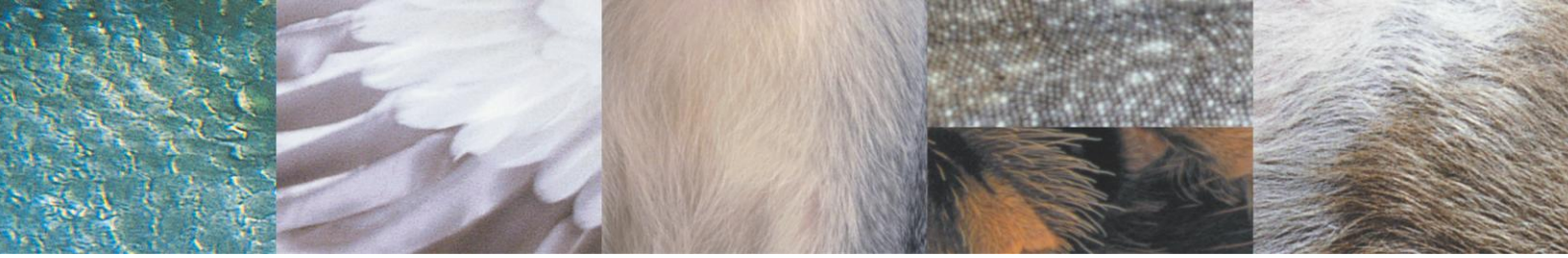

Supplementary resources for members of local ethical review processes

Ducks and Geese: Good practice for housing and care

Research Animals Department, RSPCA
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Before using these guidance notes, please read the introductory sheet that accompanies this series: *Supplementary resources for lay members: An introduction*.

Natural history

Ducks and geese are primarily adapted to locomotion and feeding in water and have varying abilities to walk and feed on land. For example, geese are exclusively herbivorous and are adapted more for land-based feeding and grazing. Ducks may be herbivorous, carnivorous or omnivorous and are adapted for feeding on land and/or water to different degrees. Dabbling ducks such as the mallard *Anas platyrhynchos* feed mainly in shallow water and walk well on land, whereas sea ducks are adapted for powerful swimming and diving and leave the water less often. Water is also very important for species-specific behaviours such as bathing and preening.

Many species of waterfowl are highly social and live in large flocks. Most are monogamous in that a pair remains together for at least one breeding season and, in the case of some geese, for life. Male ducks generally leave when incubation begins but male geese usually help to rear goslings in a family group. Some species of ducks and geese migrate between summer and winter habitats and become physiologically prepared for long flights, building up flight muscles and laying down fat reserves, even in captivity.

Although ducks and geese have been domesticated for at least four thousand years, all breeds retain most of their 'wild type' behaviour and are generally more nervous and easily upset than other domestic fowl. It is especially important to minimise disturbance when they are moulting, as all geese and some ducks shed all of their flight feathers at once. It is vital to research the habitat and natural behaviour of each species, including the "wild-type" precursors of domesticated species or strains, when designing or reviewing protocols for waterfowl housing and care.

What ducks and geese need

The following list of requirements is based on the ecology and behaviour of wild ducks and geese, and on animal welfare science that has evaluated birds' preferences and motivation for resources. More information on waterfowl welfare, housing and care can be found in the references listed at the end of this document.

- **Social housing**

Waterfowl are highly social and form strong attachments with one another. Individuals should not be left alone if this can be avoided, and it may be necessary for birds undergoing husbandry or scientific procedures to have a companion they can see. This means that the minimum group size for most species is 4, as this allows for two birds to be removed and two to be left behind. Larger groups with equal numbers of males and females are preferable, but note that some species should be housed in single pairs only, for example the shelduck, *Tadorna tadorna*.

Many species become especially territorial during the breeding season, so it may be necessary to reduce group sizes and ensure that there is enough space for birds to escape from one another. Lone males of many dabbling duck species will attempt to forcibly mate with females, which can result in distress, injury or death for the female and this requires intervention. Behavioural changes during the breeding season need to be researched for each species and planned for in good time.

- **Solid flooring**

Ducks and geese should be housed on solid floors made of a suitable material such as plastic artificial turf, rubber matting or deep pile rubber car mats. Rough flooring can cause foot and feather abrasions. Litter materials should be provided, and should be dry, friable and deep enough to absorb and dilute faeces. If grid areas are essential for scientific purposes, the grid should be soft plastic mesh rather than wire and at least a third of the floor should be solid. Drinkers and ponds can be located over grid areas with drains beneath to minimise flooding.

- **Water for bathing and/or swimming**

All waterfowl should have some sort of pond with stones and grit on the bottom, to encourage natural behaviour and good feather maintenance as well as reductions in abnormal behaviour such as headshaking and stereotypic preening. Birds should at least be able to immerse their heads and shake water over their bodies - even a plastic paddling pool or sandpit filled with water is better than nothing. Birds must be able to enter and leave the water easily (especially juvenile birds - ensure that ducklings and goslings do not get chilled) and ponds will need to be drained and cleaned periodically. Surrounding the pond with plastic slats and using bio-filters when water is recirculated will help with hygiene. If proper ponds cannot be provided, Pekin ducks prefer wide troughs to bell drinkers and like nipple drinkers least of all. This may apply to other breeds. See reference [1] for further guidance, including how to introduce juvenile birds to water.

- **Environmental enrichment**

A stimulating environment is essential to encourage waterfowl to forage, play and use all of the space that is available to them. Ideas for enrichment include: natural plant cover or artificial refuges such as boxes and straw bales for grazing geese and freshwater ducks; items for pulling (securely fixed to pen walls) such as lengths of metal or plastic chain; items at the bottom of ponds that can be dived or dabbled for such as stones, shells, grit, bricks, vacuum cleaner fan belts and new, clean rubber bungs. Everything should be clean, non-toxic and too large to swallow or safe when or if they are swallowed.

- **Opportunities to forage**

Waterfowl in the wild often spend more time feeding than doing anything else, so it is very important to encourage appropriate foraging behaviour. This can be done by scattering food instead of providing it all in feeders, feeding diving and dabbling species some or all of the diet in the pond (with regular weighing to ensure that all the birds are eating enough), and giving grazing species access to grass, turf, greens and grains or, if higher levels of hygiene are required, hydroponically grown plants.

- **Nest sites and materials (where appropriate)**

It is essential to make sure that there are sufficient nest sites and materials to prevent competition and aggression. There are many books about waterfowl breeding that can be used to research the behaviour and requirements of each species.

- **Adequate feeder length per adult bird**

Feeder length of 15 cm per bird will allow all birds simultaneous access to the food inmost species. Waterfowl also need sufficient feeder width and length to be able to shovel food into their bills without hitting the sides.

- **Plenty of pen space**

It is essential that pens will provide adequate room for all of the above resources and for a range of behaviours, including foraging, walking, running and wing flapping. This can occupy a considerable amount of space. Ideally, waterfowl should have large enclosures with outside access wherever possible. Geese need a greater proportion of dry land for walking and grazing than ducks, whereas swimming exercise is more important for ducks (especially diving ducks) than geese.

Potential husbandry related welfare problems and how to resolve them

Injuries caused by collisions with the enclosure when flying. The risk of injury depends on the size of the birds, the size of their enclosure and how they react when attempts are made to catch them. It may be necessary to prevent flight by clipping the birds' wing feathers, but birds should never routinely be pinioned without considering all alternatives. Pinioning is a permanent mutilation that may well cause acute and chronic pain and distress [see reference 1 for discussion on problems relating to flight].

Aspergillosis is a potentially fatal infection caused by the fungus *Aspergillus fumigatus*. All waterfowl, especially sea ducks, are particularly at risk from aspergillosis, which is spread by fungal spores. The risk should be reduced by minimising contact with mouldy feed and bedding and minimising stress caused by housing or procedures, not by housing birds in barren conditions.

Eye and nostril problems, cloacal infection. Waterfowl must be able to immerse the head in water to prevent feed and dust clogging the eyes and nostrils. Regular access to water helps to prevent infection of the cloaca.

Feather pecking. This may be prevented or alleviated by providing an appropriate and stimulating environment, especially with respect to foraging, feeding and social behaviour. Outdoor runs are recommended wherever possible.

Abnormal behaviour such as **stereotypies.** Providing a good quality and quantity of space and appropriate social groups will reduce the risk of abnormal behaviours. Good access to water is especially important.

Ducks and Geese housing and care: ERP aide-memoire

- ❖ **Social housing** ❑
- ❖ **Adequate pen space to permit a range of activities and the provision of environmental enrichment** ❑
- ❖ **Solid flooring made from a suitable, comfortable material; dry litter deep enough to absorb faeces** ❑
- ❖ **Opportunities to forage** ❑
- ❖ **Species-specific environmental enrichment which allows birds to explore and use all available space** ❑
- ❖ **Water for bathing and/or swimming in some sort of 'pond' containing stones and grit** ❑
- ❖ **Nest sites and nesting materials for breeding birds** ❑
- ❖ **Adequate feeder width and length to allow all birds simultaneous access to feed** ❑

Notes

Recommended references

1. Hawkins P, Morton DB, Cameron D, Cuthill I, Francis R, Freir R, Gosler A, Healy S, Hudson A, Inglis I, Jones A, Kirkwood J, Lawton M, Monaghan P, Sherwin C and Townsend P (2001) Laboratory birds: Refinements in husbandry and procedures. *Laboratory Animals* 35 (Suppl. 1) Download at http://tinyurl.com/3aljtmd

2. Henry, RR (1999) Ducks. Chapter 12 in *Management and Welfare of Farm Animals: The UFAW Farm Handbook*. Amersham: Halstan & Co. Ltd, p257-268.
NOTE: a new edition of the UFAW Farm Handbook is in preparation.

3. Ogilvie M, Pearson B (1994) *Wildfowl: A Hamlyn Bird Behaviour Guide.* ISBN 0 600 57973 5.

4. FELASA (2007) *Euroguide on the Accommodation and Care of Animals Used for Experimental and Other Scientific Purposes: Based on the Revised Appendix A of the European Convention ETS123.* London: FELASA. Available for purchase at www.rsmpress.co.uk/bkfelasa.htm

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