

Adapted from Detroit Zoological Society's Audit Template (Kagan et al., 2015), the Wild Planet Trust audit is designed to provide an overview of the physical and social considerations for one or more animals sharing a habitat. The welfare audit consists of 28 questions designed to highlight positive and negative welfare indicators within four key areas: Animal health, Suitable environment, Behaviour and Stressors. It uses a traffic light scoring system to highlight key welfare concerns.

Firstly, the Curators are asked to make a list of priority species or enclosures that they would like to be audited (see Figure 1). If there is no preference made, a systematic plan for welfare auditing is devised.

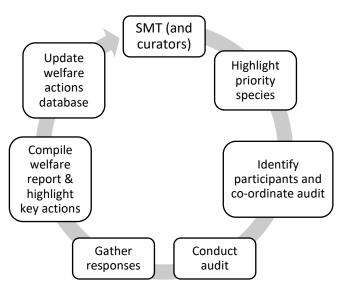


Figure 1: Welfare auditing process at the Wild Planet Trust.

A minimum of three staff members are needed to complete the audit. One neutral assessor is always present and a minimum of two keepers are required. Veterinary staff are invited to complete audits for species with greater welfare concerns, on request of the relevant Curator.

There is no maximum number of audits to be completed. All stakeholders involved with the species can complete an audit; giving the opportunity for all views and evaluations to be explored. For controversial/bias/priority species, additional audits should be completed, with additional neutral assessors and staff from other departments invited to complete an audit.

The audit takes approx. 15 minutes to complete. Questions have several answer options, including an 'Evidence/comments' section, to collect additional qualitative information. Each person completing an audit should answer the questions to the best of their ability based on their knowledge and expertise. Answers should be based on previous knowledge of the animals/ enclosure, and details observed during the auditing period.

Once completed, responses are compiled into a single audit report. This report provides an overview of the feedback given by the different stakeholders, including aspects of good welfare, and outlines recommendations for improvement. The report starts with an overview of the compiled scores to highlight the categories in the assessment where the main welfare issues were found (see Figure 2).

The reviewer reads the 'Evidence/comments' sections to identify shared views and issues highlighted in the completed audits. A more in-depth literature review is then conducted, consulting captive care manuals, scientific papers, ZIMS records, diet sheets, and keeping staff enquiries are included if necessary. Graphs and figures are used to illustrate and support reported issues. Photographs and videos may also be used as evidence if required. The audit report generates an overview of whether the welfare needs of the animal(s) are met, whilst encompassing the four different areas of the audit.

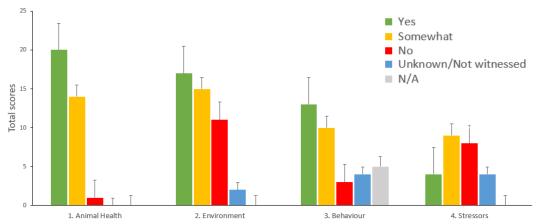


Figure 1: Example of graph used to analyse the compiled scores and highlight the main welfare issues.

Discrepancies between stakeholders can sometimes be highlighted in the audit report (e.g. different views on welfare concerns between neutral observers and keepers). It is important to evaluate staff training and bias concerning the welfare states and management of the animals in the collection.

At the end of the report, key actions are recommended, to address the welfare issues highlighted throughout the auditing process (Key actions = breakdown of tasks to improve areas where welfare needs aren't fully met).





Wild Planet Trust Welfare Audit Report

Species:

Completed by: Curator Vet Staff Keeper Neutral observer

Date: Score Summary:

Enclosure:

	Compiled scores								
Welfare measure	Yes	Somewhat	No	Unknown/not witnessed	N/A				
Animal health									
Suitable environment									
Behaviour									
Stressors									
Total									

Summary Paragraph: (discussion of aspects of good welfare, priority concerns, and evidence provided)

Discussed Items: (feedback from Curator)

Key Actions: (actions to monitor/ improve key welfare concerns)

Figure 2: Audit report template

When complete, the reports are submitted to the relevant Curator for review. Meetings are scheduled where the Curators can then suggest reasonable edits to the report and the actions list can be modified if needed. Following approval, the audit is considered complete and the key actions are added into a Welfare Action List (see Table 1). This list includes estimated scale of costs, timeframes and ongoing monitoring of progress for each suggested action, for each species or group of animals.

Table 1: Example of action spreadsheet (Welfare Action List) were key action completion is monitored.

Species	Scientific Name	Enclosure	Date of Review	Date of Curator approval	Welfare Audit Actions	Completed (Y/N)	Date of Completion	Cost (approx.)	Comments
					Continue monitoring and alleviate ongoing health problems	Ongoing		N/A	Ongoing as of 22/3/19
				Improve heating and lighting in the indoor area	Yes	1/3/19	£££		
San		. E1	5/1/19	23/1/19	Provide more elevated platforms	Yes	1/3/19	£	
Spp.	Spp.				Increase extent, complexity and density of branching indoors and outdoors	No		££	
					Provide substrate in the outdoor area	Ongoing		£	Ongoing as of 22/3/19
					Provide shelters outside	Ongoing		£	Ongoing as of 22/3/19

A "Welfare Actions List" is discussed during Curatorial and Welfare and Ethics Committee meetings, to be used as a reference for management decisions regarding the animals in the collection.

Re-auditing and comparisons between welfare states of different species:

Average welfare scores can be used to compare consecutive audits of the same species/group of animals over time or in response to housing, husbandry and social group changes. Graphs can be used for visual comparison between the audits and can highlight changes in welfare states after welfare actions are taken (see example of Figure 4).

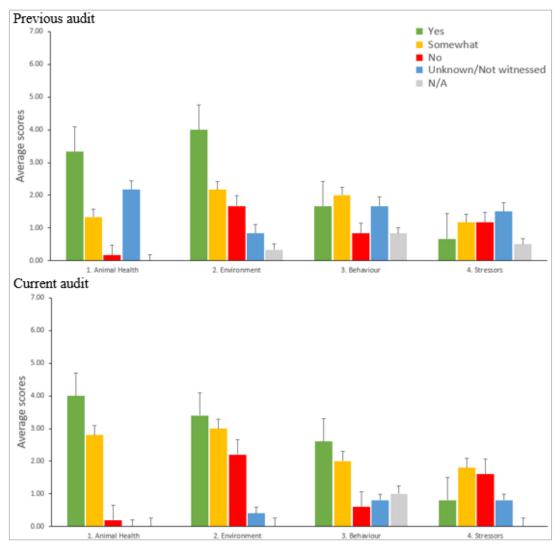


Figure 3: Example of average score comparison between two audits conducted before and after conducting changes in an animal enclosure. Analysis is meant to highlight areas where welfare states have changed between the two audits.

References:

Kagan, R., Carter, S., Allard, S., 2015. A Universal Animal Welfare Framework for Zoos. J. Appl. Anim. Welf. Sci. 18. https://doi.org/10.1080/10888705.2015.1075830

WELFARE ASSESSMENT

Date: Enclosure: Species: Completed by: Start/finish time: Weather:

Scoring Definitions:

Yes: evidence that animal welfare needs are fully met Somewhat: evidence that animal welfare needs are partially met No: evidence that animal welfare needs are not currently met Unknown/not witnessed: not enough evidence to provide a welfare score N/A: not applicable Evidence/comments: supporting details which have influenced welfare scores



Please tick appropriate box and provide evidence to justify scoring

Anima	l Health	Yes	Somewhat	No	Unknown/not witnessed	N/A	Evidence/comments
1)	Does the animal appear to be in good physical condition?						
2)	Are the animal's nutritional needs met (consider nutritional content of wild diet)?						
3)	Is the diet provided appropriate for the animal? Consider quantity, composition, and variation of food.						
4)	Are food and drinking water presented in a species-appropriate manner? Aspects to consider include; quantity of food, presentation, and time of feeding.						
5)	Is the animal free from injury/ physical harm?						
6)	Is the animal free from illness? Please provide details (e.g. acute/chronic).						
7)	Does the animal have access to preventative and emergency health care?						
	Total						
Suitab	le Environment	Yes	Somewhat	No	Unknown/not witnessed	N/A	Evidence/comments
8)	Does the environment provide safety and security to animals?						

 Does the physical environment meet the needs of the animal in terms of basic 						
provisions (food, water and shelter), size,						
complexity, construction, and substrate /						
landscape design?10) Does the animal have the capacity to						
choose where time is spent within their						
environment?						
11) Does the animal have the opportunity to choose whether or not to interact with						
conspecifics?						
12) Does the animal have access to shelters and retreats?						
13) Does the animal have access to						
enclosure-based enrichment?						
14) If so, does the animal engage with enrichment in a species appropriate						
manner?						
15) Is the animal free from environmental						
disturbance (keepers/other exhibits/						
visitors)? 16) Do environments provide climatic						
conditions (temperature, humidity,						
lighting) similar to natural						
environments/appropriate for species? Total						
Behaviour	Yes	Somewhat	No	Unknown/not witnessed	N/A	Evidence/comments
17) Does the animal have the ability to express						
a range of natural behaviours? 18) Does the animal have the opportunity to						
integrate into natural/appropriate social						
dynamics?						
19) Are social dynamics stable?						
20) Does the animal utilize enclosure space						
and furnishings?						

 21) Is the animal free from signs of apathetic behaviour (e.g. depressed, lethargic, disinterested)? 22) Is the animal free from aggressive interactions beyond those appropriate for the species? 23) Does the animal engage in social or 						
solitary play behaviour?						
Stressors	Yes	Somewhat	No	Unknown/not witnessed	N/A	Evidence/comments
24) Does the animal have the capacity to avoid stressors (visitor / keeper/ social stress)?						
25) Is the animal free from abnormal, including stereotypic, behaviours? Please describe (e.g. locomotive, oral, self- injurious)						
26) If applicable, is there an understanding of what causes these abnormal behaviours?						
27) Where appropriate, is there a proactive response to managing any abnormal behaviours?						
28) Is the animal free from fear response behaviours associated with aspects of the environment/ husbandry procedures?						
Total						
Welfare Audit Total						