

American Zoo and Aquarium Association
Minimum Husbandry Guidelines for Mammals: Elephants

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INTRODUCTION

African, *Loxodonta africana*, and Asian, *Elephas maximus*, elephants are very similar in appearance and share the same housing requirements. The following standards are minimal and every effort should be made to exceed them.

Elephants are highly social animals and develop complex relationships among themselves. Under normal circumstances, females and young males should not be housed by themselves because they need contact with other elephants in order to develop proper social behaviors. Males (6 years and above) may be housed alone.

Elephants are unique in the captive environment because of their long history (over 4,000 years) of human interaction. Elephants are large animals capable of weighing in excess of 12,000 lb. (5440 kg.) and standing over 10 feet tall (3.1 m) at the shoulder. Adult males of both species must be housed in specialized facilities capable of dealing safely with their aggressive behaviors.

GENERAL REQUIREMENTS

Enclosure and holding space: Indoor space should provide adequate room for animals to move about and lay down without restriction. A minimum of 400 sq. ft. (37.2 sq. m.) is required for a single animal. Because of their greater size or space requirements, bulls or cows with calves should have at least 600 sq. ft. (55.8 sq. m.). Mature animals can reach 20 feet (6.1 m.) vertically and ceiling heights must exceed this distance. Retaining barriers such as walls, moats, and railing should also be constructed with these abilities in mind. Generally 10 - 12 feet (3.1 - 3.7 m.) should be allowed horizontally between barriers and unprotected areas.

Door and gate design is extremely important. Both should be engineered to withstand extreme force. Steel-framed doors filled with at least 6 inches (15 cm.) of concrete have been used successfully with elephants. Because of the door's weight, mechanical opening devices such as hydraulic or electrically powered drives are usually used. Doors made of concrete are solid and provide less surface for corrosion from urine and water; metal doors are often lighter in weight and have also been used successfully

An outside yard should possess at least 1,800 square feet (167.4 sq. m.) for a single animal. This area should be increased by 50 % for each additional animal. Yard surfaces should be made of natural substrates that provide good drainage, and have a dry area for feeding that is easy to clean. Facilities should provide a water feature that allows the elephants to cool and bathe themselves, and should be large enough for the

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animal to lay on its side. It may vary in size from a shallow wallow to one large enough for the animal to totally submerge itself. Pools should be cleaned as necessary.

Elephants protect their skin from the sun and biting insects by dusting it with available substrates. When kept outdoors, material such as sand or dry soil should be available whenever possible. Rocks, tree stumps, or large sturdy objects should be provided for rubbing and scratching. A shade structure should be available as appropriate.

Barriers: Consideration must be given to moat design because dry moats may pose a threats to elephants. Moats that are deep, narrow-sided, and hard-bottomed may seriously injure an animal that falls in. Consideration to animal extraction should be given to any moat that is more than 3-ft. (1 m.) deep or are less than 10 feet (3 m.) wide and/or hard-bottomed.

Barriers can be made from a wide variety of materials as long as they are able to withstand the animals' strength. Elephants are surprisingly agile and have been known to climb over barriers 7 feet (2.1 m.) high. Elephants can also climb over horizontal rails placed in a ladder-like fashion.

Floor surfaces: Floor surfaces such as a light broom finish should be smooth but not enough as to be slippery when wet; excessively rough ones may cause excessive wear to foot pads. Floors should also drain and dry quickly in order to prevent chronic dampness. Weather permitting, elephants should be allowed to be outside for several hours each day in order to get off these hard surfaces.

Temperature: During daylight hours, elephants kept outdoors can tolerate moderate temperature extremes. Provisions should be made to protect animals from adverse weather: intense sunlight, wind, chilling rain, sleet, etc. With adequate provisions, healthy animals may be readily acclimated to temperatures down to 40 degrees F (5 C) but animals should be frequently monitored at temperatures below 50 degrees F (10 C).

Indoor facilities should be capable of maintaining 65 degrees F (16 C) during cold weather. For accommodating sick or debilitated animals, one room of the indoor facility should be capable of maintaining 70 degrees F (21 C) and be free of drafts.

Lighting: A normal light cycle is adequate for elephants. Indoor areas should be well-illuminated during daylight hours, followed by period of darkness. Fluorescent lighting provides a sufficient spectrum of illumination; skylights allowing natural light to enter unobstructed are also satisfactory. Ample interior lighting is especially important for staff safety in those facilities that manage elephants in an unconfined (free contact) environment.

Sanitation: Interior barn surfaces should be impervious to water, and cleaned thoroughly and disinfected on a daily basis. Water containers should also be cleaned and disinfected daily. Frequent manure removal is necessary for the maintenance of both sanitary and esthetic conditions, and particularly during periods when the animals

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are kept indoors for extended periods. Outside yards should be cleaned as necessary to avoid unsanitary or unsafe conditions.

Food and water: Elephants should be provided ample, potable water on a daily basis. Diets, including hay, grain, produce, and vitamin and mineral supplements should be developed and monitored. Browse can be used as a fiber supplement and to provide enrichment activities for the animals.

Veterinary care: Services of a veterinarian with experience in large mammal medicine should be available. Fecal examinations should be performed at least twice a year. Teeth, toe nails, foot pads and cuticles, skin, and tusks should be checked on a regular basis, and cared for as needed. No vaccinations are recommended for elephants. Because their skin is sensitive to dry conditions, animals should be hosed, or preferably washed, at least once a week.

SPECIAL REQUIREMENTS

Restraint: Because of these species' large size, strength, and specialized needs, facilities should be prepared to meet all their husbandry requirements. It is strongly recommended that a management plan be developed which includes keeper safety, elephant commands, emergency protocols, and staff training. Owners should also review the AZA Elephant Management Guidelines for better understanding of the sound husbandry needs of these large animals. Depending on the behavior of individual animals, female and young elephants may be safely managed under conditions of free contact, or by restraining animals with chains, chemical sedation or immobilization, mechanical restraint devices, or combinations thereof. Because male elephants experience periods of musth and often become aggressive, as do some females, owners should be prepared to manage them in a protected or confined contact situation and possess a mechanical restraining devices prior to animal acquisition.

Facilities using chains for nighttime or periodic restraint should alternate the chained foot on a daily (nightly) basis.