival is poor – only 16% adults and 31% of squabs were released from one RSPCA centre[i].
Euthanasia is recommended for animals showing the following.

- Compound fractures (including exposed bones).
- All pigeon & dove squabs before their eyes have opened.
- Where woodpigeons have less than 50% feathers on wings.
- Missing eye/s or limb/s.
- Old necrotic wounds (including those that are fly-blown).
- Those in extremis or those that are clearly moribund.
- Severe Trichomoniasis
- Usually juveniles with osteodystrophy (see below)
- Where feathers are of poor quality. Feather quality and the structure of the plumage should be carefully considered. If there is poor quality and structure combined with other deleterious factors then euthanasia is recommended. See section 7.3.

Birds suitable for immediate release:

- Pigeons trapped in buildings, behind netting etc – if no apparent injuries on assessment
- If no apparent injuries on presentation at centre

5.2.2 Assessment relevant to the centre and the management of the animals

- If the centre has domestic fowl, isolating the incoming pigeon or dove is strongly advised.
- Is an experienced vet, wildlife assistant or wildlife centre supervisor available to see the animal within an appropriate time-scale?
- Suitable housing/space should be available to accommodate the animal.
- Admission numbers should be managed carefully to avoid overcrowding.
- A good supply of quality food must be assured.

5.3 Treatment on admission

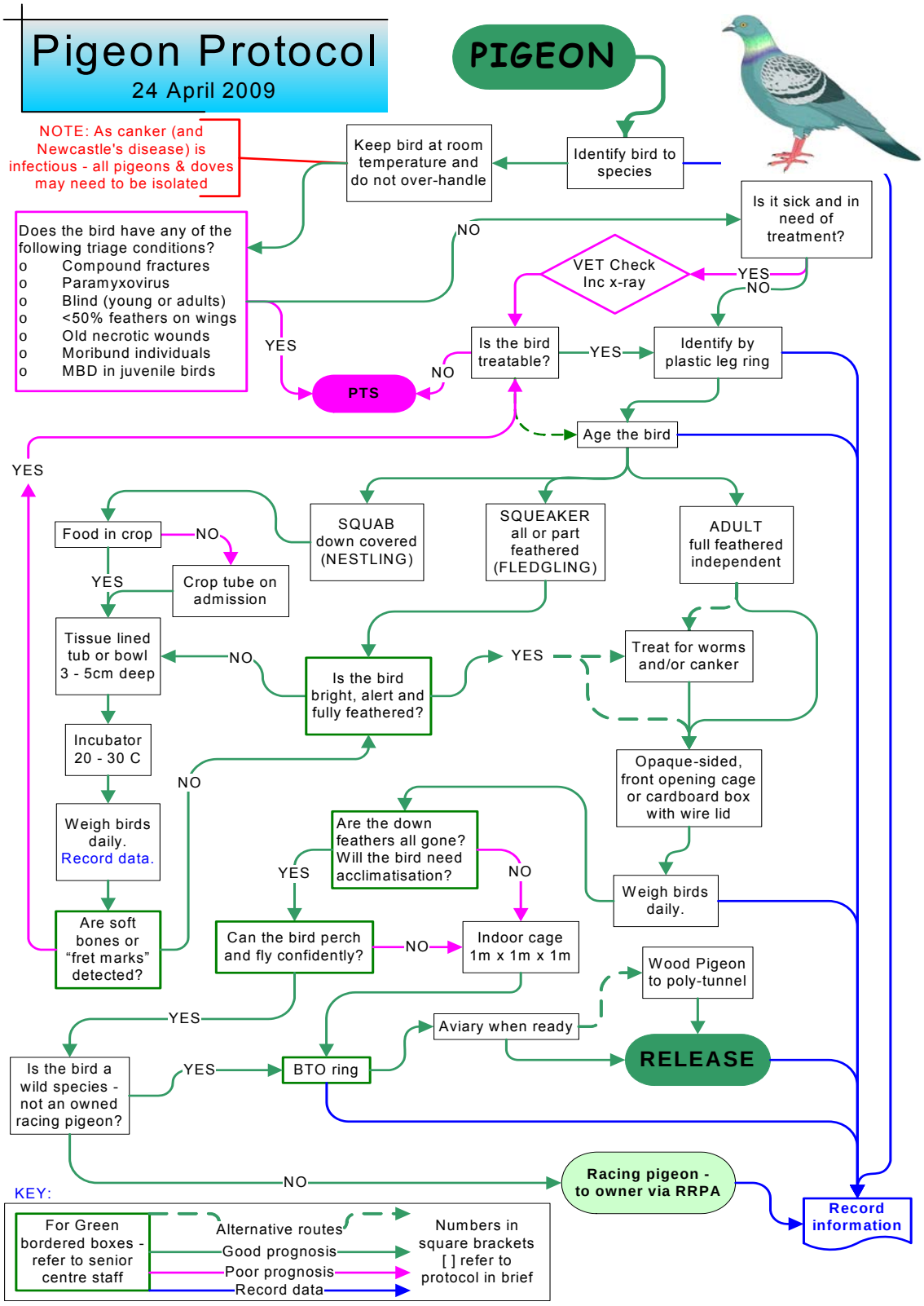
5.3.1 If any of the following are suspected undertake a full veterinary examination

- Where trichomoniasis is clearly evident on admission.
- Note that paramyxovirus is a notifiable disease. If paramyxovirus is suspected you must inform your local Animal Health Office**.** All suspected cases must be held in isolation.
- Juvenile wood pigeons and collared doves should be examined for evidence of metabolic bone disease (MBD) (may require x-ray). See below and references [ii, iii, iv & v].

5.3.2 Juveniles with suspected MBD

MBD or osteodystrophy is a disease that results in poor bone development (bendy or soft bones). It is probably caused nutrient deficiencies due to poor diet and lack of sunlight for vitamin D production. It can therefore be the result of poor husbandry but it has also been found in the young of both wood pigeons and collared doves admitted from the wild. These birds should be referred to your vet for further examination.

5.4 Flowchart



6 Accommodation

6.1 Indoor 1 (Intensive care)

Enclosure

Nestling Pigeons/Doves

- Provide nest in a box 30 x 45 x 25cms (standard pet carrier) or incubator as described below.
- A nest can be made using a shallow (3-5cm deep) flat-bottomed tub that may be padded with cotton wool or created out of a small towel rolled up into a doughnut shape. Paper towelling of approximately 2-3 layers thick is used to line the substrate and sides of the tub. Ensure any lining provides good grip. Grip to the liner is important as the bird's legs need support so they do not "splay" and cause deformities later on.
- It is typical for birds from the same brood to be placed in the same "nest". Individual nestling birds from different nests but of the same age and species may be placed in a nest together - group size can be up to a maximum of four.
- For nestlings without feathers, prepare an incubator that can be maintained at a temperature of 25 – 30^{o}C (77 - 86^{o}F) in which to place the artificial nest. Do not overcrowd incubators.
- Each bird should be individually marked with coloured rings. (Water-based paints may be an alternative – a small dab of paint on the head will aid identification).
- Sick or injured fledgling pigeons may also be treated as nestlings – as above.
- Ensure that clean disposable gloves are used for each nest of birds.
- Ensure that all equipment is cleaned, sterilised and rinsed between feeds.
- It is beneficial to the development of nestlings to have their movement restricted. This is usually achieved through the use of limited sized containers.
- Boxes can be moved outside in good weather for natural sunlight.

Substrate

- As above – towelling, kitchen tissue, whatever is used must provide grip.

Lighting requirements

- Normal room lighting and normal day length.

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Temperature

- See above - 25 – 30^{o}C (77 - 86^{o}F)

Ventilation & Humidity

- As provided by the incubator

Access to water

- All fluid will be provided within the hand fed diet.

Environmental Enrichment

Minimal, but see above.

6.1.1 When to move to next stage

Birds will be perching on edge of nest and, fully feathered, bright and alert.

Figure 5: Intensive care housing for doves

Figure 6: Juvenile collared dove

Stage 2 (Less intensive monitoring)

Enclosure	
Nestlings and fledglings: ◦ Do not place birds in a wire cat basket. ◦ Two fledgling sized birds can be held in a container of approximately 30 x 45 x 25cms similar in size to the standard RSPCA cardboard pet carrier. ◦ For groups of birds over two, larger containers must be provided. 100 cm x 60 cm ◦ If the container is solid sided and top opening, a mesh lid is used to retain the bird. ◦ If the container is front opening and allows good light penetration a towel is draped over the wire door to reduce panic. ◦ A nest such as used in the incubator is placed in the container until the bird/s no longer use it. ◦ These containers are kept indoors at workbench height in a quiet, secure environment, but can be moved outside during good weather for access to sunlight.	**Independent, fully grown birds (immatures and adults):** ◦ Do not place birds in a wire cat basket. ◦ Birds are placed individually in containers of approximately 30 x 45 x 25cms. Similar in size to the standard RSPCA cardboard pet carrier. ◦ If the container is solid sided and top opening, eg a cardboard box, a mesh lid is used to retain the bird. ◦ If front opening and allowing good light penetration a towel is draped over the wire door to reduce panic. ◦ Containers are kept indoors at work-bench height in a quiet, secure environment

Table 2: Cages for fledgling, sick or injured adult pigeons kept indoors

Substrate
- These birds must be provided with non-slip flooring – plastic mesh is suitable.
- Newspaper provides a base that is covered by towelling, kitchen tissue or fine plastic mesh cut to the size of the cage base.

Lighting
- Normal room lighting and normal day length.

Temperature
- Room temperature

Ventilation and Humidity
- As Room

Access to water
- Fresh water should be available at all times for pigeons from this stage.
- Suitable sized water bowls must be deep enough to enable the bird(s) to immerse the whole beak. This enables them to suck water up without raising their head.

Environmental Enrichment
- Clean natural wood perches should be available at all times. These should be positioned so that the birds have generous “head-room”. In positioning the perch ensure that it allows the tail feathers freedom to move both behind and below.
- Wood pigeons especially, are very adept at feeding from the ends of some of even the most flimsy twigs. Provide a wide range of perch sizes and types to keep them active.
- Sufficient perches should be provided in cages. Two is an absolute minimum.
- Neither food nor water bowls are to be placed directly beneath perches.

6.1.2 When to move to next stage:
- Down feathers will have almost entirely gone.
- Birds will be perching confidently.
- Birds will be picking up food on their own.

6.2 Stage 3 Outdoor aviary

Enclosures

- Minimum aviary dimensions = 3m x 7m x 2m high.
- **Wood pigeons and collared doves can be prone to flying at speed into the aviary sides (and occasionally the roof). This causes them further injury therefore further adaptations to aviaries may be required. Wood pigeons need a quiet area with enough space to fly in addition there is a need for all pigeons for an inner mesh liner to the roof and sides of the aviary.**

Substrate

- Concrete bases are more easily kept clean and prevent access by unwanted rodent access.
- Other substrates are used but do create management problems and can require frequent cleaning and sterilisation.
- Ensure that any substrate is kept free of parasites notably coccidia.
- The aviaries are provided with a wood-chip substrate under the perches.

Shelter

- Roofed areas are available in the aviary, as is protection from wind and rain. However, most of the aviary is open to the weather.
- No additional shelters such as nestboxes are provided.

Access to water

- Fresh drinking water should be available at all times for pigeons from this stage.
- Birds should also have access to bathing water at this point.

Environmental Enrichment

- Hanging perches should be provided in the aviaries, as should any available branch cuttings.
- Natural branches are best but must be kept clean.
- Food and water bowls must not be placed directly beneath places where birds may perch.
- "Turves" of sprouting seeds are a valuable food choice particularly for wood pigeons.
- Green vegetables are also a good enrichment these can be hung or placed high up to enable the birds to browse.
- Ivy with berries can also be provided as both a food source and an activity source.

6.2.1 When to move to release.

Birds will be assessed at least every two weeks at which time they are caught and weighed. An experienced member of staff should make decisions on whether birds are fit for release. Those assessed to the following criteria are candidates for release.

Critical points:

- Hand reared birds should not be "squeaking" for food or attention at the aviary front.
- Feather condition: look for birds that have any feathers that are broken, damaged, or lost if not part of a normal moult. Birds that have "fret" marks (fault bars) are often poor candidates for release.
- Weight: (and see Table 5 on page 20)

  Feral pigeons:

  Release at minimum weight of 260 – 280gms but take body condition into account as well.

  Wood pigeons:

  Minimum weight: ideally 400gms, but if 360gms and body condition good then can make good candidates for release.

  Collared Doves

  Minimum weight: 140 - 160gms is good 200gms is brilliant if you have some at about 140 and have stayed around that weight week after week and are in good body condition they are likely to be reasonable release candidates.
- Good flight ability.

Woodpigeon flight aviary at Stapeley Grange
Figure 7: corridor; Figure 8: - main aviary.

Figure 9: wood pigeon squab

Figure 10: wood pigeon squab being fed liquid diet (see 7.2.5)

7 Food & Feeding

7.1 Food in the wild

Adults

- Wood pigeon: Predominately leaves, seeds, berries, buds, and flowers. A short autumn period during which the birds will take gleanings. May eat the occasional small insect. Very acrobatic taking buds, berries and shoots from the ends of twigs.
- Feral pigeon: Seeds of cereals, legumes and weeds. Will take leaves and buds. In towns, takes a variety of artificial foods including seeds and animal protein. A general ground feeder. (Food consumption of captive feral pigeon approx 30gms/bird/day.)
- Collared dove: Seeds of grasses, herbs and some cereals; small fruits (especially elder berries) and green shoots and invertebrates, regular feeders at garden feeding stations. Food is taken predominately from the ground.
- Turtle dove: Feeds on the ground primarily on seeds has an affinity to seeds of fumitory (*Fumaria officianalis*). Will feed on spilled grains and small weed seeds, leaves and buds of ground plants especially the sainfoin (*Onobrychis viciifolia*). Seems to take more invertebrates (especially caterpillars) than other pigeons.
- Stock dove: Another ground feeder on weed seeds and small grains, also on invertebrates and small snails. Will take buds, shoots and leaves. May take small berries.

Young

- All British pigeons feed their young on pigeon's "milk". This is not milk such that a mammal would produce but a mush of regurgitated curd that is produced in the parent's crop. The young gain access to this by pushing their beak's into the mouth of the adult and taking the food directly. After about two weeks the young are provided with half digested food - again this is taken directly from the parent's mouth.

7.2 Captive diet

7.2.1 Adults

Basic ingredients for all species:

- Seeds: a range of seeds including proprietary pigeon mix, British finch mix and millet sprays;
- Greens: cabbages, broccoli, Swiss chard, spinach, beet leaves, and comfrey; any sprouting seeds including those of grains, seeds and beans;
- Grains: soaked mixed corn, fresh peas, cooked or well-soaked chickpeas, or lentils, etc.
- Grit *must* be available at all times and so must water. **Note**: commercially prepared pigeon grits may provide greater range of vitamins and minerals.

Wood pigeon

- Mixtures of the above but provide a higher proportion of greens to seeds/grain in the ratio of 70:30.
- Seem to prefer the larger seeds and grains.
- Give a pinch of commercial pigeon grit with seed.
- Providing a choice of foods is important.

Feral & racing pigeons

- Provide a good mixture of the above plus seeds and grains in a higher proportion to greens. 60:40.
- Give sensible portions of seeds and grains – they are selective in which seeds they will pick out of the mix and they should eat a broad selection from the whole mix.

Collared dove

- A mixture of smaller seeds and grains from the above.
- Some greens.
- Finer grit may be preferable in some cases.
- Soft (soaked) peas for "just weaned" individuals and adults.

Other Species

- Consider their natural diet and supply a mixture of the above accordingly.
- Insects (mealworms) may be required for the turtle dove

7.2.2 Support Feeding for sickly individuals

- Birds may not always eat for themselves when in captivity and in these instances it is necessary to crop-tube the birds.
- Adult birds are crop-tubed with either:
  - ✓ *Harrison's Juvenile Formula* or *Kaytee Exact* mix made up according to the manufacturer's guidelines
- OR:
  - ✓ 20ml chick crumb, 40ml warm *Zoolyte*, all mixed to a batter consistency.
- Birds should only be crop-tubed by those members of staff that are trained to do so, using an appropriate size of tube and syringe. A towel may also be required to contain birds that are particularly agitated.
- Adult birds are normally crop-tubed twice a day, once in the morning and again in the evening.
- The amount that is fed by this means depends upon the size of the bird, a rough guide is:
  - ✓ WOODPIGEONS – 20-30ml
  - ✓ RACING PIGEONS – 20ml
  - ✓ FERAL PIGEONS – 15-20ml
  - ✓ COLLARED DOVES – 10-15ml

7.2.3 Young

There are two methods used to feed squabs/nestlings:

1. Pelleted food delivered directly into the mouth.
2. Liquidised proprietary "whole food" delivered by tube into the crop.

7.2.4 PELLETED DIET

Pigeon Squab "starter" Mix. (For squabs under 1 week old)

- Ingredients:
  - ✓ 20ml chick crumbs
  - ✓ 40ml warm water
  - ✓ 30ml rearing mix.

Put all ingredients into a liquidiser and whiz to the consistency of a batter mix.

Cut the end off a 1ml syringe so it's easier to draw up food. Place syringe in squab's mouth just behind the windpipe (glottis) then syringe the mixture slowly down the bird's throat. Give 2-4mls of "starter" mix depending on the size of the bird's crop. Feed every two hours checking the crop before each feed and skip a feed if the crop still feels full.

For squabs from 1 to 2 weeks old

- ° 30ml chick crumbs
- ° 30ml rearing mix.
- ° 30ml Millet
- ° 30ml warm water

Put all ingredients together and mix to the consistency of pizza dough.

Make up sausage shaped pellets to be about the size of the bird's beak. Each pellet should be about 1gm for collared dove and 2gms for wood pigeons.

Feeds

- Assist feed small pellets of food that have been dipped in water first.
- Don't bend the beak. Open the beak at its base, not the tip.
- Four feeds per day should be sufficient - 8am, 12 midday, 4pm & 8pm.
- Check the crop before each feed, miss a feed if there is still food in the crop.
- Collared doves - 10gms of pellets/feed.
- Wood pigeons - 20 to 25gms of pellets/feed
- Feral pigeons - 20gms of pellets/feed

As routine establishes

- As each squab develops the number of feeds may be reduced but the amount of food delivered at each feed should be increased.
- Adjust amount of food given and time between each feed. This will vary according to the size of the squab and how much food it can take in one meal. *Gradually* increase the quantity given and reduce the number of feeds.

Squeaker (fledglings) Pellets
30ml millet
30ml chick crumbs
30ml rearing mix
Pinch of fine grit
30ml warm hot water

- By the time the birds are almost fully feathered they should be on 3 feeds per day – try and encourage them to take an adult mixture from a bowl.
- If fully feathered and still not feeding for itself reduce to once daily (approx. 30g for feral or wood pigeons) this should be fed late in the day.
- A wet mix of soaked corn and millet should be left with squeakers at all times.

NOTE: if beak/bones remain very soft or there are a lot of stress ('fret') marks on feathers check with a supervisor or vet whether birds are viable - if not, euthanasia should be considered.

7.2.5 LIQUID/FLUID DIET

Make up a mix of *Harrison's Juvenile Formula* according to the manufacturer's instructions

- Birds should only be crop-tubed by those members of staff that are trained to do so, using an appropriate size of tube and syringe.
- A towel may also be required to contain birds that are particularly agitated.
- The youngest squabs will require crop tubing four times a day with feeds evenly spread through the day from 8am to 8pm.
- As squabs grow the amount crop-tubed at each feed can be increased and also the number of feeds per day can be reduced to three and then to two.
- At each feed check that the crop has emptied from the previous feed. If the crop does not seem to be emptying, refer the squab to a vet or vet nurse as treatment may be required to avoid development of sour crop.
- . Start seed feeding by introducing seed into the buccal cavity using a cut off 2ml syringe. and provide a bowl of seed/grains to encourage self-feeding.
-
- Once squabs begin eating for themselves then regular tubing can stop. Eating should be monitored by daily weighing of the birds and by checking the crop for seed as required. If a squab is not eating sufficient food to maintain or gain weight it may still require crop-tubing once a day for a short time until it begins to eat more. It is important not to crop-tube too much in this instance as a full crop may remove the stimulus for the bird to eat.
- Birds eating for themselves should be given the dietary supplement *Avimix*. This can either be sprinkled onto the food or, more preferably, given directly to the birds. This can be done by dipping a large grain of seed into water and then into *Avimix* before force-feeding to the bird. This should be done when the bird is weighed and cleaned out in order to minimise handling.
- Calcium supplementshould be given during each morning feed.

Feeding

- Young squabs in incubators do not need to be provided with bowls of food and water. Once squabs are old enough to be moved into cages they can be provided with small amounts of food and water to encourage eating. When squabs begin eating for themselves food should be provided:
  FERAL PIGEONS – squeaker mix, wild bird seed
  WOODPIGEONS – wild bird seed
  COLLARED DOVES – wild bird seed, foreign finch food

STOCK DOVES – wild bird seed
DOMESTIC PIGEONS / DOVES – squeaker mix, wild bird seed, foreign finch food (beak size may determine food to be fed)

Support Feeding

- Until birds are eating for themselves they will require crop-tube feeding. Crop tubes and any other feeding equipment should be sterilised between feeds AND separate sets should be used for each "nest".
- Solid food provided as soon as birds moved to "cage"

7.2.6 Supplements

- Calcium (use recommended manufacturers' dose rates)
- *Avimix*

7.2.7 Environmental Enrichment

- Water baths
- Offer food like broccoli

Every effort should be made to mimic the animal's natural food as closely as possible. If this is not possible, a semi-natural diet should be proposed. Artificial alternatives are not recommended, but may be listed for emergency use.

7.3 Notes on feather development

7.3.1 Feather quality

Both poor quality feathers and fret marks may be caused by deficiencies in diet, stress or both. Work on birds of prey and species of passerine bird have shown that poor diet during the growth of the feathers, either while the bird was in the nest or during normal moult, can cause weak feathers and poor plumage. It may lack lustre and iridescence, the colour may be poor and there may be a general dishevelled look to the bird. The feathers may feel dry and "straw-like" and the feather edges look worn and tatty. The plumage may also contain broken and bent feathers.
Poor feather quality may mean that flight may be severely affected or impossible. The plumage may also not be waterproof and so may result in the bird being unable to maintain body temperature.

7.3.2 Fret marks

Fret marks show in feathers as lines across the vane; they may also show as ragged breaks, splits and "cuts" in the edges of the feather - see photograph below . These abnormalities are caused by inadequacies in the diet while the feather is growing. The result may be a significant flaw in the feather frequently leading to breaks across the line of weakness. These conditions are of particular concern when found in one or more of the following feather groups; primaries, secondaries or tail feathers.

7.3.3 Importance of diet

Poor feather quality is a problem that can be avoided by providing a proper diet. It is therefore important to follow a good quality dietary regime such as that outlined above. Failure to do this can result in birds having to be kept for extended periods as they would not be fit for release at the correct time, or possibly euthanasia if the damage to the feathers is too extensive.

8 Preparation for release

8.1 Training the animal for survival

A good range of environmental enrichment provided through its time in care will benefit its release to the wild and its long-term survival.

8.2 When to release

Wood pigeon, collared doves & Stock dove

- Release in morning
- No rain or strong winds
- Good weather on release day and for up to three days after.

	♂♂	♀♀
Common Pigeon	230 – 370	230 – 370
Stock Dove	290 - 350	250 – 320
Woodpigeon	325 – 614	284 - 587
Collared Dove	170 – 240	170 - 230
Turtle Dove	100 - 180	100 - 180

Table 4: Weights of wild birds

- Birds tend to be released in small groups at suitable release sites determined by site checks carried out by staff members.

8.3 Where to release

- Adult feral pigeons are released where they were found.
- Hand reared feral pigeons are released in a suitable location away from the rearing site.
- Adult wood pigeons and collared doves are released back where they were found.
- Immature wood pigeons and collared doves are released on site where suitable.
- Ideally, collared doves should be released within a group of existing (non-territorial) collared doves.

8.4 How to release

Hard release:

- Birds tend to be released in small groups at suitable release sites determined by site checks carried out by staff members.

Racing pigeon returns

- See the information in the appendix on Racing pigeon protocol and returns to owner on page 22.

8.5 Information

- Weight and basic biometrics may provide useful information.

8.6 Tagging

- Prior to releasing any pigeons or doves, check with a licensed BTO ringer or a member of the RSPCA ringing group as to whether the birds are to be BTO ringed prior to release. Feral pigeons cannot be ringed due to BTO guidelines.

9 Areas for research

- Reasons for admission must be looked for on card data to identify underlying causes. Trichomoniasis and other problems are highlighted.
- Environmental enrichment including the use of greens.
- CURRENT & ON-GOING:
  - ➔ Post release survival.
  - ➔ Continue BTO ringing.
  - ➔ Radio tracking of collared doves.

10 Annexes

10.1 Racing pigeon protocol and returns to owner

Racing pigeons are commonly admitted birds and should be given further consideration, as these are owned birds. The following details what should be done with any racing pigeons that are admitted.

Admission

- All admission details should be recorded In addition to the standard information that is recorded, the ring number(s) should be written in full as an additional identifier.
- Triage the racing pigeon as you would with any animal admission. Racing pigeons can be wormed on admission according to the worming protocol recommended and produced by your vet

Care and Accommodation

- Racing pigeons can be cared for and housed in the same manner as feral pigeons. Please refer to details in this document.

Returning to Owner

- As an owned animal the owner should take the bird back. Most pigeon clubs will insist that the owner is responsible for arranging their bird(s) to be collected and returned to their home loft.
- The owner of the racing pigeon is not contacted until the bird has been signed off by the centre's vet or experienced member of staff. This is because the pigeons are often collected by a courier service and must be fit enough to survive up to 24 hours in the travel box.
- The method of contacting the owner depends upon the organisation to which the racing pigeon is registered, as indicated by the leg ring.
- Any racing pigeon with a GB ring should be reported to the Royal Pigeon Racing Association (RPRA 01452 713529) who will in turn contact the owner to arrange collection. A sample fax is available on page 18.
- For any racing pigeons registered to another organisation, all of which are included in the list on page 24, contact the relevant organisation and they will either contact the owner or provide the owners details.
- In some cases the owner's telephone number is stamped on the pigeon's wing allowing them to be contacted directly.

Exceptions to this protocol

- In some instances a racing pigeon cannot be returned to the owner:
  - ➔ Racing pigeons that are dead on arrival or PTS on admission – pigeons can be reported to the relevant organisation that will notify the owners.
  - ➔ Pigeons may often have a contact telephone number either on a leg ring or stamped on the wing allowing the owner to be contacted directly to advise on what to do with the bird. If the owner cannot be contacted in this way or through the appropriate organisation then the pigeon should be euthanased.
  - ➔ Deceased owners – it is possible that once a racing pigeon has been signed off and the relevant organisation contacted we may be notified that the owner has died. In this situation it may be possible to rehome the pigeon.

- Racing pigeons that will not fully recover but are not euthanased:
  - ➔ In the case of older birds (age indicated on leg ring) that will be unable to compete again, the owner may wish to have the pigeon as a breeding bird.

FAX HEADER MESSAGE

FROM: **RSPCA Centre**
Telephone No:

TO: **ROYAL RACING PIGEON ASSOCIATION**
FAX NO: **01452 857119**

DATE: ----------

MESSAGE:

I would be grateful if you could inform the owners of the following stray racing pigeon(s) that their birds are currently held at the RSPCA Centre in …… and would they please arrange for them to be collected as soon as possible.

Pigeon Ring No: ----------
Pigeon Ring No: ----------

Our full address is:

Thank you.

The Royal Pigeon Racing Association records only cover rings with a **GB** prefix and not the rings of other unions. The list below includes the contact details for other racing pigeon organisations.

Ring Prefix	Organisation	Contact
AERC	All England Roller Club	01642 218632
BRC	Bentley Roller Club	01902 634695
EERC	East of England Roller Club	01473 624526
FPA	Fancy Pigeon Association	01473 624526
IHU	Irish Homing Union	Kenmcconaghie38@btinternet.com
MDRC	Middlesborough & District Roller Club	01642 862412
MRPC	Midland Roller Pigeon Club	0121 5509415
NEHU	North of England Homing Union	0191 2625440
NFTTS	Norwich Flying Tippler & Roller Society	01603 432209
NPA	National Pigeon Association	0208 3006782
NRC	Northern Roller Club	0191 4261653
NRTT	Nottingham Roller Tippler & Tumbler Club	0115 8460527
NTU	National Tippler Union	0117 9647275
NTUW	National Tippler Union of Wales	01792 424393
NWHU	North West Homing Union	01257 421271
NWRC	North West Roller Club	01942 236063
SRRC	South Riding Roller Club	01226 700433
SU	Scottish Homing Union	01698 286983
WEFT/BSW	West of England Flying Tumbler Society	01237 477096
WHFC	Worcester Hi-Fli Club	01905 355041
WHU	Welsh Homing Union	01443 441010
WRPS	Warley Rolling Pigeon Society	01922 479581
WTC	Wolverhampton Tumbler Club	01902 734104
YPRS	Yorkshire Performing Roller Society	01904 427616
	OVERSEAS ORGANISATIONS	
BELG	Royale Federation Colombophile Belge	national@rfcb.be
FRANCE	Federation Colombophile Francaise	fcf5@wannadoo.fr
DV	Verband Deutscher Brieftaubenzuchtere V.	m.nowaczyk@brieftaubenverband.de
NL/HOLL	Bureau N.P.O.	bureau@npo.nl
PORT	Federacao Portuguesa De Colombofilia	geral@fpcolombofilia.pt
ESP	Real Federacion Colombofilia Espanola	0034 91 4487204 (FAX)
MALTA	Federation of Pigeon Racing Clubs of Malta	Railway Ave, Hamrum, HMR08, Malta
AU	American Racing Pigeon Union	www.pigeon.org
IF	International Federation of American Homing Pigeon Fanciers	www.americanhoming.org

Table 5 Racing pigeon organisations

10.2 Glossary

♀; ♀♀	Female; females
♂; ♂♂	Male; males
Adult	A bird in full adult plumage. See descriptions, page 4 Section 1.2
Biometrics	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 *Ringers' Manual*[vi].
BTO	British Trust for Ornithology
Defra	The Department of the Environment, Food and Rural Affairs.
Fault bar	Line of weakness horizontally across a feather caused by poor diet, stress or illness while the feather was growing.
Fledgling	In this protocol; a young bird that is recently out of the nest but still mainly reliant on its parents for food and (to a certain extent) protection. It is feathered and can fly albeit weakly at first.
Immature	A young bird that is independent of its parents but that has not developed its full adult plumage.
MBD	Metabolic bone disease or osteodystrophy. A condition caused by the lack of vitamin D_3 either through an inadequate diet or lack of sunlight.
Nestling	In this protocol; a young bird that is still in the nest (or should be) and which may not have all its feathers. It will be unable to fly. It is totally dependent on its parents for food.
Paramyxovirus	An infection that is notifiable to Defra. PMV-1 is a viral infection that affects the respiratory tract and the nervous system.
PTS	Put to Sleep (humane destruction, euthanasia)
Sexual dimorphism	The difference in appearance between male and female. Usually noted in plumage colour, shape or size.
Squab	Usually refers to birds that are still in the nest. See Nestling.
Squeaker	Usually refers to birds that have recently fledged. See Fledgling.
Trichomoniasis	A soft "cheesey-like" growth usually seen in the mouth. Most often in collared doves. Also known as canker or frounce. Caused by the parasite *Trichomonas gallinae.*

10.3 Products named in the text

Avimix	A vitamin supplement prepared specifically for birds. *Vetark Professional, PO Box 60, Winchester, SO23 9XN.*
Calcium lectate	
Complan	A whole-food dietary supplement – widely available. *Complanfoods Ltd., Imperial House, 15-19 Kingsway, London WC2B 6UN.*
Harrison's (Juvenile hand-feeding formula)	A formulated bird food, available in powdered form. *Dr. Brian & Sheila Stockdale, Unit 7 Windmill Road, Loughborough, Leicestershire, LE11 1RA.* www.harrisonsbirdfoods.com
Milton	A sterilising solution available through most general chemists eg, *Boots*
Zolcal D	A calcium and vitamin D3 supplement. *Vetark Professional, PO Box 60, Winchester, SO23 9XN*
Zoolyte	A water-soluble oral rehydration and probiotic supplement. *International Zoo Veterinary Group, Keighly, N Yorkshire, UK*

10.4 Bibliography

BSAVA Manual of Raptors, Pigeons and Passerine Birds. Edited by John Chitty and Michael Lierz. Published by BSAVA 2008.
BSAVA Manual of Wildlife Casualties Edited by E. Mullineaux, D. Best & J.E. Cooper. BSAVA 2001.
Manual of Raptors, Pigeons and Waterfowl. Edited by Peter Benyon. BSAVA. 1996.
Pigeons and Doves of the World. by Derek Goodwin. Cornell University Press. 1983.
The Birds of the Western Palearctic. Edited by D M Snow & C M Perrins. Oxford University Press. 1998.
The Migration Atlas - M*ovements of the Birds of Britain and Ireland.* Edited by BTO, C Wernham, M Toms, J Marchant, J Clark, G Siriwardena and S Baillie. T & AD Poyser Ltd (A & C Black).
The Wood Pigeon. by R K Murton published by Collins New Naturalist Series. 1965.

Additional papers:
Kelly, A. (2008) Reasons for admission and outcomes of treatment for racing pigeons admitted to RSPCA Stapeley Grange Wildlife Rehabilitation Centre. *British Homing World* Pp.24-25.

10.5 References

[i] Kelly, A., Halstead, C., Hunter, D., Leighton, K., Grogan, A. and Harris, M. (2011). Factors affecting the likelihood of release of injured and orphaned woodpigeons (*Columba palumbus*). *Animal Welfare*, **20**, 523-534.

[ii] Stanford, M.D. (2005) Calcium metabolism in grey parrots: the effects of husbandry. FRCVS thesis *in press*.

[iii] Harcourt-Brown, N.H. (2004) Development of the skeleton and feathers of dusky parrots (*Pionus fuscus*) in relationship to their behaviour. The Veterinary Record **154**: 42-48.

[iv] Kostka, V., Krautwald, M.E., Tellhelm, B. & Schildger, B. (1988) A contribution to radiological examination of bone alterations in psittacines, birds of prey and pigeons. *Proceedings of the Association of Avian Veterinarians. Lake Worth, USA,* pp 37-59.

[v] Edwards, H.M. Jr. (2003) Effects of UVB irradiation of very young chickens on growth and bone development. British Journal of Nutrition **90** (1): 151-160.

[vi] Redfern, CPF. & Clark, JA. 2001. Ringers' Manual. BTO, Thetford.