American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals:
Small Canids

AZA Mammal Standards Task Force, 1997
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INTRODUCTION

The family Canidae consists of approximately 13 genera and 35 species. Being broadly adapted carnivores, canids are found in a wide array of environments that range from arctic to tropical, and in social groups that range from solitary to gregarious. For purposes of this document, small canids are defined as those species belonging to the following genera:


Although the genera listed above have many characteristics in common, it is difficult to develop husbandry standards that meet all their needs. The authors have made every attempt to include exceptions to these standards but it is suggested that their needs be addressed on a species-by-species basis.

HUSBANDRY

The environmental requirements listed in this section reflect minimum standards for husbandry of small canids. Requirements unique to certain groups are listed separately.

Temperature: Small canids are widely distributed and while environmental temperatures for a few species range from extremes of desert heat (fennec) to arctic winters (arctic fox), most species are found in temperate climates. Overall canids can withstand a good deal of climatic fluctuation although temperature extremes should be avoided. Enclosures should provide shelter from heat, cold and precipitation. Where necessary, heated concrete pads may be used to provide supplemental heat to outside enclosures.
**Lighting:** If unmolested by humans, canids may be active both day and night but most species are primarily nocturnal or crepuscular in their habits. When housed indoors, a day/night cycle of 12 hours of light and 12 hours of darkness, or one that matches natural environmental conditions, is advised. Canids with no access to natural sunlight should receive daily supplements of vitamins A and D. Fluorescent lighting fixtures using full spectrum light bulbs are also recommended for indoor enclosures.

**Ventilation:** For indoor enclosures, an air exchange of 5 - 8 per hour is recommended. Relative humidity requirements are variable but a range of 30 - 70 % is usually acceptable.

**Water:** Fresh water should be available at all times, and containers should be cleaned and disinfected daily. Containers should be located to prevent rapid freezing or heating.

**Sanitation:** Hard-surface flooring and shelves should be cleaned and disinfected daily, and “furniture” should be cleaned daily, as needed or on a regular basis. Food containers, if used, should be cleaned and disinfected daily. Dirt flooring and outdoor enclosures should be raked and spot-cleaned daily.

**Exhibit size:** The following exhibit dimensions are minimum and every effort should be made to allow for larger enclosures. One or two animals 6.5 ft. x 6.5 ft. x 5 ft. tall (2 m. x 2 m. x 1.5 m.) Three animals 10 ft x 10 ft. x 5 ft tall (3 m. x 3 m. x 1.5 m.) Family group (pair + up to 5 offspring) 13 ft. x 13 ft. x 5 ft. tall (4 m. x 4 m. x 2 m.) Small canids are inquisitive and constantly explore their environment. An enclosure that provides a variety of natural or man made objects (logs, tree limbs, stumps or vertical structures for climbing and scent marking) will improve their quality of life. Grass, packed earth or similar substrate is preferred, especially for those species that like to dig. Physical and visual barriers allowing temporary escape from conspecifics and humans are highly desirable.

**Diet:** The majority of small canids are omnivorous and feed on small mammals, birds and their eggs, insects, fruits and grains, frogs, lizards, and carrion. Small canids adapt readily to commercially prepared carnivore diets, particularly those made for canids. Medium-sized bones or rawhide “bones” should be offered periodically to prevent tooth decay and gingivitis. Small canids should be fed once or twice daily; fast days are not recommended.
Social: Most adults may be kept by themselves, in pairs or occasionally in trios (one male and two females). If young are present, it is generally recommended that juveniles be removed prior to the birth of subsequent offspring.

Veterinary care: Services of a veterinarian experienced with canids should be available for routine care and emergencies. Fecal exams should be performed at least semiannually. Heartworm preventative should be given in all heartworm endemic areas.

Annual vaccinations against rabies, parvovirus and canine distemper should be given but may be dangerous in non-domestic species. Brands that have proven safe and effective include Fromm-D (Solvay Animal Health) for canine distemper, Imrab (Pittman-Moore) for rabies and KF-11 (Fort Dodge) for parvovirus.

SPECIAL REQUIREMENTS

Small canids are very diverse and some species require variation in their diet, housing and/or social grouping. The following specializations should be taken into account when developing proper husbandry.

1. Diet variations.
   Gray and crab-eating foxes - Gray and crab-eating foxes are reported to be more omnivorous than most other species. In captivity, they fare better when fed diets that contain a high proportion of cereals and fruits (Ewer, 1973).
   Raccoon dog - In the wild, this species’ diet is centered around aquatic species, e.g. fish, frogs, water beetles and mollusks in addition to rabbits and rodents (Ewer, 1973).
   Arctic and Colpeo fox, *Dusicyon culpaeus*, and bush dog - These three species are reportedly more carnivorous than most small canids (Nowak and Paradiso, 1983; Langguth, 1975).

2. Housing variations
   The habits of the following species differ somewhat from the norm. While the furnishings listed below are not absolutely required for survival, they are recommended for improving the quality of life.
   Gray fox - Gray foxes are the most arboreal canid and thrive when provided with vertical climbing structures. There is also evidence that Corsac foxes, *Vupes corsac*, and Bengal foxes, *V. bengalensis*, enjoy climbing (Nowak and Paradiso, 1983).
   Fennec and bat-eared foxes - Fennec and bat-eared foxes are excellent diggers; care must be taken to ensure that enclosures are escape-proof.
Bush dog and raccoon dog - Bush dogs enjoy swimming, as evidenced by their partially webbed toes. An enclosure containing a pool or stream is desirable. The aquatic-based diet of raccoon dogs indicates that this species may also enjoy water.

3. Social considerations
Bush dogs, fennec, and pallid, corsac and sand foxes are reported to be more gregarious than most other small canids (Nowak and Paradiso, 1983; Porton et al, 1987). Fennecs can be housed in family groups. In addition, fennecs may produce a second litter in 2 or 3 months if the first is lost. Bush dogs may also be housed in family groups; in the wild, they are thought to live in groups in the wild. Although in the wild juveniles may remain with the family and perhaps assist in care of subsequent litters, caution should be exercised in captive situations when space is limited.

ADDITIONAL REFERENCES

In: VIRUS INFECTIONS OF CARNIVORES, M. Appel, ed. Elseivier Science Publisher B.V. Amsterdam.
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A seasonality of bush dog reproduction and the influence of social factors on the estrus Cycle. J. MAMMAL. 68:867-871.