
Supplementary Material: Survey, S1

Fossa Housing and Husbandry Questionnaire

Thank you for taking the time to complete this survey, the feedback you provide is incredibly valuable and very much appreciated. Your feedback and questions are welcome at any stage, however the final deadline to analyse the data of the questionnaire is April 30th 2017.

Your data will be confidential, throughout the study data obtained from this questionnaire will be referred to as 'Zoo A', 'Zoo B', 'Zoo C' or when referring to a specific animal 'Individual 1' at 'Zoo A'. Your Zoo/Collection will only be named in the list of participants.

The study aims to investigate 1) the demographic and population characteristics of fossa housed in zoological collections, 2) to review H&H practices and whether they are consistent with current AZA and EAZA guidelines, 3) to identify factors that may predict enclosure size, 4) to determine the prevalence of abnormal, unwanted or stereotypic behaviours and what factors may indicate the occurrence of these behaviours in fossa and 5) to identify predictors of breeding output associated with current H&H practices.

To complete this survey - it may be helpful to have access to animal records (e.g. ZIMS) and prior knowledge of enclosure sizes (blue prints/diagrams).

By completing this survey you agree and consent to the data provided to be used in this study.

Zoo Information

Name of Zoo

Your role at zoo

Total number of fossa housed

Individual background information

Sex of your fossa Male, female or unknown

Age of your fossa?

Origin? Captive bred or wild caught

Rearing? Parent or hand reared?

Reproductive status? Breeding or non-breeding

Have they bred at your collection? Yes or No

General housing and husbandry information Part 1

How are they housed? Singly, in mixed sex pairs (breeding/unrelated) breeding pair, in mixed sex pairs (non-breeding/related pairs), In single sex pairs (related), In single sex pairs (unrelated), Female and offspring group, Family group (Male, Female and offspring) or Other - please specify in the comment box.

Excluding singly housed Fossa, how are individuals kept?

24/7 unrestricted, share enclosure on rotational basis, fossa are separated at night, or other – please specify in the comment box

Are the fossa ever locked in/out (other than for cleaning/feeding)? Yes or No

General housing and husbandry information Part 2

Does the fossa have unrestricted access to off-show retreat from public view? Yes or No

How often are your fossa fed? Once per day, twice per day, three or more times per day, or the number of feeds vary on daily basis.

What time of day are your fossa fed? Morning, midday, evening, morning and midday, morning and evening, midday and evening, variable times throughout the day

Are they fed at the same time every day? Yes or No

Who inhabits the enclosure? Enclosure 1____ Enclosure 2____ (Question provides information for up to 6 individuals/enclosures).

Size of enclosure

What is the indoor height of enclosure in meters?

What is the indoor width of enclosure in meters?

What is the indoor length of enclosure in meters?

What is the outdoor height of enclosure in meters?

What is the outdoor width of enclosure in meters?

What is the outdoor length of enclosure in meters?

Enclosure features Part 1

Number of nest boxes provided (indoor and/or outdoor)?

Are the nest boxes heated? Yes or No

If yes, how many are heated?

Outdoor enclosure style? Open or closed top

Outdoor substrate? Concrete, sand, bark/mulch, grass or a variety of substrates?

Planting level of cover? Mostly open or sparsely planted, Medium level of planting, Densely planted (high level of cover for fossa),

Enclosure features Part 2

Is there a tree (natural or man-made) in the enclosure? Yes or No

Is there a water feature (natural or man-made) in the enclosure? Yes or No

Public view/access to enclosure? One side, two sides, three sides, four sides, zero sides (off show enclosure)

What is in visual access or adjacent (in proximity) to the enclosure?

Training and enrichment

Is there an training program provided? Yes or No

If Yes, how often is training provided? Once a month, once every two weeks, once or twice a week, 3-4 times per week, once daily, several times a day

Is there an enrichment program provided? Yes or No

If Yes, how often is enrichment provided? Once a month, once every two weeks, once or twice a week, 3-4 times per week, once daily, several times a day

If yes, what type of enrichment is provided? Olfactory, taste/food, auditory, tactile, cognitive, social, physical habitat

Unnatural Behaviour

Do your fossa perform any abnormal, unwanted or stereotypic behaviours? Yes or No

If yes, please continue.

Which unnatural behaviour does your fossa perform? Pacing- Any repetitive locomotion in a fixed pattern, such as back and forth along the same route or pattern e.g., figure of eight. Behaviour appears to have no goal or function.

Self-directed- Any self-injurious behaviours, such as biting/chewing/sucking/licking, causing wounds, missing fur or irritations. e.g., excessive grooming, tail/paw biting/sucking, Head rolling-Tossing head in circular motion

Anticipatory-Behaviours relating to daily cleaning/feeding routines, e.g., locomotion, vocalisations, waiting at hatch, keeper-directed behaviours, Other or Combination Please outline in as much detail as possible the fossa's behaviour in the comment box