



Statement: Dublin Zoo Inspection Report

Following a comprehensive and rigorous investigation into animal welfare allegations made anonymously and received on December 13th, 2023, the National Parks and Wildlife Service (NPWS) has unequivocally affirmed that the staff at Dublin Zoo are unwaveringly dedicated to the highest standards of animal welfare, ensuring the well-being and dignity of every animal in their care, both as individuals and as populations (see page 17 of the report).

The report emphasises that Dublin Zoo continues to prioritise the welfare of our animals, constantly evolving our practices and facilities to align with the latest standards and knowledge in animal care. We maintain a strong commitment to transparency and have demonstrated this through our open communication and cooperation with the NPWS inspection team.

The NPWS report reviewed 17 allegations of animal welfare breaches in the period of 2004 to 2022. As noted by the NPWS, Dublin Zoo is committed to maintaining the highest standards of animal care and welfare and has cooperated fully with the inspection team by providing comprehensive access to all relevant records, documentation, and additional information as required.

The Report reveals that of the 17 allegations made:

- Sixteen were categorised as having 'no evidence to support the narrative of the allegation' and were unfounded.
- One allegation was partially supported and was identified as 'evidence supports the historical allegation, but Dublin Zoo had resolved issue' through changes in 'process, facility, or management.'

The one case that was partially supported pertained to an incident from 2004 involving a California sea lion, Kipper, who unfortunately succumbed to dystocia. The report acknowledged that while earlier intervention could have been beneficial, the actions taken at the time were consistent with the knowledge and facilities available then.

Issues raised by staff regarding animal welfare at Dublin Zoo are handled with utmost seriousness and are thoroughly investigated. Any disclosures are addressed immediately and rectified where necessary. Staff are encouraged to report animal welfare concerns through their team, Dublin Zoo management, or anonymously.

The allegations in this report were made without consulting Dublin Zoo to verify their legitimacy, causing considerable distress.

Dublin Zoo appreciates the thorough and impartial review conducted by the NPWS Zoos Inspectorate. We take all feedback seriously and are committed to using these findings to further enhance the care and welfare of our animals. Our mission to promote conservation, education, and the highest standards of animal welfare remains steadfast.

Like all progressive zoos, Dublin Zoo continuously aims to enhance and set new benchmarks for our animal welfare management program. The collective understanding of animal behaviour is ever evolving, and at Dublin Zoo we do our utmost to ensure we adhere to and, where possible, exceed best practice at all times. While human error is unavoidable in managing animal welfare, the course of action taken once an issue is identified and the manner of its resolution are crucial.

At Dublin Zoo, we are proud of our outstanding track record in animal welfare management. We are pleased that the reputation of Dublin Zoo and our dedicated team of employees and volunteers, who live and breathe our mandate of animal welfare daily, has once again been upheld.



An tSeirbhís Páirceanna Náisiúnta
agus Fiadhúlra
National Parks and Wildlife Service



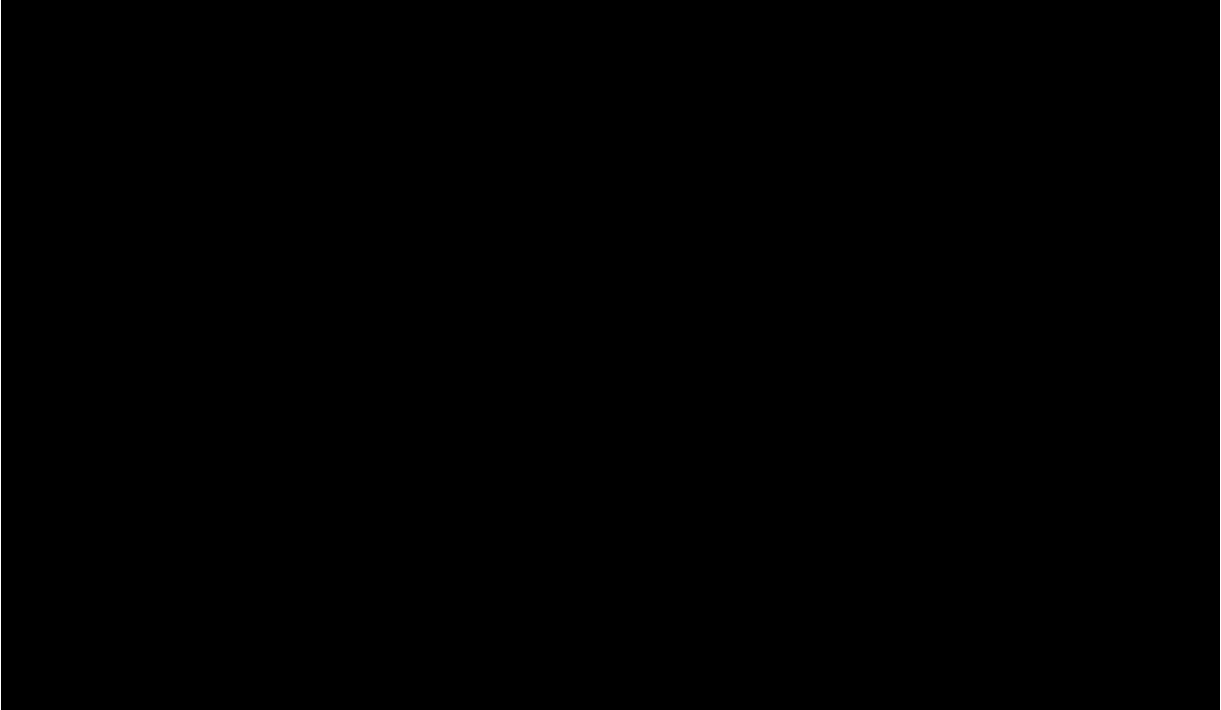
DUBLIN ZOO SPECIAL ZOO INSPECTION REPORT 2024

December 2023 to February 2024

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NOTE REGARDING GDPR OR COPYRIGHT REDACTION REQUIREMENTS



END

DUBLIN ZOO SPECIAL INSPECTION WELFARE ALLEGATIONS INVESTIGATION FINDINGS

INTRODUCTION

The following investigation resulted from the provision of a partial protected disclosure provided to the Garda at the end of 2023. A redacted version, focusing on the animal welfare concerns, was given to the zoo inspection team, part of National Parks and Wildlife Service, on the 13th of December 2023 whom made a provisional assessment of the allegations made to compare them against previously investigated complaints. This initial review was completed on the 21st of December 2023 and identified a total of 17 complaints, of which two had previously been made with no new information being added. In the case of these two complaints, they were addressed in the report entitled 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' and in both instances the allegations were found to be unsupported (see cases, 21 and 23). The remaining 15 cases were determined to be new allegations against Dublin Zoo and ranged across a period of 2009 to 2022, with three having no dates of the alleged incidents having occurred. Following this initial review it was recommended that the 15 new allegations be thoroughly reviewed to ensure that if there are welfare or compliance issues present then these must be managed appropriately. The review of these 15 cases forms the basis of this special inspection.

WELFARE COMPLAINTS TIMELINE SUMMARY AND COMMENTS

- The protected disclosure mentioned 16 separate cases, with the inspection team breaking down case 14 into two separate complaints, giving a total of 17 cases
- Of these 17 cases, two had been addressed already in the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' and there was no additional information added that required the cases to be reviewed.
- The remaining 15 cases spanned a period of 2009 to 2022, with three cases having no specific date applied to them yet later identified as being 2004 (Case 03), 2007 (Case 02), and 2012 (Case 03). This brings the period from 2004 to 2022, a total of 18 years.
- Of the 15 remaining cases, 12 were with regards to the death of individual animals and 3 with regard to alleged compromised welfare.
- Only two of the 17 allegations occurred under the current management of both the Director and the General Curator, whom started in 2020 and 2019 respectively.
- The protected disclosure stated, "*While Dublin Zoo may dismiss some of the following accounts as "historic"...*". The inspection team did not believe this to be relevant and all of the allegations were assessed using the available data to ensure that a comprehensive review of the welfare allegations was undertaken, independent of what was appropriate or whether or not action could be taken against welfare allegations that were historic with the oldest being nearly 20 years old. This was to ascertain the relevance of the historical culture at Dublin Zoo against the more recent animal welfare allegations.
- It was noted that the cases outlined in Case 10 and 15 contained information and wording that mirrored the protected disclosure that was investigated in 2022, as such the comments were compared and contrasted to the previous documents and no further action was taken as these had been addressed in the 2022 report. Whether the author is the same for both complaints was not considered relevant for this inspection report, although it was noted that the 15 new allegations had not been made in the original 2022 protected disclosure.
- Details of each of the individual cases and when they occurred compared to the management teams in place are outlined in figure 02 'Timeline of Welfare Case Allegations at Dublin Zoo 2004-2022: December 2023 Protected Disclosure Allegations Only'

EXECUTIVE SUMMARY OF THE INSPECTION REPORT

- 16 animal welfare allegations were made against Dublin Zoo spanning a period from 2004 to 2022.
- The 16 animal welfare allegations were increased to 17 allegations as Case 14 consisted of two separate allegations.
- Of the 17 animal welfare allegations 2 had already been investigated in the 2022 Dublin Zoo Special Inspection and with no new information coming to light these were not investigated further.
- Of the remaining 15 allegations, 12 were with regards to the death or euthanasia of individual animals, 1 related to the welfare of a single animal and 2 related to the welfare management of a group of animals.
- The same assessment process as used in the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' was utilised to carry out the initial phase of the assessments and as a result no additional interviews or further information was deemed to be necessary.
- Similar to the findings of the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' the allegations referred in the most part to real cases but the allegation narrative was not found to fit the events as stated in the written medical records, typically provided by the external and independent veterinarian, or the animal records related to the cases.
- In several cases the recollection of the complainant was confused and certain elements had been incorrectly recorded, this being acknowledged by the complainant themselves in the protected disclosure.
- Of the 17 allegations they all fell into the following case categorisations:
 - 15 allegations were considered as (2) Evidence to demonstrate the allegation refers to an actual case, and (3) No evidence to support the narrative of the allegation;
 - 1 allegation was considered as (1) No evidence to support the allegation and (3) No evidence to support the narrative of the allegation, this was case 13 with regard to the sloths becoming overheated for which there was no evidence but there were concerns that there were low environmental temperature issues which requires further investigation (see Appendix 03) but did not form part of the original allegation;
 - 1 allegation was not scored, this was case 14b which was not considered a welfare allegation but a comment on collection management practices; and finally
 - the final allegation was considered (2) Evidence to demonstrate the allegation refers to an actual case, (3) No evidence to support the narrative of the allegation, and (4) Evidence supports the historical allegation, Dublin Zoo has resolved, this was the case of the dystocia in the sea lion which did occur, but the narrative was not supported as a historical concept was assessed against current knowledge rather than contemporaneous knowledge which resulted in the combination of (3) and (4) which is unusual, see case 3 for details.

these are summarised in figure 01 following this Executive Summary.

- A new category was added which highlights where an animal welfare allegation was not considered a welfare allegation but primarily a complaint of an HR nature between the complainant and the Dublin Zoo senior staff. These differences of opinion were not considered to have led to the welfare compromise in the manner alleged in the cases. Of the 17 cases, 9 were considered to fall into this category.
- As stated in the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' *"Animal welfare is a core part of Dublin Zoo and it continues to strive to move forward raising standards and building on its strong foundations, adapting when mistakes occur and providing a culture that promotes world-class husbandry and strives to be the best it can. They are clear in these goals and have been nothing but transparent in their communication of what they believe and how they want to take Ireland forward in global conservation and best practices in zoo animal husbandry"*. This inspection team has found that this continues to be the case and Dublin Zoo

continues to evolve and develop its already high standards and commitment to animal welfare and compliance with the legislation.

Figure 0.01 Dublin Zoo Welfare Allegations Investigation Team Findings

Due to the number and the complexity of the cases the investigation team identified a need to clearly delineate beyond simple yes or no with regard to the allegations. There were elements of truth in most of the cases but this was variable, either due to source, the quality of the information, or whether the whistleblower was present or was reflecting on documents or observations by other members of staff. As such the credibility varied between the cases. As such the investigation team assigned each case to a finding of unfounded or supported, with subcategorisation to one of five categories which would demonstrate the justification behind the decision. An allegation may have been accurate in part but based on the narrative or welfare concern outlined in the allegation meant the investigation team could consider an allegation unfounded based on whether the actions taken by Dublin Zoo were demonstrated to have been a failure to provide for the welfare needs of the animal or animals (depending on the nature of the event), or whether the emotions or perceptions of the witness were poorly reflective of the events as they transpired. These sub-categories are outlined below:

1 No evidence to support the allegation

- (a) Investigation team are unable to demonstrate that the allegation occurred at all e.g. animal does not exist
- (b) Whistleblower has not provided evidence that the allegation occurred

2 Evidence to demonstrate the allegation refers to an actual case

- (a) Investigation team are able to demonstrate that the case refers to an actual animal, event or situation

3 No evidence to support the narrative of the allegation

- (a) The inspection team are able to demonstrate the narrative of the events alleged does not agree with the events that occurred
- (b) Whistleblower has not provided evidence that the allegation occurred as stated or lacks any credibility in the narrative

4 Evidence supports the historical allegation, Dublin Zoo have resolved

- (a) The allegation is reflective of the events that occurred
- (b) Dublin Zoo identified the welfare event and directly took action to resolve, mitigate or ensure it cannot occur again

5 Evidence supports the allegation, Dublin Zoo have not resolved

- (a) The allegation is reflective of the events that occurred
- (b) Dublin Zoo have not taken action to resolve the active or potential welfare event and it is ongoing or a risk of repeat in the future

New to this report is an additional section, marked as a square, which denotes if the allegation was considered to actually be an HR or communication issue and was not an actual welfare issue e.g. perceived conflict between the complainant and other staff involved in the specific allegation. These are marked as **HR**. Where a case is marked as HR then in most instances it denotes that there was an issue between the complainant and other, typically, senior staff and that either there was no actual welfare allegation made, the complainant lacked competency in interpreting the situation or there were perceived issues of communication between the complainant and staff with no welfare allegation made.

Each case was assigned a summary card that provides a snap-shot of the allegation, the decision made by the investigation team, the justification for that decision and whether additional recommendations have been made following assessment of the case. An example summary card is provided:

CASE	01. 'Kilarney', Grant's zebra	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/> <input type="checkbox"/>	FINDING	UNFOUNDED
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In this example the case is Case 01: 'Kilarney', the Grant's zebra. The justification summary confirm that the 'Kilarney' case was an actual case that occurred, but in this case the allegation was not supported by the evidence, including contemporaneous documentation. As such, the response to her case was considered compliant with the Standards at the time of the incident. Therefore, the allegation was considered unfounded. An (R) refers to recommendations made by the investigation team, in this case no recommendation has been made. Where the investigation team are of the impression that the Standards have not been met then a condition will be issued, this is marked as a (C).

CASE	01. 'Kilarny', Grant's zebra	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	02. 'Danny', chimpanzee	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	03. 'Kipper', California sea lion*	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input checked="" type="radio"/> 4 <input type="radio"/>	<input type="checkbox"/>	FINDING	?SUPPORTED (R)
CASE	04. 'Hailey', Baringo giraffe	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	05. 'Kamba', okapi	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED
CASE	06. 'No name', Baringo giraffe	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED (R)
CASE	07. 'Blake', Grant's zebra	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	08. 'Roisin', Kerry cow calf	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED
CASE	09. 'No name', bongo calf	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED
CASE	10. 'Trouble', ostrich pelvis	<input type="radio"/> Previously reviewed <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	11. 'Neema', Baringo giraffe	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED
CASE	12. 'Isiro', okapi	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	13. Sloth house temperatures	<input checked="" type="radio"/> 1 <input type="radio"/> <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED (C)
CASE	14a. Citron-crested cockatoos	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED (R)
CASE	14b. Reduction in bird species	<input type="radio"/> No specific welfare case <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED
CASE	15. Goeldi's monkeys mortalities	<input type="radio"/> Previously reviewed <input type="radio"/>	<input type="checkbox"/>	FINDING	UNFOUNDED
CASE	16. 'Marmaduke', S. Amer. tapir	<input type="radio"/> <input checked="" type="radio"/> 2 <input checked="" type="radio"/> 3 <input type="radio"/> <input type="radio"/>	<input checked="" type="checkbox"/> HR	FINDING	UNFOUNDED

Recommendations made to the NPWS Zoo Licensing Department: (R) Recommendation / (C) Condition

*Note: Case 03 is marked as a (4) in addition to (2) and (3) as elements of the case did highlight evidence of a misdiagnosis and a failure to act based on the information provided. However, based on contemporaneous information available to the animal care team the decisions made were considered acceptable. As such elements of the case are considered unfounded and in part inaccurate, whereas other elements were considered challenges related to the knowledge available at the time, lack of facilities available to take action and in part a lack of available data from a case that occurred 20 years ago which would be handled very differently now. As such the case is considered unfounded as per the allegation made, but does not require action at the time of writing the report as the situation is no longer comparable to current knowledge and the current sea lion facilities at Dublin Zoo. See the case review in the appendix for more details.

TIMELINE OF WELFARE CASE ALLEGATIONS AT DUBLIN ZOO 2004 - 2022: DEC 2023 PROTECTED DISCLOSURE ALLEGATIONS ONLY

2004	Case 03: Kipper, California sea lion Died: Dystocia, 20 th of June 2004				2004
2005					2005
2006					2006
2007	Case 02: Danny, chimpanzee Euthanased: conspecific injury, 26 th of May 2007				2007
2008					2008
2009	Case 01: Killarney, common zebra Died: killed by rhino 'Zanta', 2 nd of April 2009				2009
2010					2010
2011					2011
2012	Case 04: Hailey, giraffe Died: collapsed, 19 th of November 2012				2012
2013	Case 05: Kamba, okapi Died: colic, 19 th of December 2013	Case 06: no name, giraffe calf (dam Cocio) Died: Trauma, 21 st of May 2013	Case 07: Blake, common zebra Incident: capture myopathy, 8 th of May 2013		2013
2014			Case 09: No name, bongo calf (dam Kimba) Died: Post-caesarian, 13 th of August 2013		2014
2015					2015
2016		Case 11: Neema, giraffe Died: collapse, 10 th of June 2016			2016
2017	Case 10: Trouble, ostrich (previous Case 23, 2022) Died: fractured pelvis, 3 rd of November 2017				2017
2018	Case 12: Isiro, okapi Died: fractured hindlimb, 25 th of June 2018	Case 08: Roisin, Kerry cow Incident: failure to drop milk, 7 th of April 2018			2018
2019			Case 14: Multiple, Citron-crested cockatoo Incident: Maintained in quarantine facility indefinitely		2019
2020			Case 15: Goeldi's monkeys (previous Case 21, 2022) Incident(s): 27 th December 2019 to 17 th May 2022		2020
2021	Case 13: Group, sloth Incident: temperature management, 2021			2022 Special inspections allegation period	2021
2022	Case 16: Marmaduke, South American tapir Died: Multiple organ failure and thyroid cancer 28 th of August 2022				2022
2023					2023
Leo Oosterweghel Director 2001 - 31/07/2020		Christoph Schwitzer Director 01/08/2020 to present	Miguel Bueno General Curator 01/07/2019 to present	Previous Vet Team Zoo Veterinarian ?? to 01/10/2018	Current Vet Team Zoo Veterinarians 01/10/2018 to present

COVID LOCKDOWNS

2020: (1) 13th March to 2nd June, (2) 22nd October to 2nd December
2021: (3) 1st January to 26th April

Previous General Curator
2004 to 2018

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION

DUBLIN ZOO SPECIAL INSPECTION WELFARE ALLEGATIONS INVESTIGATION

AIM

This special inspection report was produced following a comprehensive special zoo inspection investigation that was initiated in response to the welfare concerns and allegations raised by a partially reviewed protected disclosure provided on the 13th of December 2023. Recommendations are made with regard to the findings of the investigation, including a critical appraisal of each animal welfare allegation made with respect to Dublin Zoo and recommendations for any further action to be taken with regard to Dublin Zoo based on the evidence available and assessed at this investigation.

SPECIAL INSPECTION SCOPE

This document provides an evidence-based investigation into the allegations of failings with regard to the provision of animal welfare as defined within the Irish Standards of Modern Zoo Practice (2016) as reported by the protected disclosure of the 13th of December 2023. This investigation was carried out without prejudice and solely reviewed the factual evidence made available to the investigation team. Reference is made to the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' as two of the allegations provide the same information pertaining to two of the cases found within that previous inspection, as such these are reproduced in this report without any additional investigation, these having been previously resolved.

It is noted that at the time of completion of this investigation report no formal allegations regarding concerns of animal welfare at Dublin Zoo have been made directly to the NPWS Zoo Inspectorate.

The allegations are reviewed in order as outlined by the protected disclosure provided on the 13th of December 2023.

INFORMATION SOURCES FOR THE INVESTIGATION

This aspect of the investigation with regard to the welfare allegations pertaining to Dublin Zoo were limited to second or third-hand source material as reported by individuals, namely:

- the partially redacted protected disclosure provided on the 13th of December 2023;
- Information, records, clinical data, and post-mortems provided by Dublin Zoo and Dublin Zoo's veterinary team on request with regard to the specific allegations made (it is noted that rather than redact information, where a specific case is mentioned in a document the whole document was provided, rather than only the specific elements requested). These were returned to Dublin Zoo following the investigation; and
- publicly available online sources, including newspaper publications, where pertinent to the individual case, where information from the zoo was limited due to the historical nature of the individual case.

With regard to the whistleblower(s), the investigation team was unaware of the identities of the actual whistleblower(s). The team was uninterested in the identity of the whistleblower(s) and solely focused

on the factual evidence of the events, whether the allegations were supported or not by documentary evidence and verbal testimonies, and whether animal welfare failings had occurred at Dublin Zoo.

INVESTIGATION PROCESS

The process for this special inspection report mirrors the methodology of that carried out in Phase 01 of the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022'. This being a comprehensive review of the Protected Disclosure received on the 13th of December 2023; a review of media and online sources referencing the animal welfare allegations where available; and requests made direct to Dublin Zoo with regard to the individual animals or situations named. Verbal testimonies were not carried out at this stage of the inspection as the initial reviews determined that this was not required following a review of the documentation provided.

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION

DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION FINDINGS

INTRODUCTION

The investigation into the welfare allegations with regard to Dublin Zoo made in December 2023 identified 16 welfare allegations, which were expanded to 17 welfare allegations following a review of the statements (case 14 contained two separate concerns). Due to the number of allegations, the eighteen-year period over which they spanned (2004 – 2022), and the complexity of many of the cases, this investigation needed to be extensive and required multiple different technical experts to be consulted, across a wide range of taxa and disciplines. The result is that the investigation has taken just over two months to complete following access to the protected disclosure. The investigation required assimilation and assessment of several hundred documents, which were cross-referenced against technical bulletins and peer-reviewed scientific papers, which were then compared against the statements in the allegations, which were then compiled and assessed by the investigation team to determine whether the allegations were supported or unfounded.

COMPREHENSIVE ASSESSMENT

The following is a summary of the findings, assimilating all the welfare cases that have been reviewed. Readers are advised not to read this in isolation but to review the detailed case assessments found in Appendix 1 which outlines the documentation, events, assessment and final finding with references where relevant.

ORIGIN AND CREDIBILITY OF THE SOURCE MATERIAL

The source material was primarily the allegations made in the protected disclosure submitted to the zoo licensing team on the 13th of December 2023. This was a redacted protected disclosure and concerned only the section entitled 'Animal Welfare Concerns', which consisted of pages 2-7 of what was believed to be a wider document which was not shared with the inspection team as it fell outside of the scope of the animal welfare concerns. There were no names nor identifiers which could link to the whistleblower(s) making the allegations nor whether there were one or more persons involved in making the allegations.

Having undertaken the reviews of the allegations made in light of the contemporaneous records the seventeen allegations were considered to fall into one of five groups:

- No evidence to support the allegation (1/17 cases)
- Evidence to demonstrate the allegation refers to an actual case (15/17 cases)
- No evidence to support the narrative of the allegation (16/17 cases)
- Evidence supports the historical allegation, Dublin Zoo has resolved the issue (1/17 cases)
- Evidence supports the allegation, Dublin Zoo have not resolved the issue (0/17 cases)

In addition to the standard 5-categories classification developed for the 2022 Dublin Zoo Special Inspection Report, an additional category was added for this special inspection. Many of the Animal Welfare Concerns listed in the protected disclosure were not actual welfare concerns, the primary complaint was with regard to the interaction between the whistleblower(s) and other members of the Dublin Zoo team, typically senior management where opinions differed. As such a clear distinction was

made when assessing cases whether they fell into animal welfare allegations, whether they were simply HR issues of staff interactions or a mixture of both. To avoid doubt all cases were considered as welfare cases to avoid any criticism and they were assessed on their own merits, but the additional classification was highlighted that issues were predominantly HR issues and not those of animal welfare issues:

- The number of cases that were considered to be predominantly HR concerns, rather than any specific issues of animal welfare were recognised (9/17 cases)

The allegations appeared to be a mixture of first-hand experience where there was reasonable detail that married with the contemporaneous record and other accounts (e.g. media) through to the majority having a sound basis of an event having occurred e.g the death of the animal in question, but the allegation having no further sound or accurate information, a narrative being attempted to be built around a few known facts. As such the credibility of many of the allegations is brought into question and made the assessment of each case challenging for the investigation team. A similar pattern was found in the 2022 allegations and two of the cases presented in the seventeen were identical with no new information identified in the more recent 2023 allegations.

As a result, the investigation team had to identify the cases where there was an element of fact (15/17 of the allegations), critically appraise the wording and concerns of the allegations, and take a step back and look afresh at the evidence, independent of the original allegation’s poor interpretation of the facts of the case, as to whether there was a welfare case present or not. This was compounded by second-hand interpretation and supposition required in several cases as the contemporaneous records were often poor due to the length of time that had passed or the quality of the record-keeping at the time. For instance, of the 17 cases:

Period (YBP)	Time period	Number of cases
15 - 20 years	2003 – 2008	2
10 - <15 years	2009 – 2013	6
5 - <10 years	2014 – 2018	5
Present to <5 years	2019 - 2023	3
Statements (no time period or specific allegation)		1
Total number of allegations		17

*Note: zoo licensing only requires records to be maintained for 6 years, although Dublin Zoo did have records going as far back as the oldest case which occurred in June 2004

In some cases, the credibility was challenging to assess by solely using the allegations and the contemporaneous records, but for many, it was obvious whether the allegations had any grounds at all:

- Several of the cases demonstrated that the whistleblower(s) was (were) poorly informed as they lacked the correct information either due to not being present when the case occurred, or they were not made aware of all of the details at the time of the event. A good example is case 09, which involved the bongo ‘Kimba’ who suffered dystocia during parturition that led to her having to have a caesarean section. The allegation implies that the keeper was ignored, and the dam was left to suffer, with the delay in the surgery being inferred to have led to the death of the calf. Whereas the record clearly states that the vet assessed ‘Kimba’ in the afternoon and was satisfied to monitor her to see if she passed the calf naturally, as often is the case, the caesarean was carried out later that evening once she was reassessed and had made no progress, the calf was delivered alive. The calf went on to live for a further 6 days and was

ethanased at the vet school where it was found it had severe congenital heart defects that were the primary cause of its deterioration, these not being related to the delay in the caesarean nor the actions on the day of its birth nearly a week earlier. The keeper felt that if they had been listened to, the calf would have had a better chance of survival, where, in fact, the severe congenital disease was going to lead to the death of the calf soon after it had been born.

- A number of the cases were not welfare cases but were considered to be misinformed or inexperienced keepers recollecting poor decision-making or a lack of understanding of situations as they occurred. What is disappointing is that the whistleblower(s) are unaware that the case allegations fail to demonstrate an understanding of the events and the outcomes that occurred, even with hindsight. The inspection team are of the opinion many of the allegations highlight their lack of credibility and a failure to recognise the learning opportunities that were available in many of the cases which would have aided in the development of their basic husbandry knowledge, instead their perception of several of the events points to the failing being that of their managers or other staff within the zoo, rather than their own inexperience. For example, case 08 involved a keeper poorly assessing a Kerry cow that had recently had a calf. They misinterpreted the behaviour and lacked a basic understanding or experience of the steps in assessing domestic cows as to whether they had dropped milk and whether the calf was healthy and suckling, insisting a vet be called in who then undertook these basic actions and confirmed all was fine. The narrative missed out on some of the critical elements of the events as they took place, inferring that the line manager's comments were inappropriate but appeared merely to be a senior member of the team informing the said keeper where they went wrong and how to learn from it. There are several allegations that demonstrate a lack of experience and knowledge of basic animal husbandry, with the interpretation of events not consistent with the events as they were documented. The inspection team did note that the competency of the keepers described in the allegations was poor, and the inspection team had concerns with regard to keeper training, delegated responsibility and sign-off as being competent in the processes at Dublin Zoo. However, this did not form part of the special inspection nor the stated allegations. Case 15 is another example described and analysed in detail in the 2022 Dublin Zoo Special Inspection Report which clearly highlights that the diet was not considered an issue for the dystocia and periparturient deaths of Goeldi's monkeys and that this was a case of foetal oversize between 'Buffy' and the sire 'Nose'. None of this information has been included in the allegation sent in December 2023, rather the focus remains on the diet and elements that have been disproven by the EEP coordinator and from subsequent diet trials with the Dublin Zoo Goeldi's monkeys as clearly outlined in the 2022 review of the same case. The 2022 Dublin Zoo Special Inspection report is readily available from the Dublin Zoo website at the time of writing and yet was not considered prior to the current allegation being made, despite the total lack of robustness of the same claims made back in 2022.
- A large number of the cases were HR issues of communication or keepers feeling that their opinions had been dismissed or not involved in the decision-making process. This was found to be the case in 9 of the 17 cases, where the management or events involving the animal were often not disputed nor raised as a welfare concern, simply that in the management process their opinion was perceived to be disregarded. The inspection team, in part, recognised that it is important to consult with all individuals involved in a case, but equally, the inexperience and lack of competency demonstrated in some of the allegations by the staff members was likely a major factor in why their opinions were dismissed (if at all they were). As noted above there were plenty of cases demonstrating that the keepers simply did not understand or were misinterpreting what was occurring. This may have been due to their competency, their seniority in a case discussion or simply the keeper's perception. A good example of this is case 16, which stated that the tapir 'Marmaduke's' welfare was ignored, and

his welfare was not followed up with the keeper, and the keeper felt they were being side-lined. Yet there was considerable evidence over the last 48 hours that the keeper team were actively involved in his quality-of-life assessments, engaged with the vet attending to him over the weekend, and their involvement in the final discussion as the team worked through the euthanasia assessment plan, involving all of the keepers working on the weekend, the veterinarian, the Team Leaders and the Senior Curator - a total of 6 people. The inspection team were not sure how an individual could be considered being side-lined, as the records clearly demonstrated the inclusive nature of the discussions as they occurred.

- One case (case 14b) was simply a statement regarding the animal collection having fewer birds than it has had historically; this was not considered a welfare issue at all but an opinion of the whistleblower(s). This was commented on but not considered a welfare allegation but an animal collection planning one.

Whilst many of the cases were relatively easy to demonstrate had been based on actual events most of them fell into one of two areas: they were either (i) real events but the narrative did not support the event or (ii) there were real events but the concerns were HR related and not actual welfare cases. As most involved real cases, each was taken on its own merits, and no assumptions were made when first assessing the case. The inspection team believe it was important to ensure that if there were welfare concerns that each case be assessed with regard to its own merit and the case then compared to the allegation itself. Case 13 is a good example of this where the allegation raised concerns about the sloths being too hot which was not supported but it has led to the inspection team raising concerns that the evidence provided potentially demonstrates that the sloth ambient temperatures are at times in actual fact too cold (albeit there are heat lamps in the facility so it is unlikely that the animals are compromised) and the processes require review as to how and when action is taken. This will be assessed at the next zoo inspection to ensure it is suitable or does, in fact, need addressing. In most cases, though, when reviewing each individual case, the investigation team was unable to find alternative welfare issues or interpretations, nor failings on Dublin Zoo's part to treat their animals with dignity and respect.

INVESTIGATION FINDINGS

The investigation team overall found that Dublin Zoo promoted animal welfare throughout their operational practices. A reputation that has long been held by Dublin Zoo and one that appears to be as current today as it has over the zoo's history. This position is represented by the core values of the zoo, which were reflected in their approach to animal husbandry, the comprehensive health care programmes in place, and the team's passionate belief in their high standards and that they can always be better, striving for more and to continually improve the welfare for the animals in their care. In all of the cases assessed as part of the allegations being reviewed, the staff at Dublin Zoo always strived to put the needs and welfare of the animals first whilst trying to ensure that everything that could be done was done.

The outcome of the investigation found of the seventeen welfare allegations that the following could be robustly evidenced:

- 2/17 of the cases contained the same statements made in the 2022 allegations, with no new evidence coming to light. These were addressed in the 2022 Dublin Zoo Inspection Report which had obviously not been considered by the whistleblower(s) and the response was copied in full from that inspection report with no need for further review. Both were unfounded then as they are now;

NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

- Category 1: 1/17 cases had no basis and when reviewing the case the total opposite was found and the inspection team have made a condition for the zoo inspectors to undertake a review of this area (see case 13);
- Category 2: 15/17 cases referred to actual animals or events that had occurred, with an additional one (case 13) involving animals on site but not as described;
- Category 3: of these 15(16)/17 cases 16 of them were considered to be unfounded with no evidence supplied to support the narrative of the allegation. Specifically, where concerning the welfare of a single individual animal, the inspection team noted that the care provided was considered to have been to a high standard, ensuring the animal was treated with respect and dignity, even when the case or outcome may not have been as Dublin Zoo would have wanted.
- Category 4: the one exception included in the 16 Category 3 cases was case 03 which was not supported as per the narrative implied but was partially supported in that the California sea lion had died from dystocia and earlier intervention would have been appropriate when considered against current practices, however the information available at the time of the events (in 2004) meant that the actions taken were considered likely to have been appropriate taking into account the facilities, industry competency and technical knowledge available twenty years ago;
- Category 5: there were no allegations that fell into the category where 'Evidence supports the allegation, Dublin Zoo have not resolved'.
- HR: 9 of the 17 cases were predominantly HR issues and not those of animal welfare concerns. It was disconcerting that the whistleblower(s) could not differentiate between welfare problems and suffering from actively managed cases, mostly under veterinary supervision, that strived to provide the animals in Dublin Zoo's care with every opportunity to survive and thrive, rather than simply euthanase the animal at the first opportunity available. A pro-life stance was part of the culture under the previous Director, and this does not appear to have been at the expense of the welfare of the animals. This view permeates to the current team but there are much more robust safeguards in place to ensure euthanasia is considered and takes into account the welfare needs of the animals rather than promote a pro-life stance at the expense of welfare.

The investigation team's final position on the welfare allegations was that only one of the 17 cases was considered partially supported in their allegation (case 03) and that this case is a legacy issue that has been addressed in part by vastly improved new facilities for the sea lions and more readily available access to technical information and experience that was not available some 20 years ago. Case 13 was not supported but during the investigation concerns with regard to the methodology with regard to temperature recording and management for the sloths at the lower end of their temperature range requirement have been raised and the zoo inspectorate will be directed to review this on-site with the Dublin Zoo team to confirm whether the concerns are founded or not.

In summary, of the 17 allegations pertaining to animal welfare breaches at Dublin Zoo the investigation team only found evidence to partially support one of the cases as alleged and the rest were unfounded as per the original wording of the allegation. In reviewing the potential for other welfare concerns in the case records as presented by Dublin Zoo, independent of the statements found within the allegations, the investigation team were unable to demonstrate any further welfare cases nor breaches other than the possible issue with regard to the minimum temperature thresholds for the sloths.

SUPPORTED CASE

The majority of the animal welfare allegations were considered unfounded with the exception of case 03 pertaining to the dystocia-related death of 'Kipper' which was in part supported, and the temperature management of the sloths which was unfounded as per the wording of the allegation but the investigation raised concerns that were opposite to that stated in the allegation that requires further investigation. In the investigation team's opinion, this demonstrates that Dublin Zoo is only

human and that mistakes can happen, but where Dublin Zoo shows its true values is how and when it responds to these failures. These were considered single isolated cases, rather than ongoing representations of chronic welfare problems across the wider zoo.

In case 03 the allegation states that the team pleaded for intervention on what was considered to be a dystocia. The case records confirm that it was a dystocia, but not as reported in the allegation and the veterinary and management team did take steps to assess and support her. The primary challenge was a lack of technical experience available in 2004, compounded by a totally unsuitable facility that would not have allowed suitable intervention to have been undertaken and, if attempted, would likely have led to the death of both animals either way; hence, the outcome was likely to be the same. Early euthanasia would not have been permitted at the time based on the clinical picture represented in the records. The animal was under veterinary supervision during the period of concern. The zoo inspectors raised concerns with regard to the sea lion facility in the September 2012 inspection report and praised the plans for the new facility in September 2013, with the Sea Lion Cove not opening until 2015. The new facility allows improved management of the sea lions and opportunities to intervene could be achieved more rapidly and be supported with huge advances in marine mammal medicine that have occurred in the intervening 20 years since this case occurred. As such, whilst not dismissing the incident, the case does not reflect either the current sea lion management systems employed today nor does the inspection team recognise that the Dublin Zoo team would have done nothing at the time of the event as implied in the allegation. As such the case was partially supported and a recommendation has been made to mitigate any such event occurring again in the future (see Appendix 03).

In case 13, the allegation raised concerns of alterations of the thermostat being moved to 30°C, which impacted the welfare of the sloths. This was not supported and was considered unfounded. However, in reviewing more recent changes in the facility with the use of dataloggers monitoring the temperatures it was noted that the opposite may be a possible issue. As such a condition has been made that the evaluation, understanding, monitoring and recording of the thermal environmental provision is thoroughly reviewed. The inspection team are of the opinion that the sloths are highly unlikely to have been compromised as they have access to heat lamps in the facility but if the ambient temperature records are reflective of the enclosure temperatures then their choice and freedom to use all of their space could have been reduced.

So, in closing zero of the seventeen allegations are supported. One is partially supported in that potential errors were made, but these were reflective of the capability twenty years ago (case 03), and one is not supported but has raised additional concerns that need to be further assessed to ensure that possible concerns are mitigated. These two cases aside, the picture at Dublin Zoo is one of positive welfare driven programmes and processes that respond to issues noted in a practical and considered manner.

TRANSPARENCY

Historic allegations made against Dublin Zoo have publicly claimed that the zoo has been hiding wrongdoing and lacking transparency with regard to its implementation and support of animal welfare. The investigation team would like to highlight to the readers of this report that Dublin Zoo was transparent about the cases involved in the allegations and provided the investigation team with complete access to their records, documentation, images from post-mortems, film, video and other formats as requested and sometimes additional documents not requested to allow the investigation team to have a complete picture of events as they occurred to enable an accurate and evidence-based review of each case.

Access to staff was offered but was not felt necessary at this time as the initial Phase 01 documentation provided was considered sufficient to respond to the allegations made. Additional, information from oral testimonies may have filled in some of the gaps for completeness but the inspection team did not believe that it would have changed the outcomes from reviewing the issues as they were predominantly unfounded or HR issues as described in each case.

At no time did the investigation team perceive that Dublin Zoo were attempting to hide wrongdoing.

RECOMMENDATIONS and CONDITIONS

Appendix 3 outlines the recommendations and conditions that have arisen from this investigation process. A number of these are to ensure that historical allegations and concerns noted during the investigation have been fully resolved and processes are in place to ensure they do not occur again, whilst others are simply to increase to the robustness of the existing policies where gaps were identified by the investigation team.

CLOSE

The investigation team took the allegations as stated and investigated them robustly and in an evidence-based manner to ensure that if there were welfare failings at Dublin Zoo that steps would be put in place to address them or recommendations made to undertake enforcement actions under the Animal Health and Welfare Act (2013). No preconceived ideas or judgement were made with regard to the allegations and each case was approached in an open manner to ensure the dignity, respect and welfare of the animals and the staff that look after them was protected. Only two of the seventeen allegations were considered to be partially supported, one of which were historical and had been addressed, with the second not reflecting the allegation (which was unfounded) but the investigation raised additional questions which is being resolved through a site inspection by the zoo inspectors as part of the annual zoo inspection process. As such the investigation team are confident that the animal welfare programmes, which continue to evolve and develop, are in the best interests of the animals at Dublin Zoo and the staff at Dublin Zoo have the best interests of the animals, as individuals or as populations, in everything that they do. This position is demonstrated over the twenty-year period covered by these allegations.

END

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION
APPENDIX 01

WELFARE ALLEGATIONS – INDIVIDUAL DETAILED CASE ASSESSMENTS

DATE:	13 th DECEMBER 2023 – 26 th FEBRUARY 2024	
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The following are the detailed welfare allegation case reviews. Each assesses the original allegation, the source material, the course of the events as described in the contemporaneous record, the salient key points of the contemporaneous records, the interpretation of the supplied information compared against the allegation, the zoo inspection reports and whether they were reflective of the case findings (where applicable), the outcome of the case investigation, and any relevant references utilised in the case review. They are listed in the chronological order in which they were received by the Department.

1.0 'KILLARNEY' ZEBRA KILLED BY RHINO 'ZANTA'

Date of incident:	Died 2 nd of April 2009
Species & identification:	Grant's zebra (<i>Equus quagga boehmi</i>) Female, 11 years and 9 months Local ID A0M057
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- African Plains exhibit grand opening and staff pushed to prematurely mix the zebra with the white rhinoceros as part of a mixed exhibit, against the advice of the Team Leader at the time
- On the morning of the press release the animals were mixed and the white rhinoceros 'Zanta' eviscerated the zebra 'Killarney' who then died shortly thereafter
- Staff were asked to remove video footage from their phones

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

15 th April 2009	Minutes of the Animal Management Meeting, Dublin Zoo
20 th April 2009	Irish Independent article, Rhinos relocated by zoo after accidental zebra death
6 th January 2024	ZIMS record for A0M057, 13/06/1997 to necropsy results 28/05/2009

Summary review of the documents reviewed as part of the investigation:

A comprehensive review was undertaken of the documents available from 2009 and only the following statement, taken from the April minutes of the Animal Management Meeting, was identified with regards to the management of the African Savannah exhibit opening: "A temporary electric fence is to be added to the "African Savannah" to allow the rhinos to mix visually with the giraffes, zebra, oryx and ostrich", this occurring after the incident.

The oryx and the zebra were mixed in the African Savannah exhibit on the 23rd of March 2009, and the records show that there was a small amount of fighting between the zebra and the rhinoceros 'Ashanti' and 'Zuki' on the 31st of March 2009. It was not clear when the zebra were mixed with the rhino, nor was it apparent whether they had been mixed prior to this date with an electric fence or without. The records at this time were sparse and for the entire life of 'Killarney' there had only been 47 individual notes in her records, 21% of these were in 2009. No notes with regard to issues, fighting nor concerns with regard to the rhinoceros and the zebra were highlighted in the records until the 31st of March 2009.

On the 2nd of April 2009 four of the zebra were chasing 'Zanta' the white rhinoceros and 'Zanta' is reported to have "...turned and accidentally gored one of the zebras – zebra died".

The post-mortem report identified that "there was a 15cm long tear on the ventral abdomen, left parallel to the midline and a portion of the small intestine had herniated through the tear. A large area of haemorrhage was present in the abdominal cavity and the posterior 7 ribs were each broken at the level of the costal arch".

The Irish Independent article of the 20th of April 2009 provides a detailed account and interview with the then General Curator which outlines the incident in some detail. The rhinoceros were separated immediately following the incident with management plans put in place. The article included the quote "It's just a question of mixing them again but doing it very slowly...but there are no guarantees when you're dealing with wild animals."

The exhibit was officially opened, 7 days after the incident, on the 9th of April 2009 by the then President of Ireland, Mary McAleese.

At present, in 2024 the white rhinoceros are maintained in a dedicated area separate to the other animals held in the mixed exhibit, including the zebra.

Findings of the investigation with regards to the specific case

- The death of 'Killarney' occurred on the 2nd of April 2009.
- 'Killarney' was killed by a ventral penetrating wound to the abdomen and ribs from the horn of 'Zanta' a white rhinoceros following an accidental altercation possibly triggered in response to the other zebra frustrating 'Zanta'.
- The information with regards to the mixing process and timelines is sparse due to the lack of detailed records from 2009, nearly 15 years ago. However, mixing did appear to occur towards the end of March through to early April 2009, with an official opening date of the 9th of April 2009.
- The cultural and leadership involvement in the mixing process is not captured in the animal records or staffing meeting minutes, however there is mention of developing mixed exhibits in the Irish Independent article that promotes mixing the animals in a slow manner which did not appear to be the case here.
- The discussion and details of the incident were comprehensive and detailed in the Irish Independent newspaper article and was considered a transparent and open discussion about the events of the incident.
- Mitigation actions were discussed immediately after the event and many of these have evolved and are still in place today.

Interpretation by the investigation team

The allegation with regards to the death of the Grant's zebra 'Killarney' is supported by the internal animal records from Dublin Zoo as well as the extremely public discussion found in

the national newspapers available at the time. This was a public incident and it reflects the challenges of creating and managing a mixed exhibit of this nature.

Mixed exhibits provide a wealth of enrichment and welfare opportunities and choice by bringing species together that can interact and provide each other with novel engagement. However, these sometimes come with welfare challenges as different species interact in different ways; dietary management and disease management considerations also providing challenges that can be well managed and sometimes not. There are multiple examples of white rhinoceros being mixed with a variety of different species, including zebra. Equally there are a number of examples where zebra have been challenging in mixed exhibits and often, through their inquisitive nature, they have engaged with other species that has resulted in the death of those species.

This incident in the welfare allegation is a not uncommon event in a mixed exhibit. These can occur at primary mixing, through to incidents occurring months or even years later due to unexpected or unpredictable interactions occurring. The only way to prevent such mortalities is to not have a mixed exhibit. Mixed exhibits, therefore, are a management challenge of dynamic and responsive risk assessment. Notes were made about mild fighting between the rhino (noted not 'Zanta') and the zebra 48 hours prior, but no further mention was made until the death of 'Killarney'. The incident being an accident, with no evidence ahead of the action occurring. The inspection team are not of the opinion that this was a preventable death. It is not clear if there were additional stressors on the staff driving the formal opening of the habitat at the time of the incident, and it is not the belief of the inspection team that (a) the then Director would push for opening at the expense of the life of one of the animals at Dublin Zoo, and (b) nor would the animal team have continued to push ahead with the mixing if they had witnessed any behaviours indicative of any antagonism between the two species. The follow up by Dublin Zoo is documented in the management meeting minutes and in the press, with no evidence to demonstrate a lack of culpability nor duty of care to the remaining living collection at that time.

Detailed records are lacking from this period, which demonstrates the value of good, accurate and comprehensive records. This in part limits the extent of the investigation and the reliance on third hand reports as per the newspaper article.

The inspection team also note that this was a well-known and highly publicised incident that occurred during 2009, prior to the enactment of the Animal Health and Welfare Act 2013, with animal welfare managed under the Protection of Animals Act 1965 at this time. Under this legislation no concerns were raised nor action taken against Dublin Zoo with regards to the death of 'Killarney', despite the high profile nature of the incident.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection reports from the 15th of October 2009 states that the zebra-rhino conflict (is now) being managed. No further comments or concerns were raised in the report.

Outcome of the investigation with regard to the specific case

The incident itself did occur as described in the allegation, which is fully supported by the animal records provided by Dublin Zoo and the narrative found in the Irish Independent. However, the incident is not considered a malicious act, an act of negligence, or an incident that could have been avoided by a more considered approach to managing the mixing. This was an incident, even an accident, as described by the then General Curator, that could have occurred at any time.

There is no evidence available to support nor refute the comments with regard to the drivers behind the decision to mix the animals and possibly rush the process to meet a deadline a week later. This being nearly 15 years ago now and even verbal testimonies are questionable with regard to the finer details of the events as they actually played out. The principle senior management are no longer employed within Dublin Zoo and immediate mitigation practices were put in place in response to the incident.

This is a challenging case to offer a decision on. On one hand the incident did occur, however the inspection team are unable to comment on the factors that may have led to the mixing occurring at the time, whether this was managed in an appropriate manner, and whether any of the processes at that time led to the death of 'Killarney'. It is of the opinion that a faction of the zebra herd were frustrating the rhino and 'Killarney' was in the wrong place at the wrong time. This was not a predictable event and nor was the outcome. As such, especially taking into consideration both the time that has passed, the lack of documentation reviewing the incident from the time, and a lack of concern being raised with regard to animal welfare being communicated for nearly 15 years, the inspection team is of the opinion that this case was assessed and reviewed very much in the public domain at that time and no action was deemed necessary other than that already taken. There is no evidence provided in the allegation that is not available from the publicly available documentation about this incident and none that suggests non-compliance with the European Communities (Licensing and Inspection of Zoos) Regulations, Statutory Instrument No. 440 of 2003 that has not already been addressed at the time the incident occurred.

As such, the inspection team is of the opinion that no action, some 15 years after the event, is required at this time and there are no active animal welfare concerns noted as a result of this allegation that requires communication to the relevant authorities.

References

- Government of Ireland (2003) European Communities (Licensing and Inspection of Zoos) Regulations, Statutory Instrument No. 440 of 2003

2.0 'DANNY' CHIMPANZEE DIED FROM INJURIES FROM ANOTHER CHIMPANZEE

Date of incident:	Euthanased 26 th of May 2007
Species & identification:	Chimpanzee (<i>Pan troglodytes</i>) Male (castrated), 20 years 11 months Local ID 86M006
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Danny endured months of repeated attacks from Austin, the then dominant male chimp in the group
- Despite requests to separate Danny from the group Danny eventually died from his injuries

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

20 th June 2007	Minutes of the Animal Management Meeting
6 th January 2024	ZIMS record for 86M006, 06/06/1986 to necropsy results 06/06/2007

Summary review of the documents reviewed as part of the investigation:

In 1993 Danny had an inguinal hernia repaired and a single gonad removed at this time and then in 1999 he was castrated completely, potentially due to aggressive behaviour towards the females in the troop. Attempts were made to use the beverage Guinness as a tool to address his behaviour but he did not like it. Eventually his behaviour was managed with the use of long-acting neuroleptics which were started in 2000.

'Danny' moved to the new chimpanzee facility on African Plains in October 2000.

During the period from his arrival to the time of his subsequent euthanasia he was reported to have a number of incidents where he was the aggressor attacking other chimpanzees, typically females. No reference was made regarding male-male aggression or fighting. Simple notes made in the animal records of small cuts on limbs in 2003 but not much more than that, the main issue was group-wide viral diarrhoea and loss of condition which went on for approximately one year.

In 2004 'Danny' had a number of bad bites to his foot in January which recovered in less than four days. He had superficial cuts on a monthly basis for the first half of the year, source not reported and no more fights noted. Little or no more comments with regard to fighting until April 2006 where 'Danny' was fighting with 'Wanda' and 'Bossou'

(‘Austin’s’ son) but ‘Danny’ was not recorded as being injured. Not until February 2007 is any aggression noted, in this case ‘Danny’ was fighting with ‘Austin’ as ‘Wendy’ was in season. On the 24th of May 2007 two chimpanzees were moved from the African Plains to far-side (original enclosure), and three new chimpanzees brought into the African Plains house from far-side.

On the 25th of May 2007 ‘Danny’ was found with “...*deep wounds to his hands and a very bad wound on his right foot – flesh hanging off and it is very swollen*”. The vet attended the following day and identified that bone was protruding, and the foot was not salvageable, ‘Danny’ was euthanased on welfare grounds on the 26th of May 2007.

The gross post-mortem report is recorded as only identifying the right foot injury and no other external or internal injuries nor gross pathology were noted in the report summary.

Findings of the investigation with regards to the specific case

- ‘Danny’ was an aggressor in most interactions, especially towards females
- There were multiple challenges in managing the chimpanzees, using fission-fusion techniques with Dublin Zoo being in a unique position in that they retained the old chimpanzee habitat (far-side) and the new (African Plains) which allowed flexibility and management spaces to ensure optimal husbandry
- The social groupings had created a long-term challenge for Dublin Zoo, due to the nature of the chimpanzees, their individual origins and legacy issues from original source animals – this has been a long (decades) process which has seen improvements in recent years but at the time of ‘Danny’s’ death there were challenges in the group management
- Proactive environmental, behavioural and physical separation management were practiced as a holistic management programme supported by external experts
- The programme was further challenged by recognition of different species of chimpanzees and identification of hybrids which required reproductive management and segregation from the non-hybrid animals, however this came after the ‘Danny’ incident – see 2022 Dublin Zoo special inspection report for details.
- ‘Danny’ was particularly aggressive to a number of animals on repeated occasions, causing wounds to other animals. He received a relatively small amount of wounds in return with only 10 notes made in the period 1986 to 2007 (a period of 21 years) with regard to wounds being recorded, of which only 1 was treated (healed up before treatment started) and 1 was the serious injury that led to his euthanasia.
- ‘Danny’ was born June 1986 with wounds reported in 1999 (1), 2000 (1), 2002 (1), 2003 (1), 2004 (4), 2005 (1) and 2007 (1). There were no wounds or injuries noted in 2007 other than the final injury that led to his euthanasia nor were there any wounds mentioned in 2006, with the single 2005 injury occurring in July 2005. The inspection team recognise the diligence in which chimpanzee wounds were recorded when of concern and that no wounds were recorded for a period of 22 months prior to his euthanasia.
- ‘Danny’ was found on the morning of the 25th of May 2007 with “...*deep wounds to his hands and a very bad wound on his right foot – flesh hanging off and it is very swollen*”.

- ‘Danny’ was euthanased on the 26th of May 2007 following veterinary assessment due to the severe bite wound to his right foot that was not treatable nor survivable and so he was euthanased on humane welfare grounds.
- The post-mortem report describes the right foot injury in detail along with other findings at post-mortem. No other injuries or bite wounds were described in the post-mortem report summary but mention of additional deep wounds to his hands is mentioned in the animal records on the 25th of May 2007. Access to the original post-mortem was not possible 17 years after the event.

Interpretation by the investigation team

The inspection team recognise that ‘Danny’ was a challenging chimpanzee to manage and that he was often an aggressor towards other animals in the troop. Dublin Zoo recognised these concerns in 1999 and actively managed ‘Danny’ both behaviourally, reproductively and for a period with the use of long-acting neuroleptics. This was interpreted as active management of ‘Danny’ for his own wellbeing as well as for the welfare of the troop.

The allegation states that **“Danny endured months of repeated attacks from Austin”**. This statement cannot be corroborated from the evidence submitted for review. The animal records only document 10 wounds in ‘Danny’s’ entire life and of these none occurred in the last 22 months of his life other than the injury to his foot that led to him being euthanased. However, there were multiple references with regard to ‘Danny’ attacking other chimpanzees that led to injuries to the other animals, primarily females. ‘Austin’ is only mentioned once in ‘Danny’s’ animal record: during February 2007 *“Wendy is in season. Danny and Austin fighting with Wendy in the morning”*. No other interactions, significant or not, were recorded in ‘Danny’s’ record. There is no mention of wounds nor repeated attacks by ‘Austin’ on ‘Danny’. This is not to say that there were no attacks or interactions between ‘Austin’ and ‘Danny’, simply that the interactions were not considered to be of interest or significant enough to warrant recording, whereas other negative (and positive) interactions were clearly demonstrated in the animal’s records.

The allegation states that **“Despite his Keepers’ repeated requests to have Danny separated from the group...”**, there is no evidence from 2007 submitted in response to the requests to support or refute this statement. There is no reason to separate ‘Danny’ from the troop other than his own aggressive behaviour, yet there was evidence of chimpanzees being moved from African Plains (where ‘Danny’ was at the end) to the Far-side chimpanzee enclosure the day before the injuries occurred. He was in effect separated from the females whom he had been attacking and new animals were brought into the Africa Plains exhibit. Whether these were maintained separately as they were reintroduced or put into the group directly (unlikely) is not recorded in the submitted records. Whilst it is not recorded this transfer of animals between the two facilities may have been a trigger of historical relationships culminating in an aggressive response from the chimps remaining in the new facility (e.g. ‘Austin’) that led to the injury. However, whilst this is reasonable conjecture with no evidence to support this statement it cannot be verified and other hypotheses are possible as to what led to the fight and subsequent injuries. It is not recorded how the injury occurred but it is assumed that it was a bite injury but it is not

recorded who actually bit 'Danny', however based on subsequent reports it was believed to be 'Austin', the then dominant male. It is also noted that whilst Dublin Zoo had the luxury of two chimpanzee habitats they both had troops in and had animals that 'Danny' had a history of being aggressive to, therefore separation was not an option and rehoming to another facility would have been the only alternative option and the reality of this being limited to a small number of sites willing to take on a known aggressive and castrated chimpanzee.

The allegation states that *“Danny’ eventually died from his injuries”*. This is not factually correct in that 'Danny' had the hand and severe right foot injuries on the morning of the 25th of May 2007 and he was subsequently euthanased on the 26th of May 2007, 24 hours later due to the severity of the lesions. He did not die from the injuries but was euthanased due to the severity of the lesions.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection reports available to the inspection team go back as far as 2006 and no concerns with regard to fighting were noted with regard to the chimpanzees in the 2006 nor 2007 reports. 2006 reported that the Great Ape facilities were to be replaced and the 2007 report flagged that enrichment provision could be improved.

Outcome of the investigation with regard to the specific case

Reviewing a welfare case of this nature almost 17 years after the event is challenging as there is limited information available, relying only on animal records available from the time and the details of the protected disclosure. Verbal testimonies may be beneficial but even then due to the passage of time and a limited number of staff being present from the time these are likely to be questionable in the accuracy of the recollection and specific management challenges that occurred at the time, especially as there have been other issues within the chimpanzee population since that time (see 2022 special inspection report).

The question as to whether there were welfare concerns here for 'Danny' as an individual and the remaining troop and whether Dublin Zoo staff and management attempted to provide for 'Danny's' needs is the primary question. It is not without question that 'Danny' would have suffered following the incident that led to the hand and right foot injuries he received. He was attended by a veterinarian and the injuries assessed and he was euthanased on welfare grounds due to the severity of those lesions. Whether the assessment should have been a day earlier is easy to consider with hindsight but often in these types of cases a chimpanzee has injuries, due to the nature of the species, that do not require treatment and are often hidden from proper assessment, whether mild or severe. Until they can be assessed under anaesthesia it can be impossible to robustly evaluate the lesions. As soon as the injuries were assessed euthanasia was indicated which is not undertaken lightly, especially under the then Director's views on euthanasia at the time, which indicates the severity of the lesions in the opinion of the inspection team. 'Danny's' record demonstrates multiple previous wounds and treatment being

administered where required, the diligence of the keeping team and the veterinary support is not in question and the actions taken on the 25th and 26th May 2007 appear to be reasonable and proportionate with regard to 'Danny'. Note, the decision to delay assessment under anaesthesia is discussed in the 2022 special inspection report – due to the challenging nature of working in with chimpanzees anaesthesia historically took time to plan and ensure the safety of both staff and the animals. This has evolved and the response time by the Dublin Zoo veterinary team is much more responsive than it was 17 years ago. This is not a reflection on the veterinary team at the time of 'Danny's' euthanasia, more a comment on the safety challenges and how they had to be managed historically.

As to the allegation of repeated attacks from 'Austin', this cannot be supported as there are no records of any injuries to 'Danny' by any animal and only one mention of a fight with 'Austin' in February 2007 over a female in oestrus ('Wendy'). The fact that previous fights and injuries are well documented in his record is interpreted as that there had not been any serious injuries or fights recorded, with no injuries reported in the 22 months preceding his euthanasia.

The allegation also states that "**Danny eventually died from his injuries**". This is not technically true as he was euthanased and did not 'die' from his injuries, the allegation implying that the cumulative total of the "**months of repeated attacks from Austin**" led to 'Danny' dying from his wounds. Instead, the narrative presented in the animal record is one of a single incident on the 24th/25th of May leading to severe injuries noted on the 25th of May 2007 which were assessed by the veterinarian on the 26th of May 2007 where he was immediately euthanased on welfare grounds. This was thought to be consistent with conspecific trauma, most likely bite wounds. The nature of the injuries being typical of chimpanzee attacks which typically target face and digits.

Taking into account the animal records provided and the Minutes of the Animal Management Meeting it the inspectors are satisfied that Dublin Zoo were of the belief that 'Austin' attacked and severely injured 'Danny', which led to his subsequent euthanasia on welfare grounds. The inspection team note the decade of attempted management of 'Danny' and his aggression towards the troop and the challenges of managing the chimpanzee troop at this time. All efforts were made to integrate and manage the chimpanzees and this was a proactive approach aiming to support the animals and overcome the legacy issues that were inherited with the animals brought to Dublin Zoo. This is an ongoing process and is being managed diligently by the current zoo staff to this day. The attack between 'Danny' and 'Austin' was not considered avoidable and the inspection team believe that the Dublin Zoo staff took all steps to manage the animals prior to the incident and stepped in to provide veterinary care and assessment in response to the incident. As such, the allegation is not supported and nor is the narrative portrayed.

No further action recommended, other than giving consideration to interview of staff present at the time to provide some additional information to this case, with the caveats outlined above. Such interviews are not considered likely to alter the outcome of the assessment, simply to fill in some of the gaps in the animal record.

References

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3.0 'KIPPER' DYSTOCIA AND SUBSEQUENT MORTALITY

Date of incident:	Died 20 th of June 2004
Species & identification:	California sea lion (<i>Zalophus californianus</i>) Female, 9 years and 8 days Local ID 99M005
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Due to a breech labour 'Kipper' was left in distress and bleeding for two days on the sea lion island
- Keepers made requests to intervene but no action was taken
- 'Kipper' was found dead in the pool on the third day

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

2nd January 2024 ZIMS record for 99M005, 12/06/1995 to necropsy results 21/06/2004

Summary review of the documents reviewed as part of the investigation:

Kipper was born on the 12th June 1995. All of the records held on ZIMS were transferred from ARKS with ZIMS which was rolled out in 2011-2015, the case predating when ZIMS was available. The majority of the records referencing ocular issues within the sea lion population over the time period October 1995 to February 2004. There was a single report on the 17th of September 2001 where a sea lion that was possibly 'Kipper' was losing weight and this may have been due to feeding the baby. There was no mention of any pregnancy nor birth within the group and at this time she would have been 6 years of age which is considered young but not impossible to be a mother. Otherwise, there were no records of a reproductive nature, nor mating records nor parturition.

On the 18th of June 2004 'Kipper' was reported to not have fed well and at 14.30hrs "*seemed to go into labour. Blood seen coming from her rear, restless at times, but also lying calmly on rocks near the public*". The following day 'Kipper' was assessed by the veterinarian and it was noted that "*Bleeding and agitated – not eaten for about a week ? parturition 1st stages ? to observe today*". On the 20th of June 2004 the record states that 'Kipper' "*Has not eaten for 8 days – Not given birth yet – using pool a lot also second island. Blood discharge found on island – ate 4 fish this afternoon. She is very bloated this afternoon! Very uncomfortable*".

The next record entry made on the 20th of June 2004 reports 'Kipper's' death using the codes available in the ARKS at the time as "*Other/unknown; Reproductive; Trauma*" with

additional notes made on the 21st of June 2004 by the veterinarian as “*Dystocia due to nape presentation and uterine rupture*”.

The record ends at this point and no more details were available due to the time that had passed, this being twenty years previous.

Findings of the investigation with regards to the specific case

- Minimal animal records, with only 29 entries for the period June 1995 to June 2004, of which five reference the dystocia and ‘Kipper’s’ death.
- First noted that ‘Kipper’ may have been showing signs of parturition at 14.30 on the 18th of June 2004, with records of her eating on the afternoon of the 20th of June 2004 but later dying that same day.
- Death was reported to be due to dystocia due to nape presentation leading to uterine rupture.
- No contemporaneous records from the time of the death were available.

Interpretation by the investigation team

This is a case that occurred twenty years ago and so has to be assessed against contemporaneous knowledge of the management of California sea lion reproductive management, California sea lion anaesthesia, and the facilities available at the time. Added to this is the lack of records and only short summaries of the events that occurred due to the challenges of using MS-DOS based ARKS for data entry.

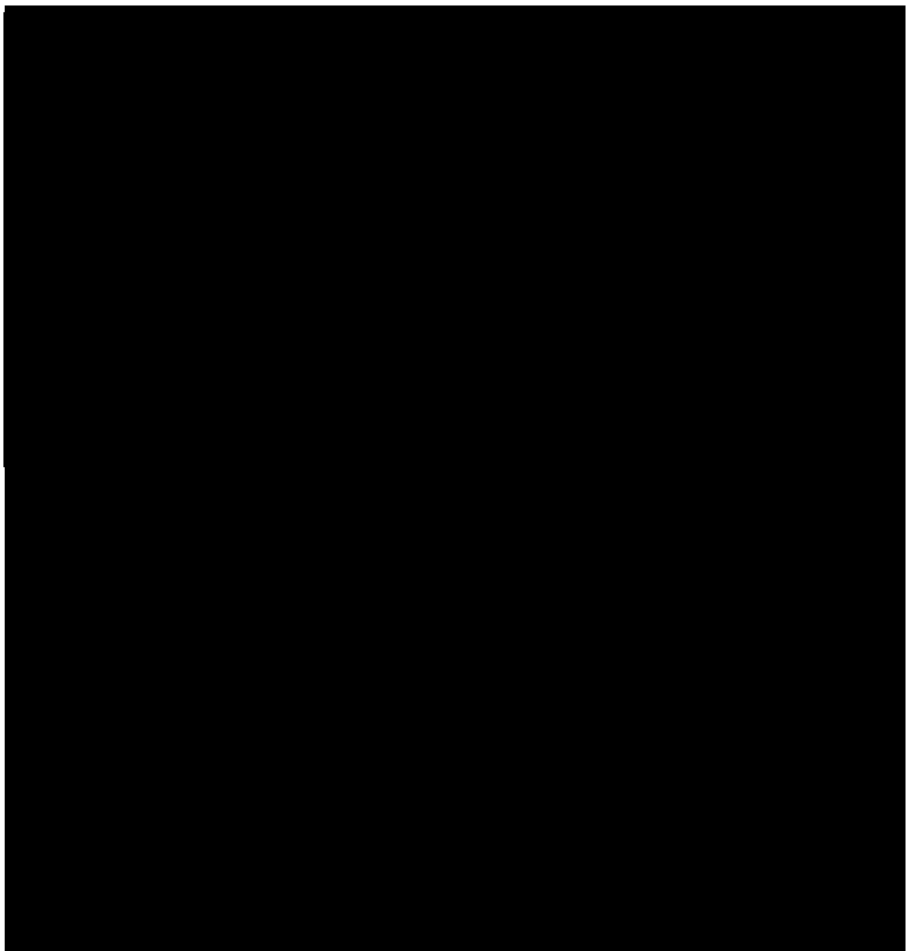
At the time of the event, in 2004 Google was only 6 years old, the internet whilst not in its infancy was not as accessible as it is now, and textbooks were still the primary source of information. Google Scholar was only introduced in November 2004, some five months after this incident. The primary textbook for medical management of marine mammals was initially Ridgway (1972) *Mammals of the Sea: Biology and Medicine*. This was superseded by Dierauf (1990) *CRC Handbook of Marine mammal Medicine: Health, Disease and Rehabilitation 1st Edition*, which has been updated with new versions in 2001 and 2018. The main general zoo medicine textbook being Fowler and Miller’s *Zoo and Wild Animal Medicine*, which was on its fifth edition in 2004, and was published in 2003. With regard to reproductive management, including parturition, of California sea lions Ridgway (1972) discusses wild breeding but little on the act of parturition; Dierauf (2001) being the primary source at the time does not discuss parturition, only induction of parturition for animals exposed to domoic acid, however it does discuss dystocia in cetaceans, not pinnipeds; Fowler and Miller (2003) mentions that caesarians had been performed in pinnipeds but did not discuss dystocia as an issue. None of the mentioned texts mention normal parturition, duration nor dystocia. Odell (1975) is the only paper on breeding biology of California sea lions that the inspection team could identify and this is in an obscure proceedings that would not have been available at the time (it is not easy to find now). Dierauf (2018) first mentions dystocia in captive-bred animals and states that “*Rates of dystocia in captive-bred animals have not been determined; however, they appear to be low, since no cases have been reported*”. When reviewing natural history textbooks with regard to normal parturition

behaviour there is little mentioned about parturition and any issues being noted (Peterson (1967), Ridgway and Harrison (1981), Würsig et al (2018), and Castellini and Mellish (2016)).

Anaesthesia of marine mammals was a little better and suggestions were made in both Fowler and Miller (2003) as well as extensive recommendations in Dierauf (2001). However, whilst anaesthesia was well documented there were still relatively high mortality rates at the time with improvements in the last decade seen with regard to marine mammal anaesthesia. Due to diving related physiological adaptation marine mammal anaesthesia still carries a degree of risk and often requires specialist and knowledgeable anaesthetists with experience working with the species. It is not undertaken without considerable planning.

Sea Lion Cove as it currently exists did not open until 2015 and in 2004 the sea lion facility was little more than a single pool and a shed system. There were no appropriate facilities to manage a post-surgical caesarean case

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] The islands referred to in the animal records can be seen and access is not possible if 'Kipper' was laid



out on these. It is not clear whether she came in or not. The pool had 360 degree viewing and the whole exhibit was on show.

Reviewing the case retrospectively, using current knowledge, it was apparent that this was highly likely to be a dystocia. The little information available with regard to normal parturition is that it is relatively quick and complications are rare. The average length of labour, delivery and then passage of the placenta is 91 minutes (Odell (1975)). EAZA-EAAM (2018) report typical otariid parturition times being 12-79 minutes, occasionally extending to 2.5 hours. Having no sea lion pup produced within 48 hours is highly suggestive that normal parturition had not occurred, with reference to their being blood present was considered abnormal over the 48-hour period. It is also noted that there had been no

confirmation or suggestion that she was pregnant nor that the clinical signs were reproductive related, other sources of the blood (e.g. gastrointestinal) could have been considered. Remote management was actioned with no interventions taken. This decision is difficult to comment on based on the scanty records. It is highly likely that dystocia or complications of reproduction from the history were considered, the challenge being what interventions were appropriate, when to intervene (with considerations that anaesthesia or other interventions could put the mum and potential pup at risk), and how to deploy them in the current facility. The inspection team, when considering the case management of other cases in this current (and previous) complaint, suspect that interventions were being planned and actions being discussed with other clinicians at other collections but this is not possible to confirm due to the paucity of the records. Such actions would have been running concurrently and may not have been communicated to the keeping team at that time.

The level of haemorrhage was not clear from the records, it is assumed by the inspection team that this was not severe otherwise immediate steps would have been expected to be actioned. She was swimming and had eaten for the first time prior just prior to death. Knowing the outcome of the event, it is highly likely that the abdominal distension on the 20th of June and the change in behaviour was related to the uterine rupture but this would not have been able to be diagnosed without access to trained behaviours or anaesthesia for ultrasound. Whether ultrasound was available is not known.

It is not clear, due to the passage of time, whether there was an incident review and what lessons were learned. Dystocia is poorly reported in California sea lions and many other pinnipeds at the time (Dierauf, 2018) and whilst clinically this appeared to be the case other differentials were equally plausible. Reviewing current literature for other pinniped species dystocia is reported (note this was not available at the time of the incident). Michael et al (2016) reported in New Zealand sea lions (*Phocarctos hookeri*) that dystocia was suggested to occur in this species with large, over-sized pups being reported consistent with foetal-pelvic disproportionate sizes. Spraker and Lander (2010) reported that dystocia was the second most common cause of death, after bite wounds, in wild Northern fur seals (*Callorhinus ursinus*) on St Paul Island, accounting for 16% (18 cases) of deaths, of these five had cervical-vaginal tears, four had malposition with the shoulders present in the cervix and four were small females that had oversized pups where the uterine wall had torn and the pup delivered into the abdominal cavity, this last cohort appearing to have uterine pathology similar to that reported in 'Kipper'.

Considering the findings against the welfare allegations the inspection team are confident that the case was an actual dystocia. However, the allegation refers to 'Kipper' having a "**breech labour**" (feet or bottom first), whereas the animal records demonstrate that the veterinarian confirmed it was "*nape presentation*" which is head-first, albeit more likely a downward displacement of the head i.e. a postural defect. This is likely a result of foetal oversize but cannot be confirmed from the details provided. Odell reports that 63% of pups are born head-first but can be equally be born tail-first and in other positions, their unique body form designed for propulsion through water also makes them, in normal circumstances, designed to easily pass during birth.

The allegation states that “*Kipper* was left bleeding and calling in pain for two full days on the sea lion island”, whilst this is difficult to confirm or refute the animal records do state she was uncomfortable. However, the allegation suggests she was left without support and that staff requests for intervention were ignored whereas the zoo veterinarian attended the day after concerns were noted on the afternoon of the 18th of June and his assessment led to the steps being taken of monitoring the case rather than intervening, the case being under veterinary supervision within approximately 12 hours after possible parturition signs being noted and, by the time of the visit, that no pup had appeared. She died the following day.

The inspection team are of the opinion that ‘Kipper’ did demonstrate signs of dystocia and that the keeping and veterinary team did believe that it was highly likely that ‘Kipper’ was showing signs consistent with attempting to giving birth. It does appear that, from the animal records, the staff and veterinarian were not aware of the normal or expected process of parturition in the species and that even a 12-hour period was excessive and intervention was indicated at an earlier stage. However, the available knowledge at the time was scarce from a medical intervention perspective, anaesthesia was possible but still in its infancy and the preferred anaesthetic agents are unlikely to have been easily available at the time, and whilst there is no records of the discussions or plans being discussed to intervene there is equally no evidence to suggest that these did not occur. Retrospective assessments of cases where the outcome is known are much easier to identify the correct steps that should have been taken during the management of a case, however based on the information available at the time, the risks of an intervention likely leading to mortality in this case, and a lack of facilities to facilitate a caesarean and aftercare make this an allegation that is not clear cut as stated.

It is the opinion of the inspection team, based on the limited information made available, that the described decisions were reasonable at the time and with the potential contemporaneous information that may have been available to the keeping and veterinary team at the time the decisions were potentially appropriate. It is also the opinion of the inspection team that the final outcome for ‘Kipper’ and the foetus would likely have been the same even if early intervention had occurred and that there was real potential for her to have suffered more due to the facility’s inability to facilitate the management of post-operative care following a caesarean in a California sea lion. It is noted though, that early intervention, even if fatal, would have stopped the 24-36 hours where she was uncomfortable and potentially in distress during the dystocia that led to her uterus rupturing.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection reports available to the inspection team raised concerns with regard to the sea lion facility in the September 2012 inspection report and praised the plans for the new facility in September 2013, with the new Sea Lion Cove opening in 2015. The facility described in 2012 was the same one where ‘Kipper’ was maintained in 2004.

Outcome of the investigation with regard to the specific case

The case was under veterinary treatment and decisions were made in the interest of 'Kipper' and the potential pup, however with hindsight the decisions were considered incorrect and if dystocia was thought to be the cause of her clinical signs prior to her death then intervention was likely to have been indicated at an earlier stage. However, intervention was limited due to technical knowledge available at the time, logistics of sourcing suitable anaesthetic agents, and lack of appropriate facility design and as such whilst a caesarean was indicated this is equally a highly technical surgical case that would have had a high likelihood of failure either at the time of anaesthesia or in the post-operative period. Whilst it is highly likely that 'Kipper' was uncomfortable, and likely in pain, the outcome was probably the best other than euthanasia at an early stage which was not an option due to the culture at the time and what appears to be the decision-making process for the senior management during this period. The fact she was swimming and even eating on the 20th of June would likely have precluded euthanasia at the time.

The inspectors recognise that there is considerable supposition with regard to the comments made above and the final assessment is formed from conjecture based on the culture and the available knowledge at the time when responding to this allegation. Such conjecture is not considered likely with more recent cases as record keeping improved and technical knowledge and access has developed substantially in the last 20 years since this case occurred. Equally, looking at the case holistically, the steps taken were in the best interests of 'Kipper' and despite the outcome, the Dublin Zoo staff did what they could with what was available to them at the time. As such the allegation is partially supported in that 'Kipper' likely did die as a result of a dystocia, however whilst earlier intervention is appropriate in these cases the reality of the facilities, contemporaneous knowledge and other critical factors at the time meant that the outcome would have been highly likely to be the same to that which occurred and as such the narrative based on current knowledge is not reflective of the management practices carried out at the time, nearly two decades earlier.

To ensure learning outcomes from such a case are recognised it is recommended that birthing strategies, including dystocia management, are drawn up (if they do not already exist) for the California sea lions to ensure timely and evidence-based interventions are taken if ever required, assuming the sea lions are still in a breeding situation.

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4.0 'HAILEY' BARINGO GIRAFFE COLLAPSED AND DIED

Date of incident:	Died 19 th November 2012
Species & identification:	Baringo giraffe (<i>Giraffa camelopardalis rothschildii</i>) Female, 19 years and 11 months Local ID 93M090
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Hailey found collapsed in the Giraffe House
- Senior management instructed to support Hailey and encourage her to stand, several attempts made
- Hailey died later that night, choking on regurgitated stomach matter
- Her inevitable death had been prolonged, the Senior Curator having the ultimate say with regard to euthanasia, not the veterinarians at this time

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

6 th January 2024	ZIMS record for 93M090, 27/01/1992 to necropsy results 14/12/2012
29 th January 2008	Irish Independent article, 'Surprise newborn giraffe dies in zoo'
20 th November 2012	Pathology report, Hailey

Summary review of the documents reviewed as part of the investigation:

Born on the 27th of November 1992 at London Zoo where she was named 'Tanni' she moved to Dublin September 1993. Her history was generally unremarkable. In March 1999 she had cuts to the top of her lip and above her right eye, the source unknown but healed well. In October 1999 she had a jaw problem which was monitored and persisted for three days only. Right fore lameness in 2005 which responded to pain relief and anti-inflammatories. 'Hailey' gave birth to a female calf on the 26th of January 2008, this calf later died, despite supportive care for 48 hours supported by staff from the veterinary college (note, the outcome was not captured in 'Hailey's' animal record, the birth weight of 32kg was approximately 45% of that expected). 'Hailey' had a second calf on the 1st of December 2009, calf did well this time. February 2010 Hailey exhibited trauma to her left eye and face, cause unknown, given analgesia and anti-inflammatories but eating well – resolved within 5 days of supportive care. May 2011 'Hailey' gave birth to her third calf, no concerns noted.

Early May 2012 noted to have lost some weight and "a bit thin", dietary changes made in the preceding year and all animals wormed regularly. On the morning of the 12th of

November 2012 'Hailey' had blood coming from her left nostril but was feeding well, a swab was taken from the nose. Veterinarian assessed the same day, plan to monitor.

On the 19th of November 'Hailey' was "...found in a collapsed state in the morning. She died later that evening despite veterinary intervention". The veterinary care was recorded as "Called in as Hailey can't stand. Inject her with steroids. Attempt to get her up but no avail. She is thin about neck and bone. Faeces perhaps a little soft. No scour. Eating well. On afternoon visit, female static. Gave 20ml dexamethasone. Spoke with VCI surgeons. Female unfortunately died". Post-mortem was carried out on the same day on site at Dublin Zoo, reported on the following day.

The post-mortem reported "Preservation was good. The animal was emaciated. An old displaced fracture of the right rostral mandible involving the two lateral incisors was identified. The adjacent incisor was displaced caudally and appeared loose within it's socket. The molar arcades appeared undulating with sharp edges and occasional ulceration of the adjacent gingival mucosa was present. Multiple diastemata packed with feed material were also identified. Main changes noted within the thorax and abdomen included endocardial ecchymoses, firm hepatic consistency (query fibrosis) and poor rumen fill.

Histopathologically hepatocytes contained pigment with stained positive for iron with Perl's Prussian Blue, the spleen was loaded with haemosiderin and also stained for iron with Perl's Prussian Blue.

A diagnosis of emaciation consequential to a distortion of the arrangement of the teeth due to a fractured mandible is indicated. An finding of haemochromatosis is also recorded. Liver iron was 65.8 mmol/kg (normal liver iron 5.4 mmol/kg - cattle)".

Findings of the investigation with regards to the specific case

- 'Hailey' was at Dublin Zoo for the majority of her life, 19 years.
- Her history was unremarkable and she had three calves, the first appearing to be premature and did not survive (the cause not reported).
- 'Hailey' had trauma to her left face in February 2010 but this was unrelated to the later reported displaced fracture.
- 'Hailey' was found on the morning of the 12th of November 2012 with blood coming from her left nostril which was not reported again in the animal records.
- 'Hailey' was found in a collapsed state on the morning of the 19th of November 2012, where she received medical treatment and veterinary support but later died.

Interpretation by the investigation team

The allegation does not consider the fractured mandible, what caused it nor the other dental pathologies noted at post-mortem. The primary concern stated in the allegation was **"I knew Hailey was dying and yet several attempts were made to get her to stand that**

day, and staff were instructed to feed her throughout the day. Hailey died that night while choking on regurgitated stomach matter. I was deeply saddened by how her inevitable death had been unnecessarily prolonged". The inspection team are of the opinion that 'Hailey' did collapse and was found at morning checks, with the veterinarian attending as soon as possible thereafter. 'Hailey' was eating throughout the day and no mention was made with regard to her suffering nor being in distress during the attempts. The mandibular fracture was not identified, or referred to in the notes made during the recovery attempts, and this is considered to have been identified at post-mortem only. Therefore, this suggests that the fracture was localised to the rostral end and was not obvious meaning that this was not factored into the decision on how to manage 'Hailey'.

The inspection team do not believe the attempts to support 'Hailey' to stand were inappropriate if she was eating. There is no mention of the decision making process at the time, nor any cut-off points where euthanasia would be indicated (e.g. not eating, moribund, etc). As none of these behaviours are captured in the animal records it is not clear whether she displayed these or not.

With regard to the comment in the protected disclosure that she "...*died that night while choking on regurgitated stomach matter*", this is common at the point or just after the death of a giraffe as the pressure from being recumbent as well as the loss of normal eructation mechanisms causes considerable fluid and rumen content to pass from the mouth orally. This may occur whilst Cheyne Stokes respirations breaths are seen and may be misconstrued as an animal choking on regurgitated matter, this is common in giraffe at the point immediately after death and the inspection team have seen this in anaesthetised animals following euthanasia. This hypothesis is supported in that there is no mention of aspirated material in the lung tissues at post-mortem which is also very common where regurgitation and aspiration results in the death of a giraffe, this being a complication of giraffe anaesthesia for instance. As such the inspection team are of the belief that at the point of death there would have been considerable discharge of rumen contents but this was unlikely to have been the cause of death in this case. The large ecchymoses on the heart described at post-mortem are more likely indicative of acute cardiac failure which is common in recumbent giraffe. Especially considering that the case management was over several hours.

The inspection team are of the opinion that there is insufficient content in the records and the events of the day to determine the prognosis and likelihood for 'Hailey' to recover and whether she was suffering or whether euthanasia was indicated at an earlier stage. Commentary is often easier with hindsight but this is not appropriate without all of the information available at the time nor the challenges of diagnosis and prognosis during the actual management of the case, both with regard to the clinical management of the case but also managing the emotional and cultural drivers that can often be added to the mix in such decisions. In this case, 'Hailey' made the decision herself. Equally there is insufficient detail to state that it was obvious 'Hailey' was dying or not, the fact that she was eating suggests that she was not at immediate risk of dying prior to the attempts to move her despite the grave prognosis. This is a very difficult call – should all recumbent giraffes be euthanased? Should attempts be made where a giraffe is bright and responsive, or should

any future welfare concerns be mitigated by making an early call without trying to support? Were decisions made for staff or management to say they had tried? Or is the reality that the management of a recumbent giraffe are often complex situations with multiple stakeholders in addition to the individual animal requiring decisions to be made regarding animal welfare, staff safety, veterinary diagnostics, staff emotions, public opinion and many other factors.

The haemochromatosis is an unusual finding and one that was only apparent at post-mortem and would have been challenging to diagnose ante-mortem as this is not a commonly diagnosed condition in giraffe. Her weight loss is likely to have been contributory to the collapse and it is considered likely that she was in negative energy balance hence collapsing. The bloods were not reported in the animal records, these if still available may provide additional information highlighting the prognostic and causal factors, although as no summary has been mentioned in the records it is possible these were unremarkable.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection reports available to the inspection team go back as far as 2006 and the incident occurred a few months after the inspection, the 2007 inspection report made no mention of any concerns with regard to the giraffe.

Outcome of the investigation with regard to the specific case

Based on the limited information provided the decision making in the early stages appeared reasonable and appropriate, the point where euthanasia was indicated was not clear nor what criteria (if any) would be applied when euthanasia was indicated and whether these criteria had been met. No comment can be made with regard to who owned the decision whether to euthanase or not as there has been no evidence to comment on this, both from Dublin Zoo nor the protected disclosure (the statement being generic). The protected disclosure does not state any concerns that 'Hailey' suffered nor does it allude to her distress, simply that her death was inevitable and was unnecessarily prolonged for which there is no evidence other than that of hindsight. There is no evidence to suggest that her welfare was compromised other than that associated with the recumbency. It is also considered likely that the complainant was not privy to the discussions or fine detail defining the steps taken in her management and that they are not aware of what was discussed. As such the inspection team believe that everything that could be done to try and support 'Hailey' was undertaken and these decisions were made in her best interest, the decision to euthanase her was taken out of the hands of the team as she died before euthanasia was actioned.

References

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- Rempert, Sós-Koroknai, Hoitsy and Sós (2022) Mandibular fractures in giraffes in European zoos, *Journal of Zoo and Wildlife Medicine*, 53(2), pp448-454
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5.0 'KAMBA' OKAPI COLIC AND ASPIRATION PNEUMONIA

Date of incident: Died 19th of December 2013

Species & identification: Okapi (*Okapia johnstoni*)
Male, 14 years and 3 months
Local ID A13M61

Allegation:

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- It was noted that 'Kamba' was reported to have been unwell a few days prior
- On morning checks it was noted that "Kamba' had a bloated abdomen and he was depressed.
- Line manager was contacted on day off and asked for Senior Curator to attend due to their concerns which was organised
- Senior curator attended and discussed case and advised 'Kamba' was under veterinary care but arranged for the vet to come in later that day to reassess the case
- Over the following days 'Kamba' deteriorated further
- The vet attempted to dart "Kamba' with antibiotics but as soon as he darted the okapi it dropped to the floor and died instantly due to his weakened state. Fluid poured from his mouth all over the floor.
- Blame was proportioned by members of the direct care team to several staff including the complainant, without any basis.

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

6th of January 2024 ZIMS record for A13M61, 05/09/1999 to necropsy results 29/01/2014

15th of January 2014 Minutes of the Animal Management Meeting

1st of January 2014 Post-mortem report for 'Kamba'

Summary review of the documents reviewed as part of the investigation:

'Kamba' arrived at Dublin Zoo, from Rotterdam Zoo, on the 11th of September 2013 along with another male okapi, 'Kitabu'. They settled in and were reported to be "eating well". They were provided with alfalfa on the 18th of November 2013. On the 24th of November it was noted that 'Kamba' was drinking a lot and steps were taken to monitor this.

On the 16th of December 2013 'Kamba' ate approximately half of his breakfast and only picked at food for the rest of the day. Only two piles of droppings were produced compared to the normal 5-6 piles overnight. On the 17th he ate very little of the AM food or haylage all day, passing only 2 piles of faeces. The vet attended and discussed the case

with Rotterdam Zoo who were contacted for advice, physical access was not possible. Similar signs were noted on the 18th of December, faecal results demonstrated no parasites were present. On the 19th of December the veterinarian was called to attend and attempted to administer butylscopolamine, a spasmolytic used in colic cases, but on darting 'Kamba' fell down and subsequently died at 1100hrs.

The post-mortem was extensive and the full notes are not reproduced here, just a summary. The findings indicated:

- 'Kamba' weighed 263kg, was in moderate body condition with adequate fat reserves
- The distal trachea and mainstem bronchi were partially obstructed with food material, with food material and green fluid present in the small airways
- There was a small volume of clear fluid in the abdominal cavity
- The rumen and reticulum were enlarged and contained approximately 20 litres of green-brown fluid material and gas, with a rumen pH of 7.5; the abomasum was distended by approximately 20 litres of green-brown fluid, as were the duodenum and the proximal 2/3 of the jejunum. There was scant mucoid material.
- The caecum and the colon contained a small amount of firm but compressible dry pelleted mucous covered faeces.
- All other tissues were unremarkable.

The immediate cause of death was considered deep aspiration of ruminal content: *"In relation to the reported clinical signs, the rumen and abomasum were both distended by a marked amount of abnormal liquid ingesta. The cause of this abnormally liquid content in the fore-stomachs was not evident grossly"*. There was no definitive cause of the abomasal and ruminal distension, consideration was given to this being abomassal atony which was supported by a high chloride concentration in the rumen, although normal values for okapi were not available. It was speculated that a dietary change may have caused alterations in the normal rumen flora and volatile fatty acid production with resulting atony and fluid influx.

Histology demonstrated little additional pathology other than cardiac necrosis, consistent with a capture myopathy type lesion which likely occurred at the time of the darting, compounded by the proposed systemic metabolic findings due to the changes in the gastrointestinal tract. There was also a multifocal glomerular necrosis, the cause unknown.

Following the initial pathological findings the dietary management of the okapi was reviewed and adjusted so that lucerne was to be sourced and fed to the okapi. This occurred prior to the final post-mortem report being completed. The other okapi, despite being managed in the same manner was unaffected.

Findings of the investigation with regards to the specific case

- 'Kamba' arrived on the 11th of September 2013 with one other male okapi from Rotterdam Zoo.
- His diet was altered on the 18th of November 2013 with the inclusion of haylage.

- 'Kamba; was noted to drink more from the 24th of November 2013
- His appetite and faecal output reduced considerably on the 16th of December 2013
- The veterinarian attended on the 17th of December to review 'Kamba'/'
- The appetite and faecal reduction continued for a further two days, with the veterinarian attending on the 19th of December where the okapi's condition deteriorated and he attempted to administer a spasmolytic, 'Kamba' died upon darting.
- Post-mortem examination identified a number of gross and histopathological findings that led to the acute death which were primarily aspiration pneumonia and cardiac necrosis, the former being speculated to be a result of abomassal atony potentially caused by dietary change moving from Rotterdam Zoo to Dublin Zoo.
- The second male okapi was managed in the same manner but was unaffected.

Interpretation by the investigation team

'Kamba' had been noted to increase drinking 26 days prior to his death but whether this was consistent with the subsequent death is not clear. The drinking was noted for three days and no further mention was made.

The clinical signs of reduced appetite and faecal production were first noted on the 16th of December and were monitored, with the veterinarian asked to attend on the 17th of December (the initial assessment reported in the allegation) and discussions had with Rotterdam Zoo. 'Kamba's' condition deteriorated and the vet attended on the 19th where he died.

It is not clear as to what the allegation is primarily concerned about. The okapi was noted to be have a reduced appetite and reduced faecal output which potentially should have triggered an assessment on the 16th of December but it is not clear how this was communicated and whether it was considered an issue on the first day. On day two his condition had deteriorated and the veterinarian was called who assessed the case and discussed it with Rotterdam Zoo on the 17th of December. The notes are limited and it is not clear what the case management plan was from the 17th to the 19th of December but the condition continued in the same manner with the vet returning on the 19th due to the further deterioration. The vet intervened and in the process the okapi aspirated the excessive rumen fluid leading to its rapid death.

A small point but the allegation states that the vet "...**attempted to dart Kamba with antibiotics**" where it was in fact a spasmolytic, commonly deployed in the management of abdominal discomfort.

The main concerns noted in the allegation are not welfare complaints but simply human resources complaints due to the manner in which the individual interacted with senior management and other colleagues due to conversations with regard to the cause of death being blamed on several individuals. There is no welfare allegation here, the animal was noted as being ill and Dublin Zoo management actioned veterinary assessment and the animal was under veterinary care at the time of death.

The death not being a due to having “...*died instantly due to his weakened state*” but due to inhalation of a large volume of ruminal fluid and food material, effectively he died instantly due to drowning in his own gastrointestinal contents compounded by acute cardiac necrosis. This was, as reported in the allegation, was instantaneous and there would have been little additional animal welfare compromise.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection report carried out on the 10th of September 2014 makes no comments specifically with regard to this case nor any welfare concerns. This report predates the current Irish Standards of Modern Zoo Practice (2016) and the current zoo inspection report forms and so information was limited.

The zoo inspection report of the 18th of September 2013, which predates the death by three months states that, “The addition of okapis is welcome and the new okapi habitat is very appropriate and well planned”. No concerns were raised by the separate inspection team with regard to the facilities nor the proposed management regime.

Outcome of the investigation with regard to the specific case

The main concerns noted in the allegation are not welfare complaints but simply human resources complaints due to the manner in which the individual interacted with senior management and other colleagues due to conversations with regard to the cause of death being blamed on several individuals. There is no welfare allegation here, the animal was noted as being ill and Dublin Zoo management actioned veterinary assessment and the animal was under veterinary care at the time of death.

There are no current concerns with regard to dietary management nor the importation of animals and the transition to new diets within the current systems deployed at Dublin Zoo.

References

- AZA (2004) Husbandry Guidelines for the okapi SSP, pp48
- Claus, Kienzle, and Hatt (2003) Feeding practice in captive wild ruminants: peculiarities in the nutrition of browsers/concentrate selectors and intermediate feeders: A review, *In Zoo Animal Nutrition II*, pp27-52
- Claus, Hummel, Lorenz and Hofmann (2006) The allocation of a ruminant feeding type to the okapi on the basis of morphological parameters, Zurich Open Repository and Archive, pp1-21

6.0 'NO NAME' BARINGO GIRAFFE CALF KILLED BY DAM

Date of incident:	Died 21 st of May 2013
Species & identification:	Baringo giraffe (<i>Giraffa camelopardalis rothschildi</i>) Female, 0 days Local ID A13M52
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Cocio was a first-time pregnant female giraffe
- In the days prior to her suspected calving the Senior Curator insisted she be separated from the herd and moved into a side stall against the wishes of the keepers due to her nervous disposition
- Cocio did not settle in the new stall
- The calf was born during the night and was immediately killed by the mother, this was captured on CCTV
- The keeper disagreed with the Senior Curator and told him so
- The next time Cocio birthed a calf she was left in with the herd and everything went well, successfully rearing a male calf

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

6 th January 2024	ZIMS record for A13M52, 21/05/2013 ('Cocio's calf')
6 th January 2024	ZIMS record for A11M50, 04/03/2009 to necropsy results 13/10/2015 ('Cocio')
21 st May 2013	Post-mortem report for A13M52 ('Cocio's calf')
19 th June 2013	Minutes of the Animal Management Meeting

Summary review of the documents reviewed as part of the investigation:

'Cocio' was born on the 4th of March 2009 at Aalborg Zoo. 'Cocio' arrived on the 30th August 2011, which was uneventful other than she had a draining abscess from darting as part of the transport management that persisted and was managed until July 2012.

A faecal sample was collected February 2013 for pregnancy testing, the results were not reported. 'Cocio' was separated overnight on the 20th and 21st of March. On the 20th of May she was out with the herd. Note made on 'Cocio's' animal record simply states on the 23rd of May 2013 "*Cocio – lost calf. Seems well*".

'Cocio' went on to have a general anaesthetic on the 20th June 2013 for foot care which was desperately needed. 'Cocio' had a second calf on the 12th of November 2014, a male. A year later on the 12th of October 2015 'Cocio' was found dead in the Giraffe House.

The calf 'no name' has its own ZIMS record which states that the date of death was the 21st of May 2013 which is not recorded on the records for 'Cocio', with the only comment being from the vet on the 23rd of May. The inspection team assume the 21st of May is the correct date and it was simply not recorded on 'Cocio's' records.

The post-mortem report demonstrates the cause of death was *"massive abdominal haemorrhage due to liver rupture was the cause of death. Trauma is the likely cause of this lesion"*. The sex of the calf was not recorded on the post-mortem report but was on the individual animal's record as a female.

The Animal Management Meeting minutes from the 19th of June 2013 state that *"Cocio gave birth to a healthy female calf which she unfortunately killed. She has come back into season"*.

'Cocio' did go on to have a male calf on the 12th of November 2014 which she reared. She later died in October 2015 aged 6 years and 7 months old.

Findings of the investigation with regards to the specific case

- 'Cocio' gave birth to her first calf, a female on the 21st of May 2013 and the records note that it was lost.
- The post-mortem report describes trauma led to massive abdominal haemorrhage as the cause of death
- The trauma was caused by 'Cocio'.

Interpretation by the investigation team

The limited animal records support the fact that 'Cocio' was a primiparous female giraffe that gave birth to a female calf which she subsequently killed. There is no mention of possible reasons why nor any records indicating possible management options for 'Cocio'. She went on to produce a male calf with no issues.

The allegation description of the events of the management, birth and subsequent death of the calf appear reasonable but are not supported nor refuted by the records, indeed there is very little recorded including the actual birth in 'Cocio's' record. The inspection team believe the narrative regarding the events as described in the allegation.

The area in the allegation that are impossible to assess from the records are:

- The decision for 'Cocio' to be separated at night peri-parturition being in conflict with the keepers opinions
- That the outcome would have been different if 'Cocio' had not been separated from the group

Siciliano-Martina (2020) has published a comprehensive review of maternal rejection in giraffes in North American zoos that looked at results from 36 institutions and 12 animals that were maternally rejected. This removed a number of misconceptions with regard to giraffe maternal-rejection and demonstrated that dystocia, primipary and inappropriate maternal care are not factors that lead to maternal rejection. However, she did note that human and the presence of other giraffe were the most common indicated factors where rejection occurred. Daag (2014) notes that wild giraffe often remove themselves from the herd to give birth for a few days, whereas Banks (2013) recommends maintaining the imminent parturition giraffe within the herd. The Siciliano-Martina (2020) recorded a total of 67 calves of which 21(31%) experienced maternal rejection or separation, of these 12 (18%) were rejected by the mothers. First time mums represented 4 of the 12 and went on to rear subsequent calves, as in this case, but the majority of cases nursed one of their previous calves but rejected others. Moving an animal into a new stall before parturition was considered not to have an impact on a calf being rejected, as 11 out of the 12 females remained in the same location but still went on to reject their calf. Oddly, the survey also identified that two thirds of the rejected calves were females, as in this case. Jolly (2003), Daag (2014) and Siciliano-Martina (2020) all state that where rejection occurs this can vary from dismissal to aggressive targeted attacks as in this case. Siciliano-Martina (2020) identified that giraffe living in herds or creche rearing situations where they see other giraffe calves being born and cared for have the lowest levels of rejection of calves. This is interesting as Dublin Zoo have a large and successful breeding herd but 'Cocio' was only two and a half years old when she left her original zoo and had only spent a further two and a half years at Dublin Zoo prior to the birth of her first calf. It is possible that there were only a small number of calves born at this time, or possibly none at all and so there was a level of inexperience for her. This case, despite being over 10 years old, is consistent with captive giraffe management challenges seen in many other international collections. Figueroa et al (2024) reviewed mortality reports of 1,024 giraffe over a period of almost 30 years (1991-2020) and identified that the most common cause of giraffe mortality was neonatal mortality (27.7% of all deaths), followed by trauma (25.2%). Of the neonatal mortalities the causes were listed as trauma (whether maternal, conspecific or interspecific), maternal neglect, congenital disease, umbilical herniation and others. Dublin Zoo is noted to have successfully reared a number of giraffe calves and the neonatal mortality rate is much lower than the global average.

The inspection team, taking into account the recent published literature, are of the opinion that the allegation stating the outcome of separating 'Cocio' may have led to her becoming distressed leading to the subsequent response to the new calf, OR it equally may be completely unrelated and the distress may have been due to her inexperience as a first time mother and the subjective statement found in the allegation cannot be supported by the evidence found in similar reported cases. As the allegation states, the outcome may have been better if the keeper's opinions had been listened to but equally it may have led to the same outcome and the death of the calf. The event is upsetting, especially as it was a first time mother. There is no evidence to suggest that there would have been a different outcome and the recommendations to mix in a herd situation were only published a month after the death of the calf, but the inspection team note that many other calves have been

born successfully with the collections separating the giraffe from the main herd, as was practiced at Dublin Zoo at the time.

Similar to the previous case the inspection team agree that there was a distressing case which resulted in the death of an animal, however this case was not due to the failings of the senior animal care team nor was it due to the actions or inaction of the staff. As per the previous case, in this allegation 50% of the allegation is with regard to the relationship between the individual making the allegation and the Senior Manager, which appears to be a recurrent issue in the allegations rather than actual failures to act leading to primary welfare issues that compromised the animal.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection report carried out on the 10th of September 2014 makes no comments specifically with regard to this case nor any welfare concerns. This report predates the current Irish Standards of Modern Zoo Practice (2016) and the current zoo inspection report forms and so information was limited.

Outcome of the investigation with regard to the specific case

Rejection by giraffe dams is not uncommon, with one paper reporting 18% of all births being rejected by the mother. Management techniques have changed as have recommendations in the last 10 years on how giraffes should be managed and this includes reproductive and peri-parturient knowledge, much of which was published after the death of this calf. The steps taken, based on the information provided, appear to be reasonable for the time and no welfare issues are noted from the actions taken. Current management regimes for the giraffe have evolved and so has Dublin Zoo in response to the changes recommended.

The complaint consists largely in part with concerns with regard to the behaviour and management style of the previous Senior Curator who left the business in 2018. As this person is unavailable to provide comment and no longer has any influence or decision making powers at the zoo the inspection team are of the belief that there is no case to action nearly 11 years after the event. If the individual was present clarification could be sought on the points not included in the animal records but the animal welfare outcome is unlikely to change as the events described are not uncommon and are not unavoidable as suggested in the allegation. Based on contemporaneous knowledge the decision making process was considered valid and the allegation was found to be unfounded.

References

- Banks (2013) Standing tall for Rothschild's giraffe (*Giraffa camelopardalis rothschildi*): Conservation breeding of Rothschild's giraffe over the last nine years at Woburn Safari Park (2003 – 2012), *International Zoo News*, 60(1), No.398, pp21-28
- Bercovitch, Bashaw, Penny, and Rieches (2004) Maternal investment in captive giraffes, *Journal of Mammalogy*, 85(3), pp428-431

- Daag (2014) Giraffe: Biology, Behaviour and Conservation, Cambridge University Press, pp247
- Figueroa, Dadone, Locklear, and Johnston (2024) A 30 year (1991-2020) retrospective mortality review of giraffids (*Giraffa sp.* and *Okapi johnstoni*) in managed care, Journal of Zoo and Wildlife Medicine, 55(1), pp13-21
- Jolly (2003) Giraffe Husbandry Manual, Australasian Zoo Regional Association of Zoological Parks and Aquaria, pp33
- Siciliano-Martina (2020) Multi-institutional survey of causes of maternal rejection in giraffes in North American zoos, International Year Book, 54, pp191-201

7.0 'BLAKE' GRANT'S ZEBRA DIED FROM CAPTURE MYOPATHY

Date of incident:	Died 16 th of May 2014
Species & identification:	Grant's zebra (<i>Equus quagga boehmi</i>) Male, 10 years and 7 months Local ID A13M28
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Transferred from Belfast Zoo and soon after developed capture myopathy
- His condition deteriorated over several months, it was requested that he be euthanased but this did not occur
- Blake was found collapsed in a distressed state, he was euthanased by the Operations Manager at the time with the use of a free bullet

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

7 th of January 2024	ZIMS record for A13M28, 04/10/2003 to necropsy results 30/06/2014
19 th June 2013	Minutes of the Animal Management Meeting

Summary review of the documents reviewed as part of the investigation:

'Blake' was born on the 4th of October 2003 at Fota Wildlife Park. He was transferred to Belfast Zoo in 2005(?) where he remained until the 3rd of May 2013 when he was transported to Dublin Zoo along with one other male.

On the 6th of May 2013 'Blake' was very subdued and given anti-inflammatories, fluids, vitamin E and curragh carron oil which is consistent with supportive treatment for capture myopathy although this is not confirmed as there are no veterinary comments with regard to an actual diagnosis in the record at this time.

No further comment is made until the 15th of May 2013 where it was commented that "*Blake is showing some muscle wastage on his hind quarters and neck*". The vet assessed 'Blake' the following day. 'Blake' was given a further dose of meloxicam and curragh carron oil on the 17th of May as he was "*Very stiff and lame on front hooves. Very obvious muscle wastage. Vet to be contacted*". Vet attended the same day and started oral anti-inflammatories and capture myopathy mentioned for the first time. By the 19th of May 'Blake' was much brighter and not as lame, with no lameness reported on the 20th of May. On the 22nd of May 'Blake' was reported as "*Appetite still very good and seems bright. Moving well. No improvement in muscle wastage.*" Regular vet checks occurred regularly with the final notes on treatment made on the 5th of June.

On the 17th of June the vet assessed 'Blake' and advised he can go out onto the main paddock. On the 29th of June he was noted to have hair loss and a wound on his back. This developed into sores across the body and considering the high likelihood of the previous capture myopathy, anaesthesia for a clinical work-up was stated to be unsafe. By the 7th of July 'Blake' was showing signs of improvement. No further mention made of 'Blake' other than general behavioural and introduction with new zebra.

On the 9th of February 2014 it was noted the 'Blake' had lost some weight. Supplementary feed was provided and subsequent faecal parasitology identified strongyle ova as well as *Parascaris equorum* which were treated with fenbendazole (group).

'Blake' reported that his "...back legs look very sore" on the 9th of May 2014. On the 12th he was reported as being unwell. A *Parascaris equorum* adult worm was found in the house a day later and it was hypothesised on the 15th of May 2014 that a parasite burden had contributed to his loss of condition. 'Blake' was found on the morning of the 16th of May 2014 lying down and weak, it was reported that the veterinarian euthanased him.

The post-mortem report identified:

- Severe subacute haemorrhagic cystitis with severe suppurative and fibronecrotising vasculitis
- Bilateral hydronephroses
- Haemorrhage proximal urethra with severe subacute suppurative and fibronecrotising vasculitis
- Mild interstitial pneumonia

In summary, the report stated that "*The gross and histopathological findings indicate a blockage of the proximal urethra associated with a severe subacute suppurative fibronecrotising vasculitis of the bladder and urethra (likely of bacterial origin) which resulted in the severe cystitis and dilated ureters*". There was no mention of capture myopathy nor pathology typically associated with capture myopathy, nor was there mention of the animal having been shot as a method of euthanasia (but this cannot be ruled out).

Findings of the investigation with regards to the specific case

- 'Blake' arrived from Belfast Zoo on the 3rd of May 2013 at Dublin Zoo
- Soon after he arrived on the 6th of May 2013 'Blake' developed clinical signs that were considered to be consistent with capture myopathy which was supportively treated and no further comment made after the 5th of June 2013
- There was an endoparasite infection in the zebra, with strongyles and *Parascaris equorum* found and treated in 2013 to 2014. This was thought to have led to weight loss noted in 'Blake'
- On the 9th of May 2014 he was noted to be sore on his back legs and unwell on the 10th of May. Faecal revealed on the 15th of May that there was a moderate *Parascaris equorum* burden and it was advised that he be monitored.

- 'Blake' was found on the morning of the 16th lying down and was euthanased on welfare grounds, the method not clear but was thought likely to be through the use of firearms.
- Post-mortem revealed major urinary tract infection and functional blockage compromising kidney function which would have accounted for the clinical signs noted.
- No mention made of capture myopathy for the 11 months prior to his death.

Interpretation by the investigation team

The allegation implies that the initial presumptive diagnosis of capture myopathy led to a prolonged deterioration in 'Blake' that led to staff requesting that he be euthanased which did not occur until he was found collapsed and distressed on the morning of the 16th of May 2014 (reported as estimated to have been 2015). The inspection team do not agree with the narrative described.

The allegation states "***After transferring from Belfast Zoo, Blake developed capture myopathy causing him muscle degeneration and weight loss***", this was likely to be true and a presumptive diagnosis was made soon after he arrived in May 2013 which was treated with supportive therapy and appears to have resolved by June 2013. Capture myopathy can present as acute mortality to chronic renal changes that eventually lead to renal compromise and death which usually occurs within 6 months at the longest. In this case the supportive treatment appears to have resolved the clinical signs and no mention of chronic capture myopathy changes were made at histopathological post-mortem. As such this was considered to have been resolved within 6 weeks of being suspected.

The allegation goes on to state "***In the months to follow, his condition deteriorated***", this is a poor reflection of the events in that the capture myopathy was resolved within 6 weeks and no other mention of loss of condition was mentioned until February 2014, some 8 months later. This weight loss being attributed to endoparasite infection in the herd.

The allegation states "***...asked on several occasions for 'Blake' to be euthanized because he was suffering. This did not happen***". There is no mention of his being ill or requiring veterinary treatment other than that related to the endoparasitism during the period over winter into spring. There was no record of clinical signs indicative of his need to be euthanased and to do so for endoparasitism was not considered appropriate as it can be managed with anthelmintics (wormers) and nutritional support that was provided during this time.

The final phase of sickness appeared clinically on the 9th of May 2014, a year after he arrived, and he was euthanased on the 16th of May 2014 due to a subacute obstruction of his ureters which would have rapidly led to his death if no intervention had occurred. This was not an avoidable event and was a result of an undiagnosed urinary tract infection which was not clinically suspected nor apparent on retrospective review of the animal records.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection report carried out on the 10th of September 2014 makes no comments specifically with regard to this case nor any welfare concerns. This report predates the current Irish Standards of Modern Zoo Practice (2016) and the current zoo inspection report forms and so information was limited.

Outcome of the investigation with regard to the specific case

The allegation has confused a number of elements of this case and whilst it contains factual elements (source of the animal, initial possible diagnosis of capture myopathy), the whole allegation failed to recollect the timeline of events (almost a year, not months), the parasitism elements of weight loss indicated during this time which was treated (not mentioned), the continual veterinary care and case review (not mentioned), and the lack of any clinical signs indicating the need for euthanasia until possibly the very last period which was 7 days at worst (not a period of weeks as alleged) which led to 'Blake's' death due to a suspected bacterial urinary tract infection and blockage which led to renal failure which would account for the clinical signs noted (actual cause of death not mentioned in the allegation).

No evidence has been identified that 'Blake' suffered except the likelihood at the end when the subacute infection led to the clinical signs noted and steps taken to end that suffering. In reality, with acute renal failure cognition is often impaired and as such whilst he was clinically disorientated it is a moot point if he was even aware at the end. Eitherway, euthanasia was not debated and he was humanely despatched immediately when he was found collapsed.

Allegation considered unfounded and no further action required.

References

- None

8.0 'ROISIN' KERRY COW AGITATED AND UNABLE TO SUCKLE CALF

Date of incident: Incident reported in allegation as 2016
Inspection team suspect April 2018

Species & identification: Kerry cow (*Bos taurus*)
Female, 4 years and 11 months
Local ID A18M18

Allegation:

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Kerry cow had calved the previous day was found in the stall agitated and the calf lying quietly in the corner
- Rang [REDACTED] who agreed to call vet
- On arrival the vet noted that the milk caps had not detached from the teats, after these were removed the calf was observed suckling and the cow was more relaxed
- The following day [REDACTED] [REDACTED] reprimanded the member of staff for not calling him with regard to the concerns
- The member of staff spoke to the vet and was advised that they had done the right thing otherwise the calf was at risk of becoming dehydrated and being denied antibodies from the colostrum. In addition the dam was in discomfort and may have developed mastitis.

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

8 th January 2024	ZIMS note retrieval report for A18M18, 06/04/2018 to 09/04/2018 (Kerry cow, dam)
8 th January 2024	ZIMS note retrieval report for A18M22, 06/04/2018 to 09/04/2018 (Kerry cow, calf)
8 th January 2024	ZIMS note retrieval report for A15M33, 09/10/2015 to 06/02/2016 (Charolais, dam)
8 th January 2024	ZIMS note retrieval report for A15M50, 25/10/2015 to 24/01/2016 (British Friesian, dam)
8 th January 2024	ZIMS note retrieval report for A16M01, 24/01/2016 to 29/01/2016 (British Friesian, calf)
8 th January 2024	ZIMS Medical Clinical Note detail A18M18, dated 07/04/18

Summary review of the documents reviewed as part of the investigation:

The inspection team were unable to identify a Kerry cow on the Family Farm in 2016 as reported in the allegation as Kerry cows only arrived at Dublin Zoo in 2018 with the arrival of 'Roisin' on the 14th of March 2018 who was on loan for the season and gave birth to a

calf on the 6th of April 2018. 'Roisin' was returned to the owner on the 14th of November 2018 with the calf.

As part of the document review the assessment of all cows in 2015 that may meet the descriptions in the allegation were assessed and the following cows were identified:

- Charolais cow, A15M33, 4 years and 11 months, whom had teat sealers to dry her up in October 2015 but did not have a calf until 6th of February 2016 with no issues noted.
- British Friesian cow, A15M50, 4 years and 11 months, who was still producing milk and was milked off with dry cow re-inserted in October 2015. 'Dixie' had a female calf on the 24th of January 2016 and this was hand reared for four days before it was returned to the owner. No issues noted.
- Annual stock records demonstrate that the first Kerry cow listed was brought in in 2018 and this gave birth to a female calf, leaving to be returned to the owner later that year. A Kerry cow returned in 2019 and appears to have been permanently retained with no additional calves born in 2019, 2020, nor 2021.
- As such, it is believed that the 2018 Kerry cow 'Roisin' and her calf are the animals being referred to in the 2023 allegation.

The note retrieval report for the Kerry cow A18M18 reports that a female calf was born on the 6th of April 2018. The calf was reported to be seen to suckle on the 7th of April but not after that by persons on section. The cow had full teats and no placenta had been passed, no mention of attempting to milk the teats was reported. The vet attended and in her notes reports that the calf was *"Very active and running around. Keepers are unsure he took colostrum although they have seen him drinking. Mum is very anxious and would not hesitate to charge. T- 37.5, mm pink, strong suction reflex, some meconium still need to be passed but no bloating or abdominal discomfort. Umbilicus dry and smooth. HR and lungs auscultated normal TRC <2s. A: healthy calf. PLAN: monitor drinking habit"* (NOTE: calf was female).

The animal record, dated the 8th of April 2018 states the vet examined the Kerry cow (note this is thought to still be the 7th of April and incorrectly listed on ZIMS as the birth date and the medical records for the 7th match these actions as does the record for the calf). The vet is reported to have said that *"her vagina, temperature and ruminant (note: presumed rumination) were fine. Her teeth were also examined and the 2 teeth on the right were plugged/blocked (Note: it is believed this should read teats). All teats milked and plugged ones unblocked"*. Kerry calf was seen suckling on the left side of the cow with the right side very full on the 9th of April and no mention until the 21st of April where the calf was suckling on the right teats now. Report ends.

Findings of the investigation with regards to the specific case

- Events appear to have occurred in 2018, not 2016 as reported
- The calf was born on the 7th of April, the vet attending at the request of the keeper in charge and the duty manager as it was reported as lying quietly in the corner and the

dam was agitated. The vet confirmed both calf and cow were normal, healthy animals and that two of the teats were blocked but these were easily expressed and all four teats were working well.

- [REDACTED], a day later chastised the member of staff for “making a fuss over the cow”

Interpretation by the investigation team

The inspection team are of the opinion that the Kerry cow incident was simply down to a lack of experience of the keeper in charge of the section and that they failed to identify (i) a normal, healthy calf that was not showing signs of dehydration or failure to suckle; (ii) a failure to assess the teats and attempt to demonstrate if the cow’s milk was down; and (iii) appropriate communication with other members of the team, calling to a team leader working on a section that does not work with the farm cattle.

The allegation states that “...**the vet noted that the milk caps had not detached from the cow’s teats**”, where in actual fact only two were blocked and these were easily hand milked out, this likely being indicative that the calf had only suckled on one side and not yet the other. The allegation implying that all of the teats were blocked which was not the case. The subsequent allegation states that “**After she (the vet) removed the caps, the calf was observed suckling milk and the cow was much more relaxed**”, none of this is mentioned in the notes, in fact the notes state only one side was blocked and the behaviour of the cow was of that of a protective mother.

The rest of the allegation is with regard to [REDACTED] reported to dress down the member of staff for wasting everyone’s time. Whether this was correct or not is an HR issue and not one of animal welfare. The comments with regard to the second vet saying that the member of staff had done the right thing is challenging to comment on as if the narrative was discussed as per that in the allegation then it is possible the vet would be supportive, however the records present a very different story and one where there was no risk to the calf as demonstrated in the first vet’s notes.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection process would not have picked up on this as there is not a potential welfare case to review.

Outcome of the investigation with regard to the specific case

This allegation is not, and was not an animal welfare case, it is a human resources case between the member of staff and the line manager. Based on the records supplied there was never a demonstrable welfare risk other than an inexperienced keeper demonstrating their lack of knowledge to be able to assess a new-born bovid and her dam.

References

- None

9.0 'NO NAME' EASTERN BONGO CALF DYSTOCIA

Date of incident:	Incident estimated 2017 Inspection team suspect it was 13 th of August 2013
Species & identification:	Eastern bongo (<i>Tragelaphus eurycerus isaaci</i>) Female, 8 years and 9 months at time of the incident Local ID A4M033
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Estimated 2017
- Noted on morning inspection that 'Kimba' was in labour, kept back in night stall and made as comfortable as possible
- Later inspections noted to be agitated and making no progress, requested [REDACTED] if could get vet but informed 'relax and she was ok'
- Keeper rang [REDACTED] several times in the morning as felt something not right and eventually called the vet in
- Vet determined that 'Kimba' needed an emergency caesarean section otherwise we would lose her and the calf
- 'Kimba' survived, but unfortunately the calf did not
- Keeper believes that if they had acted sooner the calf would have had a better chance of surviving and 'Kimba' would not have had to endure prolonged suffering all that day

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

7 th of January 2024	ZIMS record for A4M033, 26/11/2004 to necropsy results 29/01/2019 (Kimba)
7 th of January 2024	ZIMS record for A13M59, 13/08/2013 to necropsy results 23/01/2014 (Kimba calf)
7 th of January 2024	A4M033 Medical History Report for Clinical notes, ZIMS
1 st of October 2018	Minutes of the Animal Management Meeting

Summary review of the documents reviewed as part of the investigation:

'Kimba' was born on the 26th of November 2004 at Dublin Zoo. Her history was generally unremarkable until her death in August 2018. She had two calves, one female calf on the 8th of January 2012 and a second, born via caesarean section on the 13th of August 2013. No calves were reported to have been born in the period September 2013 to her death in 2018. The inspection team believe the incident referred to occurred in August 2013 not in 2017 as per the allegation. The only other major event was an umbilical hernia repair in 2005.

On the 5th of August 2013 'Kimba' was noted to have a very swollen behind today and her teats were much bigger. On the morning of the 13th of August (note: records state 12th but birth records for calf state 13th, so retained 13th as date of the events) 'Kimba' was reported as being *"subdued this morning - looking very heavy"*. The vet states *"Bongo – dystocia. Call in afternoon – she is resting. Contact vet college and put emergency team on notice. Revisit in evening. Static. Sedate and hold cow. She has a torsion of the uterus. Caesarean section under local block – betamox, oxytocin, metacam"*.

The morning after the records state that the male calf was delivered successfully but has splayed legs. Tube fed colostrum and given antibiotic cover. 'Kimba' bonding with the calf well. Antibiosis was continued post operatively as concerns regarding retained placenta. The calf slowly deteriorated over the next three days and was taken to the vet school on the 16th of August. Further deterioration and eventually the calf was euthanased on the 19th of August 2013, aged 6 days old.

The post-mortem identified that the bongo calf had a number of congenital defects present:

- Bilateral traumatic hip dislocation, ruptured ligaments of the femoral head
- Patent ductus arteriosus of the heart
- Atrial septal defect of the heart (patent foramen ovale)
- Multifocal necrosuppurative pneumonia

The report summarised as *"Grossly this young bongo had a patent ductus arteriosus and atrial septal defect as well as bilateral hip dislocation. Hip dislocation is often reported in captive bongos. There was associated marked periarticular muscle damage. The marked multifocal pneumonia may have resulted from a prolonged period of recumbency. No infectious disease aetiology was noted on histology"*.

Findings of the investigation with regards to the specific case

- 'Kimba' was noted to have started labour on the 13th of August 2013
- This had not progressed over the day and sedation identified a uterine torsion with a caesarean section carried out successfully delivering both calf and mum
- The mum recovered quickly from the surgery but required antibiotics due to concerns of a retained placenta
- The calf fed well but was unable to stand having splayed legs, the male slowly deteriorated and went to the vet school where it was eventually euthanased 6 days after birth
- At post-mortem it had two congenital heart defects and bilateral traumatic hip dislocations, the later likely from resuscitation methods employed at the caesarean section

Interpretation by the investigation team

The initial steps from finding 'Kimba' in labour to calling the veterinarian are as expected, watching and assessing but giving her time to deliver the calf. The veterinarian assessed and planned to revisit later that evening to see at what stage she was at. The allegation stated that "█ **eventually agreed to get the vet in. The vet determined that Kimba required an emergency caesarean section**", however this is a contracted version of the events, with the veterinarian attending in the afternoon and delaying any intervention unless needed later on and discussing the case with surgeons at the veterinary school in case they were needed. It was not a delay in taking action that led to a delay in the surgery being actioned but a planned review of the case allowing the animal the chance to deliver the calf as would normally be expected.

The allegation infers that the calf did not survive the Caesarean section when it states "**The vet determined that Kimba required an emergency caesarean section. Otherwise, we would lose her and the calf. Our vet, ...lists staff members...stayed into the night to save Kimba. She survived, but unfortunately her calf did not**", where in fact the calf was delivered successfully but was euthanased 6 days after delivery due to traumatic hip dislocation likely due to resuscitation attempts during surgery.

Finally, the allegation states that "**I believe that if my concerns on that day had been acted on sooner, the calf would have had a much better chance of surviving, and Kimba would not have had to endure prolonged suffering all day**". The post-mortem clearly shows that the calf had two significant congenital heart defects and was therefore unlikely to lead a normal life. The veterinarian assessed 'Kimba' during the day and decided it was clinically appropriate to leave her to see if she passed the calf herself, returning some hours later. No emergency intervention was carried out immediately and so the allegation is not consistent with the decision making processes on the day of the surgery.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection report carried out on the 10th of September 2014 makes no comments specifically with regard to this case nor any welfare concerns. This report predates the current Irish Standards of Modern Zoo Practice (2016) and the current zoo inspection report forms and so information was limited.

Outcome of the investigation with regard to the specific case

The allegation narrative is at odds with the actual events of the day in that the bongo 'Kimba' was allowed time to deliver the calf as assessed by the Team leader and the veterinarian later in the day with the caesarean section actioned in the evening. There was no delay through not actioning the request of the keeper but a planned response to what may have been a normal birth process. Once identified that this was a uterine torsion the surgical response was successfully deployed and delivered both mum and calf on the day. The calf later being euthanased due to the traumatic hip dislocation which led to the finding of the severe congenital heart defects which compromised the calf before it was even born.

Similar to the previous cases in this allegation review the allegation is primarily one of relationships between the person making or witnessing the events in the allegation with others at the time of the event who appear on the whole to have made rational and appropriate decisions made on the available evidence at the time. No further action recommended in this case.

References

- Bush, Montali, Gray, and Neeley (1973) Cesarean Section in a bongo antelope, JAVMA, September 15, pp552-553

10.0 'TROUBLE' OSTRICH COPULATION FRACTURE LEFT UNTREATED

**PREVIOUS CASE REVIEWED FROM 2022 SPECIAL INSPECTION REPORT
23.0 'Trouble', ostrich copulation fractured pelvis left untreated**

Date of incident: Incident between 2017 to 2018

Species & identification: Ostrich (*Struthio camelus*), female
7 years and 3 months
Local ID A13B08

Allegation:

Journalist 01 reporting on whistleblower(s) comments: "Between 2017 and 2018, an Ostrich mated with a large male who was too heavy for her and broke her pelvis. She was left untreated for approximately 8 months. She was found dead in her pen. Why was she left for so long with a broken pelvis, and what investigations took place into this animal's death and what were the zoo's findings?"

Origin of the allegation: Journalist 01, 17th August 2022 (c/o Dublin Zoo)

Documents reviewed as part of the investigation:

2017 23rd November ZIMS Animal Record 17/04/12
Radiographs taken

Summary review of the documents reviewed as part of the investigation:

Ostrich group history but spread across the individual animals assessed from 17th April 2012 to 23rd November 2017, the day this reported ostrich was found dead. There is a lot of history as it reflects the whole herd but the salient points to this case include:

- Microchipped in left thigh
- Transported in 2013 to Dublin Zoo
- Introduced into the Africa habitat July 2013
- Scimitar horned oryx aggressively chasing the young birds November 2013 but settled down relatively quickly
- On and off lameness issues over the years but otherwise little else. Mostly treated with analgesia.
- Blood in the ostrich pen 19th January 201 but due to a pulled blood feather which soon resolved.
- One ostrich coughed up green fluid on the 17th February 2017, vet assessed (no more notes on this case).
- One ostrich leg clicking when walking reported 23rd August 2017. Repeatedly checked by vet and given pain relief and antibiotics. Continued to monitor response to analgesia which worked well initially but not improving as expected, general anaesthesia assessment and radiographs undertaken on the 14th September 2017 – identified old fractured pelvis that had healed and new fracture which was also healing well. Named

'Trouble' and microchipped 4995-A13B08. Plan was cage rest for 6 weeks with supportive care.

- By the 6th October 'Trouble' appears to have swollen joints, hand injecting analgesia to support. Supportive care with hand feeding slurry and water given as reluctant to move. Eventually let out on to the yards and consideration discussed re repeat radiographs to assess the healing of the pelvis.
- On the 2nd November 'Trouble' was noted to not be doing well, her breathing was laboured and she was not feeding and lying down all day. She also had green mucous coming from her mouth. She was given an antibiotic injection and pain relief with a planned CT scan booked for the following Monday (6th). She was found dead in her pen the next morning and taken to UCD for post-mortem.

The post-mortem report indicated a diffuse fungal pneumonia and air sacculitis, which was cultured as *Aspergillus fumigatus*. The cause of death was severe systemic mycosis due to aspergillosis. In addition, there was marked degenerative joint disease of the hocks and an incidental finding of arteriosclerosis. No mention was made with respect to the fractured pelvis.

Findings of the investigation with regards to the specific case

- 'Trouble' the ostrich noted to have clicking gait on the 23rd August 2017.
- She was checked by the vet on the 24th August 2017 and started on pain relief.
- She was not responding as well as would be hopped so under a full health check under anaesthesia on the 14th September where identified new and old healing pelvic fractures, cause unknown. Plan was cage rest and supportive therapy for six weeks.
- By October 'Trouble' not responding as hoped and had developed swollen joints, later confirmed as inflammatory joint disease, continued to rest and treat with pain relief with supportive feeding. By the end of October plan to repeat radiographs and even a CT scan to assess the extent and issues of the pelvis and hind limbs.
- Early November deteriorated just prior to second work up and found dead on 3rd November 2017, cause of death severe aspergillosis and degenerative joint disease. Oddly, the post-mortem report did not mention the pelvic fracture.

Interview responses to the alleged welfare case

No. of staff interviewed:

2

- Limited due to the historic nature of the case
- *"No recollection of a male mating a female leading to the fracture of the pelvis, thought was a historical issue that was unknown and reoccurred or possibly another animal such as a zebra causing the injury. There were no specific known events at the time, only speculation that was never proven"*.

Interpretation by the investigation team

The allegation asks the question ***"Between 2017 and 2018, an Ostrich mated with a large male who was too heavy for her and broke her pelvis. She was left untreated for***

approximately 8 months. She was found dead in her pen.” The investigation team cannot find any evidence in the verbal nor documented records of any male mating a female and fracturing her back. This seems highly unlikely, especially as the female was circa 100kg. ‘Trouble’ was identified as having the fractured pelvis on the 14th September 2017, with clinical signs likely attributed to this first noted on the 23rd August 2017 with treatment started on the 24th August 2017 which continued until she died. She was found dead in her pen having died from aspergillosis, a relatively common disease of captive birds. As such the allegation is mostly unfounded other than she died in her pen, which was unrelated to a fractured pelvis.

Follow up questions asked: **“Why was she left for so long with a broken pelvis, and what investigations took place into this animal’s death and what were the zoo’s findings?”** ‘Trouble’ was treated immediately, prior to the diagnosis of a fractured pelvis with pain relief and once identified she was treated appropriately with cage rest for six weeks. During this time she succumbed to aspergillosis and died. A post-mortem was carried out with details confirming the cause of death was aspergillosis both at gross and histological post-mortem.

Zoo Inspection process reflective of addressing the welfare concerns

No specific notes or recollection of this case were made in the 2018 report.

Outcome of the investigation with regard to the specific case

The investigation team can confirm that there was an ostrich that had a fractured pelvis (sacrum) that was likely an old undiagnosed injury and then a second fracture occurred over the old one, the cause is unknown but is thought highly unlikely to be related to the male ostrich mating the 100kg female. During her veterinary care and cage rest she developed aspergillosis and succumbed to this ubiquitous disease. No fault was found with regard to the case and ‘Trouble’ received appropriate veterinary care for the duration of her treatment up until the time of her death.

References

- Khan and Olumide (2005) Head Injury Caused by an Ostrich: A Rare Entity, *Pediatric Neurosurgery*, 42, pp 308-310
- Peel et al (2022) Management of intertarsal septic arthritis in an ostrich, *Veterinary Medicine and Science*, 8, pp 125-129
- Raghav et al (2020) Management of Knuckling in an Ostrich Using a Custom-Made Orthotic Shoe, *Journal of Avian Medicine and Surgery*, 34(4), pp381-389
- Smith et al (2006) Muscle architecture and functional anatomy of the pelvic limb of the ostrich, *Journal of Anatomy*, 209, pp 765-779
- Samour (2016) *Avian Medicine*, Elsevier, pp 699
- Speer (2016) *Current Therpay In Avian Medicine and Surgery*, Elsevier, pp 908
- Usurelu et al (2015) Abdominal trauma by ostrich, *Annals Of Medicine and Surgery*, 4, pp 41-43

NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

See details in 2022 Special inspection report Dublin Zoo.

11.0 'NEEMA' BARINGO GIRAFFE COLLAPSED

Date of incident:	Died allegation reports 2017 Neema death reported as 10 th of June 2016
Species & identification:	Baringo giraffe (<i>Giraffa camelopardalis rothschildi</i>) Female, 7 years and 5 months Local ID A9M001
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Following a hoof care procedure 'Neema' did not come around fully from her anaesthetic
- The keepers did not feel comfortable letting her back into the main herd and she was kept separate for the night
- The next morning she was found collapsed and in a very weak state
- [REDACTED] made the decision to try to get her to stand and this was felt to be the wrong decision, the allegation stating that she likely had capture myopathy and her neurological responses were cause of concern
- 'Neema' did manage to stand only to keep collapsing again
- The vets were contacted and she died soon after

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

7 th of January 2024	ZIMS record for A9M001, 04/01/2009 to necropsy results 01/07/2016
1 st of July 2016	Post-mortem report for A9M001
27 th June 2016	Minutes of the Animal Management Meeting

Summary review of the documents reviewed as part of the investigation:

'Neema' was born on the 4th of January 2009 at Dublin Zoo. Uneventful animal record. In August 2011 it was noted that 'Neema' needed foot care and she was anaesthetised on the 1st of December 2011. A second foot care procedure was undertaken on the 6th of February 2014.

On the 9th of June 2016 'Neema' underwent a third foot care procedure under anaesthesia but was very slow to recover and did not stand until 1530hrs. She was left in the padded stall on her own overnight as the team felt that she needed more time for recovery. It was noted in the Animal Management Meeting minutes that the induction had been challenging: the dart did not go in as intended, she went down badly and she was challenging to intubate. The procedure and lessons learnt was discussed with the vets at UCD but the actions were not reported in the documentation sent across.

The following morning 'Neema' was found in her stall on her side. Despite best efforts she died shortly afterwards. The post-mortem was carried out on site.

The gross post-mortem report identified:

"It is unclear on gross post-mortem exactly why this animal died. Some lesions found were likely due to the intubation and anesthesia (laryngeal oedema, lung oedema, blood clot in trachea, congestion, emphysema, dehydrated caecal contents), and due to the prolonged recovery and repeated falling (swelling behind the ear, muscle discolouration, muscle haemorrhage). Other lesions may be due to agonal change (endocardial haemorrhages). Although acute tubular necrosis can occur with myoglobinuria due to severe muscle necrosis (as can be seen in large animals post-anaesthesia), the muscle changes in this case did not appear extensive or severe enough to cause this. Therefore the significance of the left kidney lesions is uncertain. The liver appeared slightly abnormal in size and colour, and further histopathological examination may reveal further information. As this animal received an unusually high dose of ketamine, along with other anesthetic drugs, it is possible that excessive CNS depression, combined with the respiratory and cardiovascular compromise accompanying general anaesthesia, resulted in death".

Histopathology reported:

"The liver changes (cell degeneration in centrilobular areas) are consistent with hypoxia. The muscle changes indicate acute myonecrosis. Epi- and myo-cardial hemorrhage is reported to occur as an agonal change. The lung pathology did not appear especially severe but it is possible that mild aspiration pneumonia is present. The significance of the renal changes is uncertain. There does not appear to be any tubular degeneration, indicating that the myonecrosis was not severe enough to cause kidney damage. On histological examination, it appears there there is no obvious underlying reason for this giraffe to have died under anaesthetic (kidney/liver disease etc.). It is impossible to conclude what exactly caused postanaesthetic death. It is likely that there is a combination of factors at play, including hypoxia, possible aspiration pneumonia, the combined effects of anesthetic drugs on multiple organs, myoglobin released from necrotic muscles, and stress/shock inducing catecholamine release".

Findings of the investigation with regards to the specific case

- 'Neema' was reported on the post-mortem report to be 10 years old but on ZIMS was actually only 7 years and 5 months old, having been born at Dublin Zoo
- 'Neema' had a relatively uneventful life at Dublin Zoo, with two previous anaesthetics for foot care being the two main elective procedures in her life
- On the 9th of June 2016 'Neema' was anaesthetised for foot care and the anaesthetic protocol did not go according to plan with partial injection of induction drugs, challenging intubation and a stormy induction. Whether these were in part to blame for the subsequent death was not possible to determine
- Her recovery from the anaesthetic was lengthy and she was not considered fully recovered and so was kept inside separately

- The following morning she was found collapsed and whilst she did manage to stand she collapsed again and died soon after.
- Post-mortem identified a number of factors present at the time of her death but no one change that could be identified as causing her death, the pathologist providing a robust hypothesis that *“It is likely that there is a combination of factors at play, including hypoxia, possible aspiration pneumonia, the combined effects of anesthetic drugs on multiple organs, myoglobin released from necrotic muscles, and stress/shock inducing catecholamine release”*.

Interpretation by the investigation team

It is not clear as to what the welfare complaint being alleged in this case is. The inspection team believe that the allegation infers that ‘Neema’ should not have been encouraged to stand again after she was found collapsed. The inspection team cannot comment on whether it was right or not as there is no evidence to suggest eitherway. The fact that ‘Neema’ did manage to stand is suggestive that this was a viable attempt for her to survive and was in itself an achievement worth pursuing. There was no evidence to the contrary as no bloods or other diagnostics were available and the veterinarians were not on site at the time.

The diagnosis of her condition in the allegation was partially informed supposition, in that ***“Neema more than likely developed capture myopathy, her neurological responses were also a cause of concern.”***, the actual diagnosis being a myopathy and was likely traumatic in origin from induction combined with positional myopathy and hypoxic changes which is a different pathophysiological pathway seen during prolonged recumbency in anaesthesia or not, and has variable prognosis factors that are treatable even in a giraffe. As for the neurological responses she was able to stand but unable to maintain a standing position, likely due to the myopathy. Without trying this was not possible to assess and make an informed decision regarding either euthanasia or medical intervention. From the records it appears that ‘Neema’ only successfully stood once before collapsing again and it appears that she died soon afterwards which was after the witness making the allegation had left the room.

Zoo Inspection process reflective of addressing the welfare concerns

No mention of the case was made in the 2017 inspection carried out on the 23rd of October 2017 nor on the 14th of July 2016 inspection report. The 2016 report flagged that the new Irish Standards of Modern Zoo Practice (2016) had been launched and the report commended the welfare standards and the veterinary programme. No welfare concerns were noted in the report.

Outcome of the investigation with regard to the specific case

The allegation is not considered an animal welfare complaint *per se*, rather it is an opinion narrative of the experience of one person in a team of many during a challenging experience related to the management of a recumbent and compromised giraffe that

ultimately died. The witness left before the attempt to help 'Neema' was complete and this may have provided some relief for them as they believed the attempt was in vain, whilst others stayed to ensure she was supported to the end, as the animal records stated – *"Neema found in stall this morning on her side. **Despite best efforts** she died shortly afterwards"*.

As no actual welfare allegations have been made nor occurred, the allegation cannot be supported.

References

- None

12.0 'ISIRO' FRACTURED HIND LIMB AND EUTHANASED

Date of incident:	Died 25 th of June 2018
Species & identification:	Okapi (<i>Okapia johnstoni</i>) Male, 18 years and 5 months Local ID A14M43
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- 'Isiro' noted to lose his footing on some areas of the enclosure
- Keeper advised non-slip flooring should be installed, [REDACTED] disagreed and said the bark floor was fine
- Months later 'Isiro' was euthanased due to a fracture in his hind quarters.

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

7 th of January 2024	ZIMS record for A14M43, 17/01/2000 to necropsy results 03/08/2018
7 th of January 2024	ZIMS Medical History Report for Clinical Notes for A14M43
27 th June 2016	Minutes of the Animal Management Meeting
3 rd July 2018	Minutes of the Animal Management Meeting
3 rd August 2018	Post-mortem report for 'Isiro'

Summary review of the documents reviewed as part of the investigation:

'Isiro' was born on the 17th of January 2000 at Rotterdam Zoo, moving to Dublin Zoo on the 27th of June 2014. In the first year at Dublin Zoo he had gastrointestinal problems and these were reviewed with the previous holder as to his specific needs and dietary requirements which were assessed and delivered.

October 2015 saw 'Isiro' develop left hind lameness which resolved in a couple of days. This reoccurred November 2015. He continued to exhibit colic signs on and off over the following years. In 2016 he developed shifting lameness, typically the hind limbs. This was particularly bad in April 2016 but responded well to analgesia. Over the next year his weight dropped from nearly 300kg to 219kg. His appetite and weight fluctuating considerably. In August 2017 he became very stiff on all four limbs and was started on meloxicam which improved his gait and continued periodically until his death. He fell inside the house on the 4th of March 2018.

On the 18th of June he again fell inside the house, with a small amount of blood from his ossicone. The vet examined him and noted he was hyper reactive to stimuli (hyperesthesia) and started a quality of life assessment. Very stiff on his hindlimbs. On the

20th of June he was very slow to walk on all 4 limbs, always bending the front limbs, hyper-reactive to external stimuli, no lameness seen but reviewing the CCTV it appeared he was moving his right hind leg but trying to weight bear on the left which slipped. The Animal Management Minutes suggested he possibly had an epileptic fit when reviewing the video. Given gabapentin alongside his meloxicam from the 22nd of June 2018. He was found dead in the morning of the 25th of June 2018.

The post-mortem report noted:

- Long oblique fracture through the distal left humerus, not acute but not yet callus formation
- Chronic interstitial glomerulonephritis – likely subclinical
- Brain and liver normal histopathology
- Small amount of articular cartilage ulceration in the left glenoid cavity

Findings of the investigation with regards to the specific case

- Lengthy history of inappetence and long-term analgesia provision for shifting but predominantly hind limb lameness
- On the 18th of June 2018 'Isiro' fell inside the house, this appeared to be due to an odd gate and lack of control rather than poor substrate, this being the second with the first recorded on the 4th of March 2018.
- He was walking fine on the 19th of June 2018 but was noted to be very stiff, abnormally so when examined by the vet. Discussion had as to whether there is a neurological or metabolic component as part of this.
- Found dead on the morning of the 25th of June 2018.
- Post mortem identified a left humeral fracture (forelimb) that likely occurred at the fall on the 18th, renal disease (likely subclinical) and cartilage ulceration of the left hip joint.

Interpretation by the investigation team

The allegation infers that the floor design resulted in 'Isiro' slipping and ultimately being euthanased due to a fracture in his hind quarters. This simplifies a complex medical case that was outlined in the Animal Management Meeting minutes as likely to be a mixture of age related changes such as arthritis (of which there was some evidence in the hips), metabolic issues which are often reported in okapi (possibly related to the dietary challenges that 'Isiro' had faced for almost two years), and more recent neurological behaviours which were noted in the medical records, possibly even an epileptic seizure.

The narrative of the welfare allegation skips over two years worth of challenging medical and nutritional history, including his being on pain relief for shifting lameness which was first reported in 2015 but increased to requiring supportive treatment a year prior to his death. Only two falls were reported on 'Isiro's' animal record, one in March 2018 and one in June 2018 4 days prior to his death.

The allegation states that "***Isiro was euthanased due to a fracture in his hind quarters***" which demonstrates a complete lack of credibility on the part of the complainant as 'Isiro'

was found to have died naturally and had a fracture of his left humerus, a bone of the forelimb, not the hind limb.

Zoo Inspection process reflective of addressing the welfare concerns

Okapi were not mentioned in the 2018 zoo inspection report, following the inspection carried out on the 22nd of November 2018.

Outcome of the investigation with regard to the specific case

The allegation suggests that the individual had foresight of what was going to happen to 'Isiro' and that they knew best, a trait demonstrated in the other allegations in this series. Yet the allegation poorly understood the challenges in managing 'Isiro', an aging okapi with multiple challenges both nutritionally and orthopaedically. The presented narrative appears to be fabricated with a few known facts embellished with errors and lacked any detail of the complete picture at the time of 'Isiro's' death. There is no evidence of any animal welfare concerns here and 'Isiro' was under proactive veterinary care and quality of life assessments prior to his death. As such the allegation is not supported.

References

- None

13.0 SLOTH HOUSE TEMPERATURE MANAGEMENT CONCERNS

Date of incident:	Incident 2 nd and 9 th of July 2021
Species & identification:	Linné’s two-toed sloth (<i>Choloepus didactylus</i>) Male and female, DOB 04/12/1996 and ?/?/1986 respectively Local ID A2M024 and 96M049
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- On the 2nd of July 2021 it was noted that the sloths were too warm in their habitat, a request was made to [REDACTED] to move the thermostat from 30 to 23°C, [REDACTED] was reported to say it was OK and it was the plumber that had adjusted the temperature up to 30°C
- On the 9th of July 2021 [REDACTED] was informed that the temperature had been turned up to 30°C again and the sloths were too warm again. [REDACTED] claimed that the plumber had done this again but the diary showed that this was not the case on both occasions.
- Concerns with regard to poor communications resulted in the animal’s welfare being compromised.

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

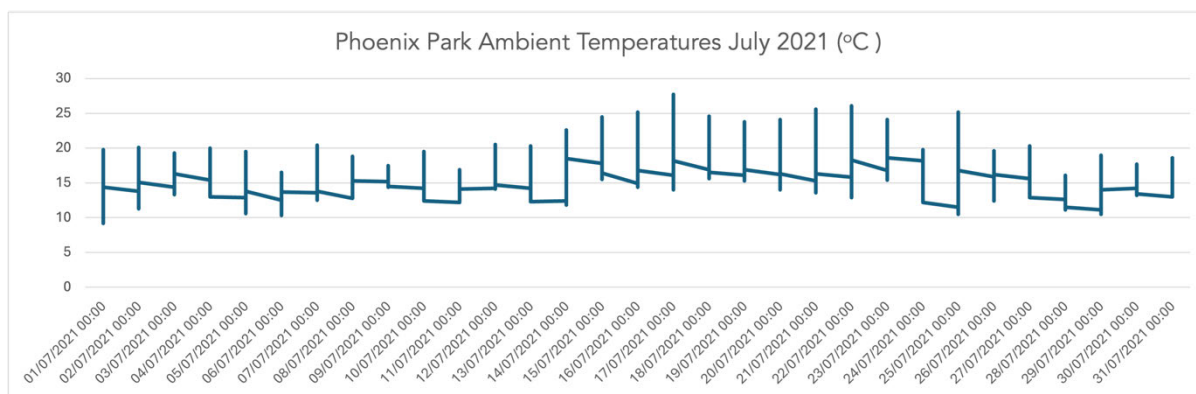
8 th of March 2024	Sloth datalogger files providing hourly data from the sloth enclosure for temperature and humidity from the 17 th of December 2022 to 24 th of August 2023 (period requested)
7 th of January 2024	Images of the location of the datalogger thermometers in the sloth enclosure
3 rd of January 2024	Daily report sheets for every day in July 2021
3 rd of January 2024	ZIMS record for 96M049, 14/09/1986 to recent record 21/08/2023 (female)
3 rd of January 2024	ZIMS Medical History report for 96M049 03/03/2021 to 27/10/2023 (female)
3 rd of January 2024	ZIMS record for A2M024, 04/12/1996 to recent record 10/09/2023 (male)
3 rd of January 2024	ZIMS Medical History report for A2M024 03/03/2021 to 25/07/2023 (male)
3 rd of January 2024	Goeldi monkey and sloth habitat monitoring form
3 rd of January 2024	Monitoring of habitats SOP South America House

Summary review of the documents reviewed as part of the investigation:

The inspection team were not clear on what the specific animal welfare allegation was in this case. The Dublin Zoo standard operating procedure as outlined in the Goeldi Monkey and Sloth – Habitat Monitoring Form requires that the ambient temperature must be equal or greater than 18°C and equal or less than 30°C which encapsulates the thermometer setting stated in the allegation.

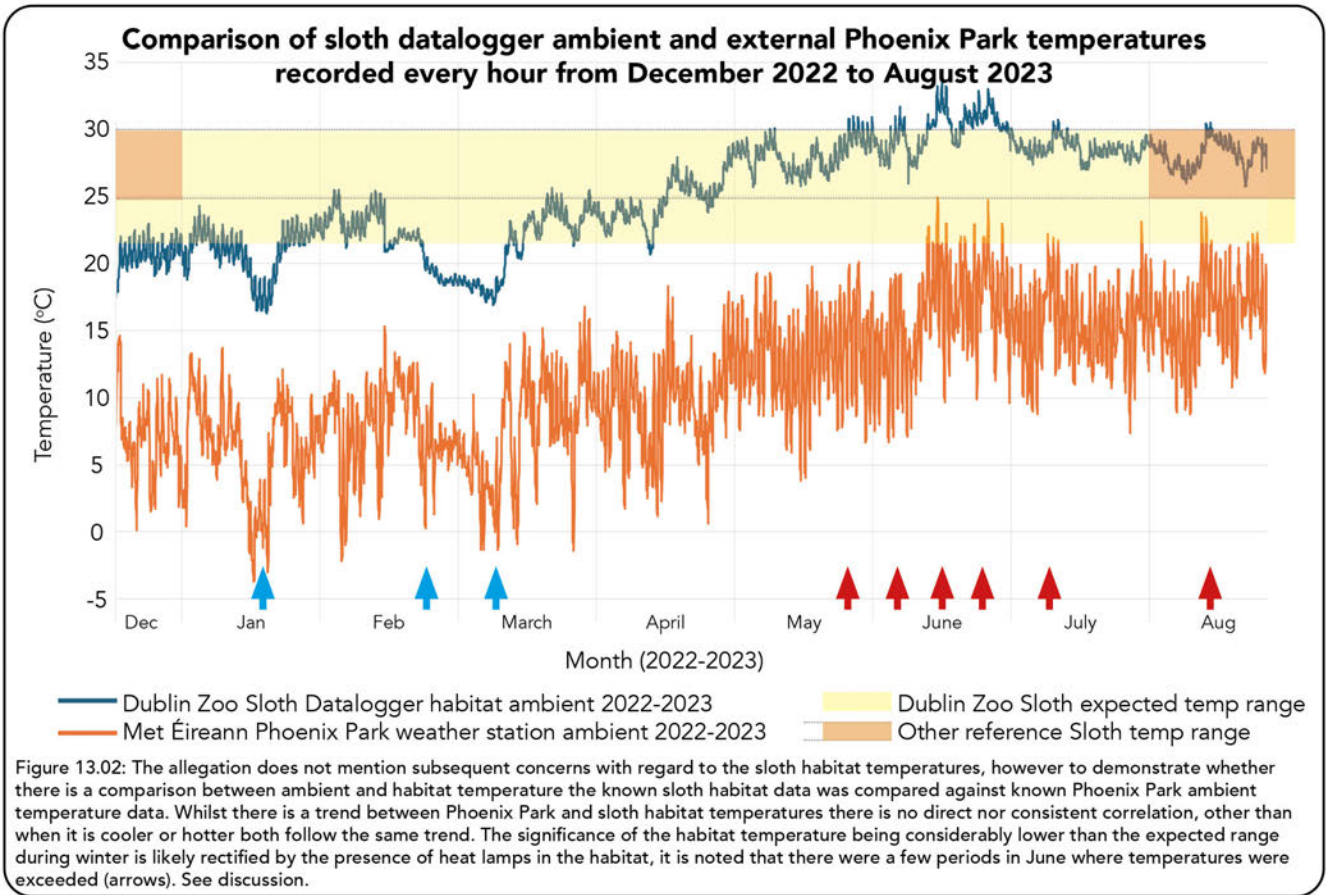
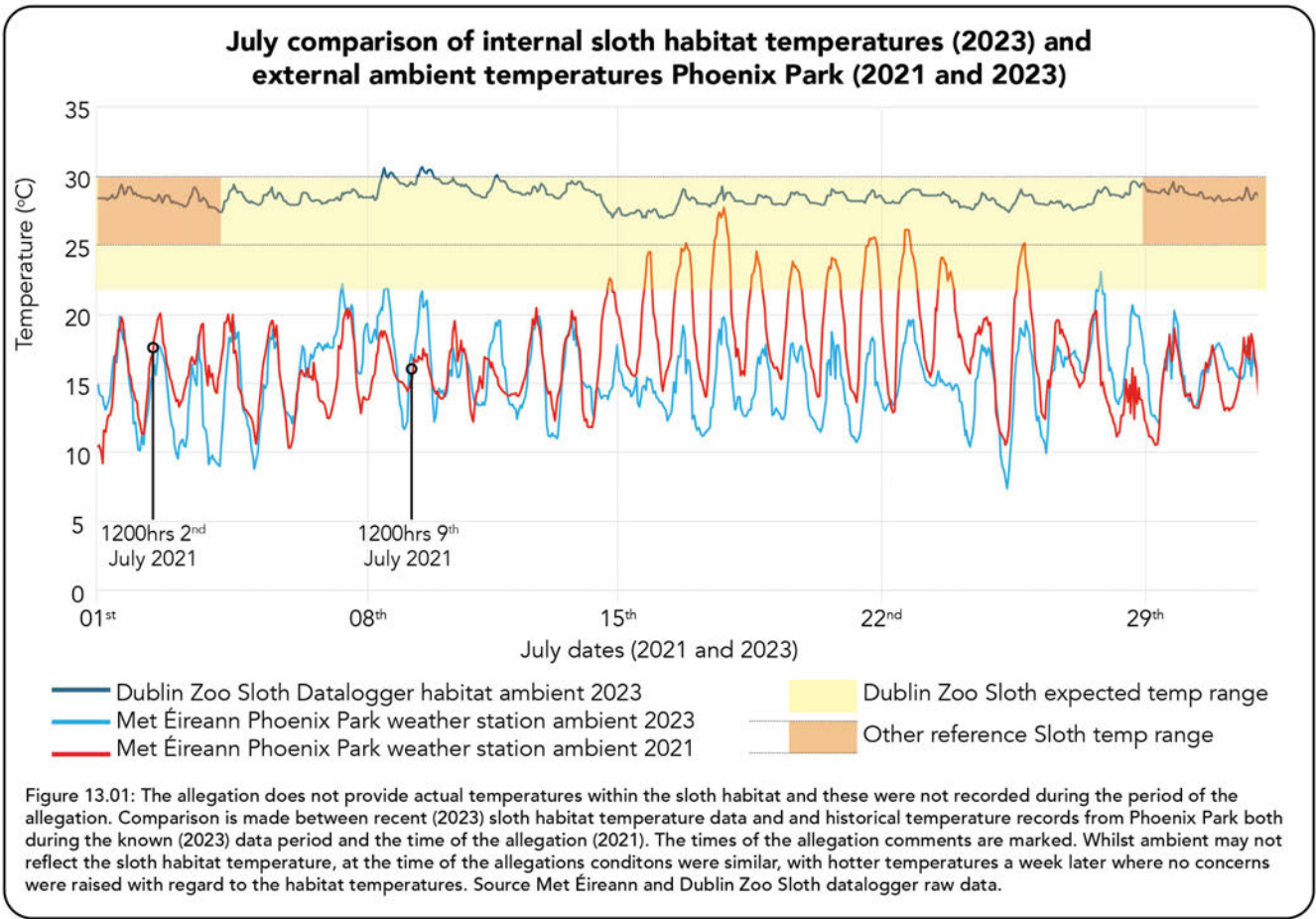
Whether the thermostat temperature directly correlates with the temperature produced in the enclosure is not clear as the records presented do not corroborate nor correlate a number of factors, including: the actual temperatures within the enclosure; the maximum and minimum temperatures experienced across the microclimate where the sloth are found; how long the extremes or maximum and minimum temperatures outside of the decided parameters were experienced for; and the ability of the animal to migrate through the thermocline and regulate their own body temperature either by moving to cooler aspects of the enclosure (or outside) or to the heat lamps within the enclosure. Typically, a thermostat does not reflect the maximum or minimum temperatures within a habitat, it is a variable control device that turns on or off heating systems within the enclosure with the set temperature measured at (often) a single point, be it the thermostat itself or a linked thermocouple. In effect, these are typically used to either control a heat lamp for a point heat source or for heaters or radiators to provide a more general ambient temperature. The system set up requires that known temperature settings on a thermostat will typically deliver a range of temperatures that is either within a tight range in a thermally secure exhibit or a wide range if poorly insulated and the temperatures are influenced by external factors such as external environmental temperatures. The actual temperatures the sloths were exposed to on the 2nd and 9th of July 2021 were not reported in the allegation, nor was the indicators of why the keeper felt the animals were too hot. As such the allegation appears to simply be a case of poor communication and poor understanding of thermal management by the keeper and the use of thermostats. However, the case has been reviewed on the assumption that it was too hot to ensure that the allegation can be assessed to ensure appropriate action is taken if required.

The external temperature range during the month of the allegation reported at the Met Éireann Phoenix Park weather station was reported as varying from 9.2-27.7°C (see graph) and the sloths for the main part of the month were reported to have had outdoor access which they regularly used. If the maximum temperature was too high as suggested in the allegation they had the option to move outside and the day time temperatures were often within the expected range for the species (Dublin Zoo Range 22-30°C), even at the low extremes this was comparable to some of the species' range temperatures, especially for those adapted to the 'new normal' temperatures of Dublin. Equally the veterinary and behavioural records were provided and there were no issues noted during this time period. The review was extended to the whole month rather than the two specific days noted in the allegation.



In discussing the case and the records requested the inspection team expanded the environmental management assessment to include the changes made in 2023 in response to the zoo inspection discussions noted in the 16th of May 2022 zoo inspection report which primarily pertained to the red footed tortoises and the primates within the South America house which is shared with the sloths. In December 2022 the South America house was fitted with temperature and humidity dataloggers which continually read temperature and humidity parameters, set to read at intervals of every hour. These were compared against the external ambient temperatures recorded at the Met Éireann Phoenix Park weather station to give an approximation of the situation as it may have been in July 2021, i.e. if there was any correlation to the external and internal temperatures assuming that the systems were operating in a similar manner then conditions may be able to be inferred at the time of the allegation as to whether their welfare was compromised.

Figure 13.01 compares the Phoenix Park weather station ambient temperatures (light blue) to the measured datalogger readings within the sloth habitat (dark blue). Overlaid is the temperatures for the same dates in 2021, the time of the allegation (red line), with the actual dates of the allegations marked on the graph. In general there is a similar trend between the ambient temperatures of Phoenix Park and the sloth habitat, the two temperatures rising and falling together as would be expected. It is noted that the temperature on the 2nd and 9th of July 2021 was comparable to temperatures noted in the 2023 dataset and the sloth habitat data, when compared against similar Phoenix Park temperatures, was well within the expected range with no evidence of overheating being apparent. It is also noted that from approximately the 15th of July in 2021 the ambient temperature was exceedingly high and no concerns were noted in the allegation with regard to overheating during this time. In reading the notes the inspection team are of the opinion that the sloths had access to their outside enclosures during this time and the outside temperatures were within the expected parameters for the species. As such, the link between excessive external temperatures impacted internal temperatures being tenuous but also able to be managed by simply giving the animals access to the outside.



Temperature data source: Copyright Met Éireann, www.met.ie. This data is published under a Creative Commons Attribution 4.0 International (CC BY 4.0). <https://creativecommons.org/licenses/by/4.0/>. Met Éireann does not accept any liability whatsoever for any error or omission in the data, their availability, or for any loss or damage arising from their use. This material has been modified from the original.

Figure 13.02 supports this position in that when looking at a larger data set (December 2022 to August 2023) there are obvious trends between external ambient temperatures and the internal sloth habitat data. On the whole the external temperatures are buffered well by the heating systems of the house, however there were two extended periods where the ambient temperatures of the sloth habitat were considerably lower than the expected range, dropping as low as 16-19.9°C. For the period December 2022 to August 2023 this was mostly for a period overnight as would be expected but the total number of days where the temperature was below the minimum threshold set for over 6 continuous hours was 36 days during this period, 19 days where it was equal to or exceeded 23 hours, and the longest continuous period where it was under the minimum requirement for 23 hours or more per day was 15 days (February to March 2023). It is noted that the sloths have access to heat lamps in their environment and the ambient temperature data provided does not demonstrate the localised basking points in the habitat, however even with this facility it does mean that the sloths were limited in the choice to which they can use the habitat, being restricted to the microclimates close to the heat lamps to ensure they stay within their optimal thermally active zone. It is also noted by the inspection team that there were no animal nor medical records during these periods indicative of ill health nor behavioural changes and so the inspection team believe that there was no apparent welfare implications for the sloths during these periods. This position is supported by a lack of comment made in the allegations with regard to temperatures being too low within the South America House.

The daily report sheets did state on the 4th of July 2021 that, *"Sloths a lot more active over weekend the temperature of the house feels much better the internal doors and more hatches have been left open its allowing better airflow and regulating temperature in house better"*, there was no mention of what the actual temperatures in the house were. It is noted that on the 2nd of July 2021 the only mention of the sloths on the daily report sheet was that they had run out of leaf eater pellets. No mention made about concerns or temperature. The 9th of July daily report sheet does mention *"Thermostats up to 30 again sloths not active today house very stuffy opened up all internal doors to increase air flow and regulate temperature through out the house"*, again no actual mention of the temperatures in the house, just that it was stuffy. Sloths not mentioned again until the 16th of July and no issues. On the 17th of July the first habitat temperature is mentioned in the daily report as 30°C, dropping down to 27 °C later in response to sprinklers being put on at midday. It is noted that the temperature outside during this period (Phoenix Park ambient data) was 22.7-29.2°C with the temperature appearing to synchronise with the outside temperature of 27°C. The majority of the daily record reports for July 2021, except for one, were authored by the same keeper and so the inspection team have interpreted the assessments as being consistent throughout the month of July.

The enclosure is one of the older facilities at Dublin Zoo and is noted to have glass roof panels. Figure 13.03 demonstrates the location of one of two dataloggers in the sloth habitat and the thermostat for the area, located in the keeper area outside of the actual enclosure (see over page).



Figure 13.03: (a) The sloth habitat, note the glass roof component of the enclosure (challenging to maintain temperatures) and the location of one of the temperature and humidity dataloggers (red circle); (b) the ambient heating system is controlled by the thermostat which is located in the keeper area, outside of the actual habitat but in a shared airspace.

Findings of the investigation with regards to the specific case

- The inspection team cannot comment on the position of the thermostat other than on the 9th of July 2021 as it is confirmed as being set at 30°C.
- Despite the extensive Standard Operating Procedure and the habitat Monitoring form no operating procedure had been submitted for the sloths to state what settings the thermostat must be set at to maintain target temperature ranges in the actual enclosure nor demonstrate how the thermostat is utilised when the temperature range falls outside of the expected thermal range, i.e. is 30°C excessive as this falls within the target reference range and the external ambient temperature outside was only 12.6-20.1°C on the 2nd of July 2021 and 14.4-17.5°C on the 9th of July 2021, the two dates of the allegations.
- The sloths appear to have outdoor access and were able to have choice to move to cooler areas outside if the internal area was too hot for them.
- There were no records of the actual temperature in the habitat sent across in the allegation or from Dublin Zoo from the 2021 events nor comment made in the daily reports about the temperature compromising the sloths, despite the same keeper documenting all of the comments, bar one, for the period of July 2021 which covers the period of the allegation.
- There were no comments in the medical or animal records of the sloths being compromised due to the excessive heat during this period.
- There was evidence in 2023, outside of the allegation, of minimum temperature ranges being exceeded, in one case the temperature being below the minimum 22°C for a continuous period of 15 days, although it is also noted that there are additional heat lamps in the habitat and the location of the datalogger does not reflect the microclimate in the locale of the heat lamps, see discussion above.
- Fluctuations in external temperatures do appear to influence the internal sloth habitat which is expected but this appears to be generally well buffered with the current systems,

both at the lows and the high external ambient temperatures. A full commentary not being possible as other factors come into play, including the local heat lamps.

Interpretation by the investigation team

The allegation was not considered a welfare concern as the allegation highlighted poor communication and expectation of the setting for a thermostat in the sloth enclosure which was set to a possibly higher than expected value but one that was within the thermal gradient expected for the species based on Dublin Zoo's own habitat standard operating procedure.

The allegation did not evidence any behaviours or compromise of the species other than the keeper was of the opinion the sloths were too warm. There were no notes made in the records nor the daily reports that the animals had been compromised, nor were there any veterinary records from this time demonstrating that welfare had been compromised or that there were any clinical or behavioural signs of concern noted.

Whilst there are improvements that could be made with regard to the way in which the thermal management is recorded and demonstrated there was no evidence to support the statement "***This was another episode where poor communications resulted in the animals' welfare being compromised***", this is especially so as the animals had access to outdoors for large periods of time.

Kelleher and Ferguson (2019) report sloths should have an enclosure temperature of 25-30°C and a relative humidity of 80%. Whereas, Dünner and Pastor (2017) suggest a range of 25-27°C, and the Dublin Zoo protocol suggests 22-30°C is required with steps to be implemented when the temperature exceeds these thresholds. It is not clear to the inspection team if the minimum temperature is 22°C why steps are only implemented when the temperature reaches 18°C and whilst this does not form part of the assessment of the allegation it does raise questions with regard to the processes behind environmental parameter management and this is captured in the recommendation with regard to this case. It is recommended that Dublin Zoo review their reference ranges, which the inspection team acknowledge may differ from those the inspection team utilised, to ensure that the lower threshold is appropriate (e.g. potentially raise from 22°C to 25°C) and review the threshold temperatures at which action must be taken (e.g. potentially raise the lower threshold from 18°C to 22-25°C depending on the minimum reference range agreed upon). As part of this inspection an anonymous assessment was undertaken of normal temperature reference ranges used in other zoos and the typical range was 25-30°C but some set upper thresholds of 35°C without any impact on the species.

If *Choloepus sp.* are similar to *Bradypus sp.* then they are likely to have an optimal thermally active zone (TAZ) which is typically 26-30°C. Anything above this the sloth can invoke metabolic depression as ambient temperature increases, this being a relatively unique response by this cathemeral and heterothermic species with a low and labile body temperature. They are not a typical mammal when it comes to physiological controls of metabolic rate and temperature management. This in part means that temperature management is more critical at the extremes, especially when temperatures reduce as they

are not ably equipped, like most mammals, to raise body temperature to support critical life support processes.

There is no evidence on the two dates stated in the allegation that the environmental parameters were ever at risk of compromising the animals, nor even exceeded the parameters set for their habitat. The inspection team note that there were no complaints in the same month where the external ambient temperature rose higher nor any other complaints with regard to thermal management since July 2021 and as such these two changes to the thermostat are considered two separate historical incidents with no others mentioned in the 29 months between the July 2021 concerns and the date the allegations were submitted.

It is noted that recent changes (Dec 2022) have occurred with continuous blue tooth temperature dataloggers being installed. These are reviewed and the maximum and minimum temperatures recorded for the week but data collected constantly. Recommendations are made to augment the data collection method already being carried out. It is also important to collect the ambient outside temperature and compare this to the indoor temperatures to demonstrate the thermal effectiveness of the building. See recommendations.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection reports were assessed from 2020 to present day. Comments were made with regard to the temperature management within the sloth house as follows:

- 18/10/2021 – no comments made
- 16/05/2022 – comments made with regard to the *"...red-footed tortoises and the primates (note: which included the sloths) in 'South America' require additional monitoring of their indoor housing to ensure that all environmental parameters are being met. This must include ongoing daytime and night time monitoring and recording of ambient temperatures, basking temperatures, and humidity which should be reviewed and acted upon by the team leaders for that section. In addition, there must be monthly recording of the UV index at the basking spots to ensure it remains within the ideal range for the species kept. See conditions"*. The condition referenced the red foot tortoises (condition 4) and the primates (condition 5) which were in the same shared space as the sloths but it never mentioned specifically the sloths themselves. Condition 5 stated, *"In accordance with section 2.6 of the ISMZP (2016) the zoo must ensure that all the primates in the South America house are provided with appropriate temperature gradients, ventilation, UVB and humidity, and that these parameters are regularly monitored and recorded (Immediate)"*.
- 17/04/2023 – temperatures signed off as being compliant, with the exception of two vivaria for reptiles elsewhere within the zoo that needed adjustments to their basking spots.

The concerns captured in the 2022 inspection report being with regard to the recording and management of temperatures within the enclosure, and being able to demonstrate correct parameters were being provided. This led to the development and inclusion of data loggers

in the houses and the active monitoring deployed in the monthly audits. However, this is still an area that needs to be developed, see recommendation below.

Outcome of the investigation with regard to the specific case

No action required, this is an communication issue that did not have any apparent animal welfare issues in the context of the allegation nor the information supplied.

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14A.0 CITRON-CRESTED COCKATOOS MANAGEMENT 2016 - 2022

Date of incident:	Incident 2016-2022
Species & identification:	Citron-crested cockatoo (<i>Cacatua citrinocristata</i>) Mixed, 1.3.0 Local ID A16B02, A16B43, A16B19, A18B01
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

This allegation is formed of two separate areas of concern and as such are broken into parts 14A and 14B and dealt with separately, the following refers to Part 14A

- Since 2016 Dublin Zoo’s critically endangered Citron-crested cockatoo have spent extensive time in the quarantine holding area due to continuous rodent issues in their aviary
- The quarantine area is not designed to house animals long-term and is completely unsuitable for the cockatoo’s wellbeing and social requirements which hinders their vital breeding programme.
- Dublin Zoo has invested millions in various other projects but has not made the proper investment in upgrading their aviary.

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

8 th of January 2024	Taxon report <i>Cacatua citrinocristata</i> 03/01/2024
8 th of January 2024	Cockatoo A16B02 enclosure moves record 10/02/2016 to present day (female)
8 th of January 2024	Cockatoo A16B03 enclosure moves record 10/02/2016 to 22/05/2022 (male – escaped)
8 th of January 2024	Cockatoo A16B43 enclosure moves record 25/10/2016 to present day (female)
8 th of January 2024	Cockatoo A17B19 enclosure moves record 07/09/2017 to present day (female)
8 th of January 2024	Cockatoo A18B01 enclosure moves record 08/03/2018 to present day (male)
6 th of January 2024	ZIMS Medical notes A16B02 2019 to present
6 th of January 2024	ZIMS Medical notes A16B03 2019 to 2022
6 th of January 2024	ZIMS Medical notes A16B43 2019 to present
6 th of January 2024	ZIMS Medical notes A17B19 2018 to present
6 th of January 2024	ZIMS Medical notes A18B01 2018 to present
3 rd of January 2024	ZIMS Specimen report A16B02
3 rd of January 2024	ZIMS Specimen report A16B43

3 rd of January 2024	ZIMS Specimen report A17B19
3 rd of January 2024	ZIMS Specimen report A18B01
3 rd of January 2024	Citron-crested cockatoo EEP notes and conservation activities in 2022
3 rd of January 2024	DZ Escapes and deaths <i>Cacatua citrinocristata</i> 2015 to 2024
22 nd of May 2022	Animal Emergency Response form A16B03 escape report
3 rd of January 2024	Far Side DZ Animal Welfare Action Plan Cockatoo Feb 2022
3 rd of January 2024	Far Side DZ Animal Welfare Action Assessment Cockatoo Feb 2022
10 th of January 2024	Pest control company Schedule
7 th of January 2024	Quarantine rooms and aviary cockatoos
8 th of January 2024	Annotated section drawing of the quarantine rooms
8 th of January 2024	Annotated plan drawing of the quarantine rooms
3 rd of January 2024	Series of images of the far side cockatoo aviary redevelopment and area to extend the aviary
8 th of January 2024	Section and plan drawing of Aviary 04, far side
1 st of July 2023	Animal Collection Management Plan July 2023
1 st of October 2018	Animal Management Meeting Minutes
6 th of September 2016	Post-mortem report PPV 1014 cockatoo, died 23/08/16

Summary review of the documents reviewed as part of the investigation:

Dublin Zoo provided a considerable amount of detail including the animal record, the animal medical record, the housing plans, the animal collection plan, the conservation programme and other documents pertaining to the citron-crested cockatoo population held at Dublin Zoo for the period under investigation. This includes additional documentation pertaining to the escape of the citron-crested cockatoo A16B03 who escaped in May 2022 and formed part of a previous investigation (Case 6, Dublin Zoo Special Zoo Inspection Report, 2022).

To reproduce the content of the supplied documents in detail is outwith the scope of this report and is not relevant in assessing the allegation. The relevant details are summarised as follows:

The citron-crested cockatoo currently maintained at Dublin Zoo (current but also present for the duration of the allegation):

Bird ID	Sex	Date of birth	Age (at time of the allegation)
A16B02	Female	09/04/2015	8y and 8m
A16B43	Female	04/05/2015	8y and 8m
A17B19	Female	20/08/2016	7y and 4m
A18B01	Male	18/05/2017	6y and 7m

The birds have spent their time in the following areas of the zoo post arrival:

Bird ID	Arrival date	Quarantine	Quar as %	Aviary 04	Av04 as %
A16B02	10/02/2016	6y3m	79%	1y8m	21%
A16B43	25/10/2016	2y9m	38%	4y6m	62%
A17B19	07/09/2017	6y5m	100%	-	0%
A18B01	08/03/2018	5y5m	90%	7m	10%

And the number of aviary moves for each bird during their time at Dublin Zoo was:

Bird ID	Sex	Arrival date	Number of aviary moves during the time at DZ
A16B02	Female	10/02/2016	4
A16B43	Female	25/10/2016	16
A17B19	Female	07/09/2017	1
A18B01	Male	08/03/2018	6

The current location of the individual birds is currently, at the time of writing:

Bird ID	Sex	Aviary location (current)	Since (last moved)
A16B02	Female	Quarantine room 3	24/01/2022
A16B43	Female	Aviary 04 Far Side	19/10/2023
A17B19	Female	Quarantine room 3	07/09/2017
A18B01	Male	Aviary 04 Far Side	19/10/2023

The number of moves was in part due to rodent management but also resolution of the maintenance infrastructure that led to the escape of cockatoo A16B03, and post the 2022 welfare audit which identified that aviary 04 did not meet the welfare needs of the birds to the standard Dublin Zoo aspires to.

The medical records recorded no concerns and listed preventative medicine results, vaccination and one bite wound injury (source unknown) in all of the medical records.

The primary quarantine room (QR3) used to house the cockatoos has the following dimensions:

- Inside 3 x 3 x 2.5m (area 9m²)
- Outside 3 x 3 x 3.3m (area 9m²)
- Total space available is 6 x 3 x 2.5/3.3m (area 18m²)
- Documents and images demonstrate that the aviary has perching nest boxes and an active enrichment programme

It is noted that the EAZA Husbandry Guidelines (2007) recommend a minimum aviary size for a breeding pair of cockatoos as "An enclosure with a height of 2.5-3.0m with a floor area of 15-20m² is recommended as a minimum". Utilising other standards for comparison the parrot aviary sizes required in the Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations (2018), as a higher standard, for cockatoos is a minimum aviary size of 1.8 x 1.3 x 1.65 (area 2.3m²).

In March 2023 there was considerable renovation of the Far Side aviary (Aviary 04) to make it rodent proof and there are plans to extend the aviary in the future but covid and subsequent recovery of debt has restricted the build programmes across the zoo.

With regard to the conservation breeding management of the birds there are currently no recommendations for the cockatoos to breed, these are expected in 2024. The birds are all relatively young (6-8 years of age) and the species can breed as young as 2 years of age but sexual maturity is reported to be 5- 6 years and breeding to commence thereafter. This also requires pairs to be formed and individual management considerations to be implemented. As such the birds are still considered juveniles and are not considered suitable to be considered for breeding until 2024 at the earliest.

Dublin Zoo is currently the lead on the breeding population for EAZA and manages the breeding programme along with a number of *in situ* conservation programmes specific to the citron-crested cockatoo.

Findings of the investigation with regards to the specific case

- The citron-crested cockatoo flock consists of 1 male and 3 females
- There has been considerable movement of the birds between the quarantine facility and aviary 04 due to a number of factors including rodent control, maintenance requirements leading to the escape of a bird, avian influenza controls, and social management strategies over the period 2016 to 2024
- The birds are now managed as a pair (in aviary 04) and two females in the quarantine centre (QR03)
- The birds are all considered juveniles and the eldest only reached sexual maturity 2 years ago with the youngest, the male reaching this point in the last 6 months – breeding recommendations have only been considered, but yet to be recommended for 2024
- Both aviaries meet or exceed enclosure sizes for the species
- They are provided with proactive enrichment programmes and welfare reviews with no behavioural or physical issues noted in the animal or medical records

Interpretation by the investigation team

The allegation states that the ***“Citron Crested Cockatoos have spent extensive time in the quarantine holding area due to continuous rodent issues in their aviary.”***, this can be confirmed as the case for the cockatoos and whilst rodent issues and their control have been a major historical driver for the moves this is only one of many reasons for the management practices that were implemented. It is also noted that in March 2023 aviary 04 was made rodent proof following a major refurbishment and the male-female pair have been moved back to the aviary permanently since October 2023. The female-female pair are still housed in the quarantine room (QR03).

The allegation states that ***“The quarantine holding areas is not designed to house animals longterm and is completely unsuitable for the cockatoos’ wellbeing and social***

requirements which hinders their vital breeding programme.” The inspection team disagrees with this statement in that the quarantine room QR03 where the birds are currently housed meets the recommended size and infrastructure requirements for the species as recommended in the EAZA Husbandry Guideline (2007). In addition, the birds have been pre-reproductive age until the last 12-18 months with the male only reaching sexual maturity in the last 6 months. Whilst breeding is possibly from 2 years of age, Dublin Zoo has acted responsibly to allow the birds to develop mentally as well as physically prior to engaging in breeding programmes for this long lived species. Finally, the quarantine and Far Side Aviaries have equivalent housing and enrichment opportunities designed to meet their needs, with no identifiable social, behavioural or medical issues noted in any of the birds. The breeding programme being a considered strategic management programme that will only produce breeding recommendations later this year for these specific birds and as such Dublin Zoo would have been unable to be compliant with EAZA’s Population Management Programmes if they were to have bred the birds prior to receiving the recommendations. The allegation also fails to reflect on the active role Dublin Zoo plays in the conservation management of this specific species both in situ and ex situ, supporting field conservation programmes and leading on the breeding management of the species across all EAZA collections.

Finally, the allegation states that *“Dublin Zoo has invested millions in various other projects, but has not made the proper investments in upgrading their aviary”*. Dublin Zoo made major refurbishments to the existing aviary in March 2023 to ensure it was rodent proof and has plans to extend the aviaries in the future but this has been delayed by post covid investment in the other major projects and priority has been given to other welfare led projects on site. There are no immediate welfare issues with regard to the cockatoos that needed to be addressed, whereas other areas needed improvement. As such the section team do not agree with this position stated in the allegation either.

Zoo Inspection process reflective of addressing the welfare concerns

No concerns were noted during this period other than that of Case 6, Dublin Zoo Special Zoo Inspection Report, 2022.

Outcome of the investigation with regard to the specific case

The citron-crested cockatoo flock is managed to the specific management requirements outlined in the EAZA Husbandry Guide for the species and during the allegation period Dublin Zoo has been proactive in managing the birds’ welfare, preventing further escapes and preventing injury from potential rodent incursion. This is in accordance with the Irish Standards of Modern Zoo Practice and the the management demonstrates high standards of welfare provision. In addition, Dublin Zoo is an international leader in the conservation management of the species as they over see the EAZA breeding programme for the species and contribute to field conservation of this species. As such the allegation narrative is not supported and no action is recommended.

References

- DEFRA (2018) Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations Guidance Notes for Conditions for selling animals as pets, pp91
- EAZA (2007) EEP Husbandry Guidelines for *Cacatua spp*, pp58
- NPWS (2022) Dublin Zoo Special Zoo Inspection Report 14th of July to 7th of October 2022, pp254

14B.0 STATEMENT REGARDING LOSS OF BIRDS AND FAILURE TO PROVIDE THE FIVE ANIMAL FREEDOMS FOR THE COCKATOOS AND THE GOELDI MONKEYS

Date of incident: Not applicable

Species & identification: Not applicable

Allegation:

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- Dublin Zoo once had an extensive collection of endangered bird species, but has more or less transferred all its endangered bird collections out of the Zoo.
- It is a poor reflection on the part of Dublin Zoo that the two studbook species that Dublin Zoo manage, the citron crested cockatoos and the Goeldi monkeys, have been deprived of the Five Freedoms

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

- Case 14A
- Case 15

Summary review of the documents reviewed as part of the investigation:

Not applicable.

Findings of the investigation with regards to the specific case

Not applicable.

Interpretation by the investigation team

The second part of allegation 14 is a pair of statements, rather than actual evidence-based welfare concerns.

The first statement, ***“Dublin Zoo once had an extensive collection of endangered bird species, but has more or less transferred all its endangered bird collections out of the Zoo”***, is a simple statement referencing that the bird component of the collection has reduced. This decision is not an animal welfare concern and it is not for the inspection team to determine how Dublin Zoo manages the animal collection.

The second statement, ***“It is a poor reflection on the part of Dublin Zoo that the two studbook species that Dublin Zoo manage, the citron crested cockatoos and the Goeldi monkeys, have been deprived of the Five Freedoms”***, is not reflected by the findings of the inspection team. As demonstrated in Case 14A the citron-crested cockatoo’s welfare

needs have been provided for, meeting or exceeding both the physical and behavioural minimum requirements for the species. As for the Goeldi's monkey allegation 15, which follows this case, is a repeat of an allegation made in the 2022 welfare allegations initiated in response to comments made by Senator Hoey at her Motion on Animal Welfare presented to the Seanad Éireann at the Private Members' Business of the 14th of July 2022. This was comprehensively reviewed and was found to be a case of foetal oversize, not a failure to meet dietary provision as alleged. As such the welfare needs were assessed, steps taken to address them and the findings from the reviews identified the problem, albeit too late to make meaningful changes. Neither of these cases support the position made in the allegation.

Furthermore, the allegation references the Five Freedoms. The inspectors bring attention to this fact as it demonstrates a poor understanding of what animal welfare is and what modern tools are available to monitor, assess and resolve potential animal welfare successes and failures. This was discussed in some detail in the 2022 Special Inspection Report for Dublin Zoo in reference to welfare allegations made at that time, these are reproduced here:

These allegations are challenging to investigate and to respond to for two primary reasons.

The first is that animal welfare means something different to different individuals and there is no standardisation of language with respect to animal welfare, something that is recognised in the innovative and encompassing Ireland's Animal Welfare Strategy 2021-2025. When interviewing individuals the use of different values and inconsistencies in evaluations is common, in part due to variable assessment methodologies, opinion and understanding which all influence the response to the question of 'what is animal welfare?' For some it is a gut feeling, the individual assessor just knowing whether an animal's needs are met but this is not objective, rarely repeatable and varies considerably between individuals; in Irish legislation, the Animal Health and Welfare Act (2013) does not define the meaning of animal welfare but clearly states in Section 11(1) the welfare needs that need to be considered: "A person who has a protected animal in his or her possession or under his or her control shall, having regard to the animal's nature, type, species, breed, development, adaptation, domestication, physiological and behavioural needs and environment, and in accordance with established experience and scientific knowledge, take all necessary steps to ensure that (a) the animal is kept and treated in a manner that – (i) safeguards the health and welfare of the animal, and (ii) does not threaten the health or welfare of the animal or another animal...A person who fails to comply with this section commits an offence" in essence a combination of the Five Freedoms and Five Needs models; in Ireland's Animal Welfare Strategy 2021-2025 acknowledgement is made to both the Five Freedoms and the Five Domains models for animal welfare and goes on to outline the 'One Health, One Welfare' concept that further evolves the idea that human well-being and animal welfare are inter-connected and inter-related; the Irish Standards of Modern Zoo Practice (2016) and the Veterinary Ireland National Council Policy Document on Captive Wild Animals (2018) both reference the Five Domains model and the promotion of positive welfare experiences rather than minimising the negative ones, this being similar in part to Ireland's Animal Welfare Strategy 2021-2025. There is commonality across all these systems

as well as the many other alternative models available, but none of these are formalised in Irish legislation. This is possibly to avoid future restrictions confined by the legislation as animal welfare science develops but this makes it difficult to review and compare individual responses to welfare cases as there is no standardised base line format exists that is utilised by both the interviewer and the interviewee.

The Irish Standards of Modern Zoo Practice (2016), however does define welfare as: "(Welfare) refers to the state of an individual animal. It describes how an animal is coping with the conditions in which it lives and how the animal perceives its experiences. Meeting the physical and behavioural needs of an animal should ensure it experiences a good quality of life. Welfare is impacted by basic foundations of care (basic survival needs) such as environmental conditions, health care, and basic nutrition. Zoos must also consider the important behavioural outcomes that are a result of the husbandry programme, such as social interaction, mental stimulation and the availability of choice. Such opportunities can promote pleasurable experiences and therefore good animal welfare. The focus in the Standards is therefore on promoting positive animal welfare states with the zoo and aquarium community". The key elements of animal welfare in this definition are that the physical and behavioural needs of the individual animal, and as part of a population, are met and that choice in meeting these needs is provided to the animals whilst in captivity. For this investigation the team opted to utilise the definition as stated in the ISMZP (2016) and the Five Domains model as this is the Standard expected to be adhered to as part of the zoo licensing requirements. The investigation team noted that many of the interviewees had different interpretations of what welfare meant to them as individuals and only a small number of staff referenced the welfare models they employed in their own personal welfare assessments. The Five Domains model also underpins Dublin Zoo's approach to welfare and as such there is some continuity between Dublin Zoo, their staff and the expectations and opinion of the investigation team.

The second challenge is that what matters to an animal in welfare terms is their subjective experience and this is difficult to measure. Presently, the majority of welfare assessment tools are broad spectrum. To determine an animal's welfare state, we must collate the objective evidence derived from consideration of factors in the first four domains (health, nutrition, environment and behavioural interactions). This is exceptionally challenging as broad spectrum or generic templates rely fully on the assessor and current literature available to ensure the correct parameters/factors for evaluation are understood and applied. Thus, the end point of assessing animal welfare can be a grey area when considering the assessment of the mental domain and the balance of the negative and positive experiences that the animal feels. This remains a challenging area in zoo animal welfare science that continues to develop as our knowledge and tools evolve to meet our understanding. Depending on the training, the knowledge or the skills set of the individual assessor welfare assessment can vary substantially and emotional or perception bias can creep in. Good examples of such challenges can be found in De Waal, 2016, Ohl and Putman (2018) and the WAZA Animal Welfare Strategy (2015) upon which the ISMZP (2016) were based.

There are a number of scenarios that are possible when considering any allegation of animal welfare, these include but are not limited to:

- (i) There are cases where it is clear that welfare has been intentionally or unintentionally compromised and the situations are black and white: cases of abuse or maleficence or even simply neglect to fail to provide for the needs of an animal which are clearly outlined and evidence is agreed with all parties witness to the event(s). In some instances a fresh pair of eyes may highlight an area of concern that has simply been overlooked by an owner. In these cases action must be taken to address the welfare situation for that animal or remove the animal from the situation that they are held within;*
- (ii) Then there are situations where welfare is perceived to be compromised depending on the view of the observer. Incidents can be upsetting or devastating to an observer for different reasons, but when objectively looking at the welfare of the individual or group of animals their welfare may have been preserved throughout and the animal treated with respect, dignity and their needs met as best as could be done in that situation or an event has occurred where it is impossible to address or change the welfare situation and outcome due to an Act of God, disease or other incident that was outside the control of the owner. This does not change the feelings of the witnesses or their valid concerns of events as they occurred, but the perception of how an animal felt or was treated may be perceived as reasonable or not based on the standpoint and cultural values of the individual witnessing the event, or the event that transpired was outside of the control of those that witnessed it, the outcome already predetermined and without influence when reviewed retrospectively;*
- (iii) Equally, in certain situations, intent must be considered where animal welfare is actively compromised temporarily to allow capture, transport or veterinary treatment of the animal that ultimately preserves the welfare needs in some areas but compromises them in others e.g. the stress of catch up of a wild animal to anaesthetise it to repair a fractured limb. In these cases decisions are made to protect the overall welfare of the animal in the long term, whilst compromising it for short periods to facilitate the long term improvement. What is acceptable to one group of individuals may not be acceptable to another, as such witness testimony can vary depending on the evidence witnessed and how it was interpreted as to whether the actions were appropriate or not;*
- (iv) Then there are cases where facts are embellished or simply made up to suit a narrative or the malicious intent of the person or persons making an allegation. This does not solely include individuals that are dishonest, simply that as time passes perception can become reality and an individual's recollection and narrative can become distorted which in turn may unintentionally compromise the facts as presented.*

Other variants and scenarios exist and are equally viable when considering allegations as stated in this investigation.

Zoo Inspection process reflective of addressing the welfare concerns

Not applicable – no specific welfare concerns noted.

Outcome of the investigation with regard to the specific case

Not applicable, simple statements with no actual welfare allegations made. This allegation was considered to demonstrate the lack of current understanding of the individual(s) making the allegations with regard to modern animal welfare tools outlined by the Standards and DAFM’s Working Together for Animal Welfare: Ireland’s Animal Welfare Strategy, which is disappointing as this was addressed in the 2022 Dublin Zoo Inspection Report which you would have thought the whistleblower(s) would have read to see if their allegations were similar or had been addressed in this earlier inspection report.

References

- Beirne (2009) *Confronting Animal Abuse: Law, Criminology, and Human-Animal Relationships*, Rowman and Littlefield Publishers, pp 252
- Cooper, Griesel and Ternes (2013) *Applied Issues in Investigative Interviewing, Eyewitness Memory, and Credibility Assessment*, Springer, pp 349
- Exall (2022) *Assessing Witness Credibility: Credibility is Not Necessarily the same things as honesty*, Civil Litigation Brief, <https://www.civillitigationbrief.com/2022/04/04/assessing-witness-credibility-credibility-is-not-necessarily-the-same-thing-as-honesty/>
- De Waal (2016) *Are We Smart Enough to Know How Smart Animals Are?*, W.W. Norton & Company, pp 352
- Government of Ireland (2013) *Animal Health and Welfare Act*, pp 81
- Government of Ireland (2003) *European Communities (Licensing and Inspection of Zoos) Regulations*, Statutory Instrument No. 440 of 2003, pp 18
- Government of Ireland (2016) *Irish Standards of Modern Zoo Practice*, pp 99
- Government of Ireland (2020) *Working Together for Animal Welfare: Ireland’s Animal Welfare Strategy 2021-2025*, pp 27
- NPWS (2022) *Dublin Zoo Special Zoo Inspection Report: 14th of July to 7th of October 2022*. pp254
- Ohi and Putman (2018) *The Biology and Management of Animal Welfare*, Whittles Publishing, pp132
- Sommerville (2021) *Changing Human Behaviour to Enhance Animal Welfare*, CABI, pp 208
- Tiplady (2013) *Animal Abuse: Helping Animals and People*, Cabi, pp 233
- Veterinary Ireland National Council (2018) *Veterinary Ireland Policy Document on Captive Wild Animals*, pp 8
- WAZA (2015) *Caring for Wildlife: The World Zoo and Aquarium Animal Welfare Strategy*, pp 87

15.0 'BUFFY' GOELDI'S MONKEY NEONATAL MORTALITY DUE TO EGGS

PREVIOUS CASE REVIEWED FROM 2022 SPECIAL INSPECTION REPORT

21.0 One hundred percent mortality of baby Goeldi's monkeys in the last two years

Date of incident:	Died 27 th December 2019 to 17 th May 2022 Alive, born 21 st November 2020 (A20M17)
Species & identification:	Goeldi's monkey (<i>Callimico goeldii</i>) Stillborn Local ID A19M57, A20M07, A21M08, A21M23, and A22M25
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation: "...ongoing issue with the Goeldi's monkey breeding programme. Keepers have raised concerns about babies dying prematurely. There has been 100% mortality rate of goeldi's monkeys babies over the past 2 years...On (?) 2 female Goeldi monkey died due to complications with her pregnancy. This could have been avoided if team leaders and management listened to staffs concerns about the diet...(diet) contained a large amount of protein and sugar. This would have a detrimental effect on the animal's health and well being".

Origin of the allegation: Protected disclosure, 8th August 2022

Documents reviewed as part of the investigation:

2017 No date	Goeldi's diet 2017
2018 23 rd May	Post-mortem report Goeldi monkey A12M58
2018 23 rd May	ZIMS specimen report for A12M58
2019 No date	Goeldi's diet 2019
2019 26 th February	ZIMS specimen report for A15M23
2019 3 rd March	ZIMS specimen report for A15M78
2019 6 th June	ZIMS specimen report for A19M26
2019 11 th June	ZIMS specimen report for A17M46
2019 18 th December	Historical diet review 2019 to 2015
2020 15 th August	Goeldi's diet diet analysis zootrition
2020 11 th June	Post-mortem report Goeldi monkey A21M07
2020 22 nd July	Note on post-mortem report Goeldi monkey A20M07
2021 3 rd June	Note on retrieved body A21M08
2021 7 th July	Note on post-mortem A19M57
2021 28 th November	Note on post-mortem A21M23
2022 No date	Goeldi's diet 2022 zootrition record
2022 13 th January	A16M37 health check notes under anaesthesia 'Buffy'
2022 17 th May	Post-mortem report for 'Buffy'
2022 17 th May	Note on post-mortem report for 'Buffy'

2022 17 th May	ZIMS Specimen report 'Buffy'
2022 18 th May	Additional note on post-mortem report for 'Buffy'
2022 7 th June	Review by EEP Coordinator for Goeldi's monkey
2022 15 th August	Complete daily analysis of diet and diet sheets x 23 docs
2022 17 th July	ZIMS Specimen report A20M17

Summary review of the documents reviewed as part of the investigation:

There are two elements to this allegation: the concerns regarding neonatal mortality associated with the Goeldi's monkey births and the influence of diet in causing the deaths.

The investigation team, rather than reviewing the last two years, extended the review period out to eight years (2015 to August 2022) to ensure that all elements of the case were assessed and to understand trends prior to the last two year period and to assess the impact of the diet change, if there was one, during this period. Second the investigation team assessed the dietary documentation and the changes and reviews that may have occurred during this time period.

Inca (A12M58) was a female that died in 2018 of typhlitis (not uncommon in the species) and prior to her death gave birth to four youngsters over the period 2015 to 2017 that all survived, two in 2015, one in 2016 and one in 2017. The two in 2015 and the one in 2017 were exported to other zoos, the third named 'Buffy' (A16M37) was retained and became the breeding female at Dublin Zoo. A new male was brought into the collection, 'Nose' (A19M26). Between 'Buffy' and 'Nose' six youngsters were born between 2019 and 2022. Of these five died, four were stillborn and one was a dystocia which claimed the life of the mother following uterine rupture despite the timely intervention by the veterinary team.

The EEP Coordinator for the Goeldi's monkey, also based at Dublin Zoo, reviewed the situation after Buffy died mid May 2022 and submitted a report via email on the 7th June 2022. In this the EEP Coordinator stated a number of salient points in this case:

- *"Infectious causes had been ruled out"*
- *"Nutritionally, their diet looks great and their requirements are being met fully.There is also less protein in the St Laurent pellets than in their previous commercial Mazuri cake, so again too much protein does not appear to be a factor".*
- *"I have compared the weights of these animals and it is apparent that there is quite a size difference between Nose and Buffy....Goeldi's range in weight from 400-550g (Note by the investigation team: Mittermeir et al (2013) reference male wild as 366g and female wild as 355g with captive animals weighing 450-600g). Buffy has always been on the lighter side (weighed 425g at post mortem) whereas Nose is on the heavy side – his most recent weight was 614g"*
- *"I have learnt a lot from this sequence of events. Weight of individual animals is not something we look at when making recommendations between animals, but it is something I will be much more aware of going forward".*
- *"I know in Dublin we have an excellent training regime with regards to weighing our animals, which not always apparent with other holders"*

- *“I also believe that three breeding attempts is fair and I will be quicker to step in and make recommendations to stop breeding or contracept animals if it goes over that number”.*

The diets were reviewed and altered in 2017, 2019, 2020, and 2022 – this does not appear to have had any impact on the outcome and the diet in the last case was considered more than adequate and had been reviewed by the veterinarians as well as section staff.

Findings of the investigation with regards to the specific case

- Mortality rates had been low with the offspring born to the dam A12M58 from the period 2015 to 2017, with 100% success rate.
- One of these offspring A16M37 (‘Buffy’) was paired with a new male A19M26 (‘Nose’) and they produced 6 offspring between 2019 and 2022, only one of which survived, the others being still born.
- The weights of the still born infants was either not report or in the two that were they were 66g and 73g, expected reported weights of new borns being approximately 45-66g in weight.
- On case review it was felt that the relatively small female ‘Buffy’ at 425g was producing large newborns which were dying during dystocia at birth, this was especially so considering the male weighed 614g i.e. the cause of the still borns was foetal oversize.
- This was not apparent as the state of many of the retrieved newborns were in a poor state and weights were not possible except in the two animals above.
- Having reviewed the case steps have been taken to change the advice to the EEP holders and take into consideration size of dam and sire when pairing individuals, this is not typical for other species but is now considered an important consideration in any breeding recommendations for Goeldi’s monkeys and this may even have implications for other callitrichids.
- Diet did not appear to be a causal factor in the stillbirths, especially the last birth as this had been actively managed due to concerns it may have been an issue with regards to foetal oversize and as such was actively managed with no change to the outcome.

Interview responses to the alleged welfare case

No. of staff interviewed:

5

- *“The diets were fine but were tinkered with to reduce protein in case this was a factor in the foetal oversize, but even with that in the last case with the caesarean the outcome was the same and the still born foetus was very large”.*
- *“There was a gap in communications, I never got to see all the post-mortems so could not act upon it” (the information).*
- *“With any female it is typical to give them three chances to learn what to do and how to rear, not uncommon to lose the first 2-3 births through inexperience across all the zoos”.*
- *“The diets were regularly reviewed with input from XX (specialist nutritionist), Edinburgh Zoo and with the team on the best practice guidelines for EAZA. Too much protein was thought to produce bigger babies but actually no evidence that this is true, according*

to the EEP veterinary advisor. Protein was not the issue here, in fact the diet had very little compared to other collections”.

- “There were some poor communications in this case but this was resolved this year with the email discussion”.

Interpretation by the investigation team

The allegation states: **“...ongoing issue with the Goeldi’s monkey breeding programme. Keepers have raised concerns about babies dying prematurely. There has been 100% mortality rate of goeldi’s monkeys babies over the past 2 years”**. The investigation team recognise that there has been a mortality pattern in the pairings of the Goeldi’s monkeys ‘Buffy’ and ‘Nose’ which represents 5/6 new-borns being born stillborn from the 27/12/2019 to the 17/05/2022. These were attributed to foetal oversize leading to dystocia and subsequent stillborn neonates. Pedantically, in the last two years from the death of the last animal there was actually an 80% mortality rate in the past 2 years, not 100% as stated as the female A20M17 born on the 21/11/2020 is still alive and weighs in at a massive 561g! However, this does not take away from the poor success rate which is not uncommon in this species. Typically mismothering and inexperience is considered an important factor with Goeldi’s monkeys and three births are the maximum number expected before a Goeldi’s monkey understands what they need to do, in this case A20M17 (the still living female) was the third birth and the next two died which raised red flags and the veterinary team worked ‘Buffy’ up ahead of her last pregnancy to try and understand the reasons behind the deaths of the neonates. These tests identified ‘Buffy’ had normal anatomy and little wrong other than some minor spinal issues which were not linked to the foetal oversize. The last two deaths were not available for weights and so foetal oversize was not possible to identify until the last foetus was passed and assessed at post-mortem alongside the dam. The inspection team believe it to be unrealistic for anyone to have identified this issue at the time and the first three were typical births for a Goeldi’s the fourth and fifth were identified as a pattern and investigated but the picture was incomplete until the sixth death. A retrospective view sees the pattern clearly now but it required the chronic long term review of this pattern to identify it, this is an unusual case and even the breeding programme coordinator had not recognised the importance of sire and dam sizes on breeding programme recommendations. As such, with regards to the allegation staff had raised issues once the fourth and fifth deaths occurred, the management and veterinarians worked the cases up and undertook due diligence and did not identify any issues in ‘Buffy’s health, nor any congenital reasons for the deaths, nor any issues with regard to the diets which had been devised and supported by recognised experts in their field. As such the inspectors note this is a sad case but was not avoidable with the information available at the time, only in retrospect can the diagnosis be made – it is also noted that the whistleblower has misinterpreted the diagnosis from the information they had available to them, this not being direct nor indirect diet related mortalities.

The allegation specifically states **“On (?) 2 female Goeldi monkey died due to complications with her pregnancy. This could have been avoided if team leaders and management listened to staffs concerns about the diet...(diet) contained a large amount of protein and sugar. This would have a detrimental effect on the animal’s health and**

well being". The investigation team do not believe this statement is supported – (i) the diet has been proven not to have been a factor in these cases, (ii) the diets were well formulated by expert nutritionists and were consistent with that fed at other collections as advised by the EEP coordinator, and (iii) the protein was considered to may be have an impact on the foetal size but this was reduced and had no affect and the veterinary advisor clarified that the link to protein and foetal oversize in callitrichids (marmosets and tamarins) is a myth. As such this opinion is outdated and misinformed with regard to its relevance but also with regard to the causal factors in this case which was simply a large male was mating a large female and producing massively oversized infants that the mother was unable to give birth to.

Zoo Inspection process reflective of addressing the welfare concerns

The death of 'Buffy' occurred the day after the formal zoo inspection and as such had not been reviewed until now as part of this investigation.

Outcome of the investigation with regard to the specific case

The case is a sad one but has been a learning lesson that has moved forwards recommendations for the long-term success of the breeding programme. The investigation team have no evidence from staff that they were ignored regarding dietary changes as evidenced from the multiple diet reviews and work ups carried out on the Goeldi's monkey population. This appears to be a case of foetal oversize which has now been recognised and has changed how the breeding programme manages breeding recommendations. There were areas where communication could have been better but the investigation team are of the opinion that even if this had been in place the lack of robust evidence of the cause only became available with the sixth death and as such the outcome would likely have been the same. As such this was not considered an avoidable series of events and any allegation suggesting otherwise is based on hindsight. It is also noted that the allegation assumes the causes were dietary related and whilst this was considered by the Dublin Zoo team as a potential issue it was proven not to be and modifications made to the diets had no impact on the outcome for the animal in this case. Evidence-based assessment led to the final diagnosis, and this has had profound positive welfare implications across the population, rather than speculation regarding the diets which, in this case, had no impact at all.

References

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16.0 'MARMADUKE' SOUTH AMERICAN TAPIR

Date of incident:	Euthanased 28 th of August 2022
Species & identification:	South American tapir (<i>Tapirus terrestris</i>) Male, 36 years and 11 months Local ID 86M002
Allegation:	

Protected disclosure: full contents not disclosed due to nature they were received in. In this case only the protected disclosure contains the allegation and as such the key elements have been taken to outline the welfare allegation:

- On Friday August 26th 2022 keeper reported 'Marmaduke' was unwell, [REDACTED] failed to come over and check on 'Marmaduke'
- The next day 'Marmaduke's' condition had worsened and [REDACTED] was called and the vet overheard the call and attended to undertake a welfare assessment
- The following day 'Marmaduke' had deteriorated further and the keeper called [REDACTED] to attend which [REDACTED] failed to do after 15 minutes, the keeper moved him into the back stalls where 'Marmaduke' then collapsed. [REDACTED] was informed that we needed a vet as soon as possible
- The first time [REDACTED] was seen by the keeper was when the decision was made to euthanase 'Marmaduke', at no time did [REDACTED] initiate contact with the keeper or follow up with the keeper regarding 'Marmaduke's' welfare
- The keeper had to do all of the chasing and felt that they were again being side-lined.

Origin of the allegation: Protected disclosure, 13th of December 2023

Documents reviewed as part of the investigation:

5 th of March 2024	Medical History Report for 86M002, 06/09/2021 to 29/08/2022
2 nd January 2024	ZIMS record for 86M002, 25/02/2020 to necropsy results 30/08/2022
29 th August 2022	Post-mortem report for 'Marmaduke'
28 th August 2022	DZ Euthanasia Decision Guide – South American tapir 'Marmaduke' 86M002 28/08/22
21 st -28 th August 2022	Daily report sheets for each day
27 th August 2022	Focal Welfare Assessment Chart 'Marmaduke' from the 21 st November 2011 to 27 th of August 2022
26 th to 28 th August 2022	WhatsApp veterinary care discussion group messages screen shots (general and specific to this case)

Summary review of the documents reviewed as part of the investigation:

'Marmaduke' was born on the 31st of August 1985 at Kilverstone Wildlife Park. The animal record only provides the records from the 25th of May 2020 to the time of his death in

2022 due to the extensive volume of the animal's records. This was considered more than sufficient for the review as the allegation focused only on the last few days of 'Marmaduke's' life.

For an aged tapir the animal records were unremarkable. Weight loss was noted in early 2021 and his face was a little shrunken (note – this comment was assumed to reference muscle or weight loss rather than a literal shrunken head). February 2021 noted a small blister over the back cranial area of the right hind, the actual location not clear initially but later identified as the pelvic/lumbar region of the dorsal back. No further mention made with regards to this until April 2021 where magpies had been pecking it, managed well and responded to treatment. March 2021 lost a number of maxillary incisors, in April it was noted he had lost a left mandibular molar. June 2021 notes start to indicate that 'Marmaduke' now walking slowly and subdued at times.

In September 2021 he was noted to have a nasty cough and some mucous was found in the enclosure. Bloody material was found in the area where he urinated. Vet attended the following day and reviewed the presumed haematuria and the excessive salivation, possible dental disease. All resolved by the next day and continued to monitor. Six days later "Marmaduke" was reluctant to eat, possible molar dental pain. Modifications made to his diet. Late September subdued and coughing a lot. Vet re-reviewed case and repeat visits through October, noted in the medical records that may be an indication for an investigation at some point. A full work up was carried out on the 7th of October 2021: case reviewed with the other vets as dental pathology present and other non-descript findings, heart and lungs appeared fine. Started on antibiotics (sulfonamides) and analgesia (meloxicam) for the periodontal disease and notes progressive improvements in appetite and weight over the next 4 months. Regular vet assessments carried out.

Mild murmur noted on the 10th of October but no evidence of oedema. Focal Welfare Assessment process started on the 10th of November 2021 by the vet and Team Leader initially, this later extends out to a total of 11 members of the team from different levels (vet, section managers, vet nurse, and keepers). The initial focal welfare assessment notes rationale for starting was "*Health and mobility and dental problems relating to age (36 years). Potential issues if can't move into pool for defecation*". Reproductive behaviours noted between 'Marmaduke' and the other females in February 2022. Fluctuating appetite continues, especially with regard to concentrates. Dietary changes made in May 2022, senior diet and took to it well.

June 2022 started showing stiffness after lying and spending more time lying down. A focal welfare assessment was carried out on the 20th of June 2022 which, in the summary, stated "*Marmaduke continues to display positive behaviours around cohorts and keepers. He was observed moving well today and also observed resting. His body condition looked improved to me today cf when last seen. He is eating very well and has been switched to a senior mix which he is accepting*".

Early July first noted laboured abdominal breathing in the morning (3rd of July, 2022), but normal movement and appetite. Re-evaluated on the 4th of July and reported acting

normally and breathing is steady with no respiratory effort noted. Routine welfare assessment of the tapirs carried out on the 13th of July. Nutrition review undertaken for the tapirs. 'Marmaduke' noted to have a body condition score of 2.5/5 (lean side of normal). The vet recommending to actively monitor the weights regularly for all of the tapirs. A subsequent welfare assessment was carried out on the 15th of August 2022 with the veterinarian, overall his body condition was stable, there was no deterioration in his condition and he was reported to have positive 'welfare domains'.

On the 26th of August 'Marmaduke' was noted to be 'dipping' on his right hind leg at times and was sucking in his stomach each time he breathes, possibly indicating heart or respiratory issues. The vet was called for. The vet attended on the 27th of August and undertook a focal welfare assessment (this involves both the vets and the keepers working together) noting that his condition was more or less the same as the previous health check (15th of August), but he now had breathing which may be indicative of a heart or respiratory issue. The animal record reports that antibiotics but was actually analgesia/anti-inflammatories, the vet reports stated: *"Marmaduke the tapir has an increased respiratory effort and abdominal breathing. This may relate to cardiac or respiratory pathology and we are going to prescribe meloxicam initially with observation of its impact. He continues to display positive behaviours around cohorts and keepers. He is eating reasonably well. He is an older tapir and keepers are observing and caring for him with great diligence"*. Similar words to the same effect were also recorded on the last of the eight focal welfare assessments documented regarding his welfare state.

On the morning of the 28th of August 2022, 'Marmaduke' was noted to be in respiratory distress and had deteriorated considerably overnight, a collective decision with the veterinary, management and keepers present felt euthanasia was in 'Marmaduke's' best interests as he was in cardiac failure. The veterinary notes state, *"Marmaduke presented with a disimproving clinical condition this morning resulting in cardiac and respiratory embarrassment. This presented itself as abdominal breathing especially after minimal movement. We used the Dublin Zoo Euthanasia Decision Guide to assess Marmaduke.*

collectively decided using the 'decision guide' that euthanasia was the best option for Marmaduke. The concern was that because of his condition he would become very compromised and stressed if he became recumbent in the pool or the habitat. The possibility of improvement with medication was very low and his quality of life was deteriorating significantly. Marmaduke was euthanised and keepers transported him to University College Dublin for post-mortem. Special note of appreciation to keepers who have cared for Marmaduke not only in his current illness but also in recent years. This care has allowed him enjoy a very good quality of life".

It is noted that on the WhatsApp group used to communicate veterinary cases, a video of 'Marmaduke's' condition was sent by [REDACTED] at 0851hrs on the morning of the 28th of August 2022 which triggered the veterinary visit and the staff attending.

In addition, the notes from the Dublin Zoo Euthanasia Decision Guide stated, *“Marmaduke presented with a disimproving clinical condition resulting in cardiac and respiratory embarrassment. This presented itself as abdominal breathing especially after minimal movement. We used the above Dublin Zoo Euthanasia Decision Guide to assess Marmaduke.*

collectively decided using the decision guide that euthanasia was the best option for Marmaduke. The concern was that because of his condition he would become compromised and stressed if he became recumbent in the pool or the habitat. The possibility of improvement with medication was very low and his quality of life was deteriorating significantly. Marmaduke was euthanised and keepers transported him to University College Dublin for post-mortem”.

The post-mortem report identified that ‘Marmaduke’ had several pathologies:

- Marked fibrosis of multiple organs – lung, heart and kidney
- Thyroid adenoma

With the pathology report summary stating, *“The marked fibrosis detected in numerous organs would explain the deteriorating health status secondary to multiple organ dysfunction. This fibrosis has likely been progressively developing over some time and is probably linked to advancing age”.*

Findings of the investigation with regards to the specific case

- ‘Marmaduke’ was an extremely aged male tapir at 36 years and 11 months old, the oldest reported in captivity was 39 years and 7 months old (San Antonio Zoo, died 2010) with the average life expectancy reported as 35 years (Padilla and Dowler, 1994).
- Respiratory signs were first noted late September 2021 and these were monitored by both staff and veterinarians, being sporadic and mixed with mostly normal periods of behaviour, including mating behaviour in February 2022.
- Laboured breathing first noted by the keepers and assessed by the vet on the same day on the 3rd of July 2022, but this was normal when the vet rechecked on the 4th of July.
- A veterinary welfare assessment carried out on the 15th of August was considered normal for ‘Marmaduke’.
- On the 26th of August he was noted to have abdominal breathing and he was assessed the following day by the veterinarian who provided anti-inflammatories and suspected cardiac or respiratory pathology.
- On the 28th of August he was found to have deteriorated considerably and this was communicated to the senior management and veterinary team at 0851hrs.
- On site assessment was carried out and a group discussion was had with the keepers, senior management and the veterinarians. Euthanasia on welfare grounds was agreed and carried out

- Post-mortem examination detected cardiac, pulmonary and renal fibrosis and a thyroid adenoma. In addition, he had considerable dental pathology as noted in the previous health checks.
- It is noted that 'Marmaduke' had multiple health checks with the veterinarian team for the last 12 months prior to his death, alongside general and dedicated focal welfare assessments specific to him which were started in November 2021 for a total of eight assessments which is approximately once a month (missed March and July 2022 only but was noted to have extensive vet assessments in July 2022).

Interpretation by the investigation team

The allegation focuses on the last 48 hours of 'Marmaduke's' life and does not discuss the prior history of 'Marmaduke' who had been slowly deteriorating over the preceding 12-18 months as an aged South American tapir. The inspection team believe this oversight to be important as 'Marmaduke' was not suddenly ill but was showing mobility, appetite and other clinically relevant concerns for a long time prior to the events concerning the allegation. Dublin Zoo had implemented the Focal Welfare Assessment process which had been in place from November 2021, effectively 9 months prior to his death. The eight focal welfare assessments documented were augmented by additional welfare assessments of the tapirs in general as well as a specific assessments of 'Marmaduke' himself. Dublin Zoo were fully aware that he was ageing and showing signs of slow deterioration which was being proactively monitored and supported. This process is well documented and provides evidence that the welfare assessments and management was a holistic process with input from the veterinarians, Team Leaders, animal keeper team and at the end the Senior Managers. The care up until his death was not in question and was not part of the allegation's concerns.

The inspection team cannot comment on whether [REDACTED] came over and checked on 'Marmaduke' on the 26th of August 2022, as this is not documented in the animal records nor other documents supplied. However, the inspection team are aware from the evidence supplied that 'Marmaduke's' condition was communicated to the veterinarians and he was put on the veterinary inspection list for the morning of the 27th of August 2022 which was the next normal veterinarian visit day. The allegation states that on the 27th of August 2022, *"The next day, Marmaduke's condition had worsened. [REDACTED] [REDACTED] on the CB radio and was overheard by the vet who was onsite. He attended, and we did a welfare assessment"*. The inspection team interpreted this statement to imply that the veterinarian only attended 'Marmaduke' as he overheard a conversation on the radio, whereas the veterinarian was already informed of 'Marmaduke's' condition and were planning to attend and assess his condition as part of the routine visit anyway. It is plausible that the list of animals to be assessed that day was changed in response to the radio call but the inspection team are of the opinion that the veterinarian was already aware of the situation and already planned to assess 'Marmaduke' on the 27th of August which the individual making the allegation may not have been aware of.

The allegation states that on the morning of the 28th of August 2022 that, *"The following day, Marmaduke had deteriorated even further. [REDACTED] [REDACTED] at 8.20am to catch*

█ before █ went up to █ asked if █ could come over and check on Marmaduke. █ waited for 15 minutes, but █ failed to show up. By this stage, █ very concerned and brought Marmaduke into the back stalls. Soon afterwards, Marmaduke was critical and we needed the vet ASAP". There is insufficient evidence to support or refute this statement. It is noted that the times are very specific and there is no note to interpret the manner in which the initial call was made, for instance was the initial call made implying that there was an emergency or dire need to assess 'Marmaduke', or was it made in a manner that suggests could █ have a look at 'Marmaduke' at some point on the day. █ was not the section head for the tapir but was █ and it is not clear whether █ was aware of the active issues surrounding 'Marmaduke' or not. This would require discussion at interview with the staff involved on the day to clarify the point, however this is not felt to be needed as there is not a specific allegation made with regard to welfare, simply communication between █ and the member of staff which is not for the inspection team to investigate as it does not appear to have led to a welfare concern in this case. The second half of these comments, "*Soon afterwards, Marmaduke was critical and we needed the vet ASAP*", was actioned immediately with the veterinarian called in and Senior Management all attending site along with multiple animal keepers, a total of six members of the animal care team (including the veterinarian) who were involved in assessing the condition of 'Marmaduke' at the time of the deterioration but also as part of the decision to euthanase him. The WhatsApp group clearly demonstrating that █ brought to the attention of the veterinarian and the General Curator the condition of 'Marmaduke' at 0851hrs which led to the team assembling, this being 31 minutes after the original call was alleged to have been made. In this 31 minute time period the keeper had contacted █ (1-2 minute conversation), waited 15 minutes for █ to arrive (15 minutes), then decided to move the animal back into the indoor habitat (estimated 5-10 minutes to achieve depending on how responsive he was), then filmed a 20 second video which identifies two keepers present with him and indicates that a number of videos were filmed and sent across (3 minutes), and █ then assessed and communicated these to the veterinarian and the Senior managers. This timeline of 31 minutes feels reasonable and staff were reported on the video to be making him comfortable and were obviously concerned about his condition and what they could do. 'Marmaduke' was never ignored and was receiving compassionate, end of life care and support at the time.

The final comment in the allegation states, "*The first time █ that day was when the decision was made to euthanise Marmaduke. In fact, that entire weekend █ never once initiated contact with █ and never followed up with █ regarding Marmaduke's welfare. I had to do all the chasing, and felt they were yet again side-lining █*". The inspection team are not clear as to the allegation being made here? The inspection team are of the opinion that the events occurred over the weekend and that █ with 'Marmaduke' was off and that the overall responsibility was delegated to █ who would have some knowledge that 'Marmaduke' was aged and his condition was slowly deteriorating but would be unlikely to have the full and intimate knowledge of the animal keeper team, the veterinarians nor █. However, the inspection team believe the responsibility

for the animal care provision sits with the keeper who then communicates this to [REDACTED] and decisions are actioned. Which is what happened over the weekend. From the 26th of August (Friday) clinical signs had been noted and these were flagged to the veterinary service; on the 27th of August the veterinarian attended and undertook a review with the keeper on the day [REDACTED] and the veterinary nurse with decisions on case management being made; and on the 28th of August [REDACTED] responded to the concerns of the keeper team on the day and called in the veterinarian, the Senior Management and a considerable number of animal keepers, including the keeper team present on the day. The allegation implies that [REDACTED] **to do all the chasing and felt that they were yet again sidelining [REDACTED]**, this narrative does not reflect the animal records and the timeline of events. It appears that the animal keeper team communicated their concerns and on each occasion these were actioned and the veterinarian attended and 'Marmaduke' was assessed and ultimately euthanased. The inspection team are of the opinion that the allegation is not one of animal welfare, in that 'Marmaduke' was under a proactive surveillance programme with both the animal care team and the veterinarians taking active roles, and not one of poor communication as the middle to senior staff acting in response to the concerns of the animal care team. In fact, it is not clear as to what the expectation of the allegation is? The ultimate decision to euthanase 'Marmaduke' was made quickly with agreement of the General Curator, veterinarian, Team Leader, and three keepers working the section that weekend, including (presumably) the individual making the allegation (or if not then they were not working with 'Marmaduke' the weekend he deteriorated and died). This is not an animal welfare issue but one of perception of the individual making the allegation and how they felt, rather than whistleblowing an animal welfare case. As for being side-lined, all of the primary care team caring for 'Marmaduke' the weekend he was euthanased were actively involved in his care and the decision to euthanase him and so this position, as per the allegation, cannot be supported. The inspection team cannot identify anything within the allegation or animal records that implies or infers that there was a welfare concern in the way this animal was managed, either for the months prior to or at the end of his life.

Zoo Inspection process reflective of addressing the welfare concerns

No mention was made with regard to this case in the zoo inspection report, other than the general comments on the high welfare standards employed across the site.

Outcome of the investigation with regard to the specific case

The inspection team are of the opinion that this is not an animal welfare issue but one of perception of the individual making the allegation and how they felt, rather than whistleblowing an animal welfare case. The inspection team cannot identify anything within the allegation or animal records that implies or infers that there was a welfare concern in the way this animal was managed. In fact, the records indicate a proactive welfare monitoring programme that was initiated in November 2021, eight months prior to 'Marmaduke's' eventual euthanasia, that involved all of his animal care team working together to ensure he had quality of life. As the veterinarian states in the final medical animal record, "*Special note of appreciation to keepers who have cared for Marmaduke*

not only in his current illness but also in recent years. This care has allowed him enjoy a very good quality of life". As such the welfare allegation is not supported.

References

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- Padilla and Dowler (1994) *Tapirus terrestris*, Mammal Species, The American Society of Mammalogists, 481, pp1-8

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION
APPENDIX 02

WELFARE ALLEGATIONS – INDIVIDUAL SUMMARY CASE ASSESSMENTS

DATE:	13 th DECEMBER 2023 – 26 th FEBRUARY 2024	
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NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
01	Killarney, Grant's zebra, female 11 years and 9 months Died 2 nd of April 2009	African Plains exhibit opening and the then Director pushed for rapid mixing to have a mixed exhibit open on time. This is alleged to have led to a rhinoceros killing a female zebra.	<ul style="list-style-type: none"> • Killarney identified as the affected zebra whom was killed by a rhino that was being chased by the rest of the zebra • Well documented in the press at the time which provided most of the contemporaneous information • No evidence provided by either party as to whether the mixing was rushed or not • Unfounded 	<ul style="list-style-type: none"> • Limited information available as 15 years after the event • Incident occurred with the outcome as described • Unable to refute or support the allegation • Mixing processes currently very different and most changed in response to the incident that occurred, as reported in the press • Mixed exhibits can occur at mixing, or in well-established situations – unable to demonstrate factors at the time and whether it was management to blame • Leadership team at the time not present in the zoo since 2018 and 2020 respectively • Unable to demonstrate any individuals at fault, precedence in other collections of zebra behaving in this manner • Narrative suggested unable to be demonstrated
02	Danny, chimpanzee, male castrate 20 years and 11 months Euthanased 26 th of May 2007	Repeated attacks from Austin, the dominant male, over months. Requests to have Danny separated he eventually died from his wounds.	<ul style="list-style-type: none"> • Danny was reported to be the aggressor against many of the other chimpanzees in his history • There were multiple fission-fusion challenges of managing the chimpanzees at the time, primarily due to their mixed origins and taxonomic changes during this period 	<ul style="list-style-type: none"> • Limited information available as 17 years after the event • Clear demonstration of multiple issues within the troop that needed to be managed, Danny was not in isolation and was managed as part of a proactive attempt to resolve historical issues

NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
			<ul style="list-style-type: none"> • Proactive behavioural, pharmaceutical and physical programmes in place with external support • There were no wounds mentioned in the animal nor medical reports for 2006 and only one in 2007 that led to his ultimate euthanasia • Danny was euthanased and did not die from his wounds as reported • Unfounded 	<ul style="list-style-type: none"> • No mention of months of attacks from Austin, although highly likely it was him that caused the injury that led to Danny being euthanased • This was not considered avoidable and there were no options for separation without further compromising his welfare • Decision makers at the time are no longer employed by Dublin Zoo and current processes are well managed and underwent a thorough assessment in the 2022 report.
03	Kipper, California sea lion, female 9 years and 8 days Died 20 th of June 2004	Kipper had a breech labour, no intervention undertaken and she was found on the third day after labour started dead in the pool.	<ul style="list-style-type: none"> • Minimal records available with only 29 entries for her entire life, 5 of which were in reference to the incident • Period of labour was 48 hours, considered a dystocia • Facilities at the time were not suitable for managing sea lions, let alone surgical management of a case • Veterinary assessment did occur and it was considered likely that there were discussions occurring on how to manage the case • It was not a breech labour but a postural defect with head first but malpositioned, possible pup oversize • Kipper was noted simply as uncomfortable and no mention of 'unrelenting calls of pain' 	<ul style="list-style-type: none"> • Limited information available as 20 years after the event • Information, and access to information, at the time was limited and case judged on contemporaneous considerations rather than current • Highly likely it was a dystocia as normal average birthing time reported as 90 minutes, not 48 hours • It was under veterinary care and no evidence to support the welfare comments in the literature, as such the narrative is not considered reflective of the events and the individuals making the allegation were unlikely to have been involved in the senior discussions and

NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
			<ul style="list-style-type: none"> • Considered likely the staff and the vet were unaware of normal parturition timelines in the species initially and treated like another mammal • Partially supported 	<p>decision making of the case at the time, this being 20 years ago and the staff member being junior at the time</p> <ul style="list-style-type: none"> • RECOMMENDATION MADE
04	Hailey, Baringo giraffe, female 19 years and 11 months Died 19 th November 2012	Found collapsed in the morning and the General Curator pushed to support and try to get her to stand and she was supported by staff that day. She died that night and her inevitable death was unnecessarily prolonged.	<ul style="list-style-type: none"> • A week prior to the event Hailey was found with blood coming out of her nostril, this was found at post-mortem to be a fractured mandible • She was found collapsed but was responsive and happily eating food throughout the day • There is insufficient detail in the records at that time to indicate the decision making process and rationale but what is present demonstrates suitable adequate care and all efforts to comfort her and attempt to get her back on her feet • No evidence of Hailey suffering or being compromised, the allegation stating only that her death was inevitable • Unfounded 	<ul style="list-style-type: none"> • There is limited documentation from 12 years ago but what is present describes a compassionate response with keepers and veterinarian supporting the animal in an attempt to give her a chance to recover • The allegation implies that “<i>I knew Hailey was dying</i>” early in the day and to try was pointless, yet she was eating and was responsive which is not the behaviour of a dying giraffe • All efforts were made and the inspection team believe this was reasonable and under veterinary guidance • This is in part a commentary on the relationship between senior management and the veterinarians but is not one of animal welfare in this case
05	Kamba, okapi, male 14 years and 3 months Died 19 th of December 2013	Noted that Kamba had been unwell a few days before and on assessment was found to be bloated and depressed. Senior Curator attended as Team Leader off, Senior Curator did not share the same concerns but did	<ul style="list-style-type: none"> • Kamba arrived on the 18th of November 2013 • There was a diet change between previous zoo and Dublin Zoo, but not an unreasonable one at the time 	<ul style="list-style-type: none"> • These cases are being reviewed as animal welfare concerns as reported, this allegation was a case description that was attended by a veterinarian. At no time does the allegation make reference to their

NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
		<p>call for the vet to attend. Over the next couple of days he deteriorated and when being darted by the vet collapsed and died. Keepers and ██████ blamed each other for the death which was considered unprofessional.</p>	<ul style="list-style-type: none"> • This was managed but he was noted on the 16th of December to have reduced faecal output and appetite • The vet attended and discussed the case with the previous collection • Gastrointestinal parasites were noted on faecal exam as part of the work up of the case • Treatment for colic was administered and in response he dropped dead • The post-mortem identified possible abomassal atony and aspiration pneumonia which led to his death • Unfounded 	<p>being failings on the part of Dublin Zoo, only conflict between staff and a disagreement between the individual making the allegation and their line manager on what is the best action to take. No alternatives were offered and no steps led to the compromise of the okapi whom had a condition that carried a grave prognosis.</p> <ul style="list-style-type: none"> • This is considered an HR issue and not an animal welfare issue, hence it is considered as unfounded.
06	<p>No-name, Baringo giraffe, female 0 days (killed at time of birth) Died 21st of May 2013</p>	<p>Senior Curator advised that an expectant first time mother giraffe (Cocio) be separated from the herd as she was expected to calve. Keepers disagreed. Cocio killed her calf as soon as it was born. Keeper disagreed and advised Senior Curator that they may have had a better outcome if they had listened and she remained in the herd. Her next calf was born successfully and she remained in the herd for birth.</p>	<ul style="list-style-type: none"> • The events are as described and the female calf was diagnosed as haemorrhage from severe trauma at post-mortem • The case is speculative as calf rejection is relatively high in giraffes with as much as 31% of animals being rejected reported in one study, which did not identify separation as being a major risk factor but lack of experience of creche rearing which was the case in this incident • Similar to other reports this is considered an HR issue and not one of animal welfare • Unfounded 	<ul style="list-style-type: none"> • There is considerable evidence that this could have gone well or ended as it did, the one single factor of being in the herd is not recognised as a core driver for success and it was standard practice at the time, with the first mention of herd deliveries being reported in June 2013. • As such, the management decision was not wrong and it cannot be stated that the outcome would have been any different if she had been in the herd, this is speculative at best. • This is considered an HR issue, similar to some of the other allegations under review, and is considered to be reflective of a

NPWS ZOO INSPECTORATE DUBLIN ZOO WELFARE ALLEGATIONS INVESTIGATION

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
				<p>dispute between the allegator and the then Senior Curator who left Dublin Zoo in 2018 (6 years ago).</p> <ul style="list-style-type: none"> RECOMMENDATION MADE
07	Blake, Grant's zebra, male 10 years and 7 months Died 16 th of May 2014	After transferring from Belfast Zoo Blake developed capture myopathy causing him muscle degeneration and weight loss. In the months to follow his condition deteriorated. Over a number of weeks ██████ for Blake to be euthanased as he was suffering and this did not happen. Blake was found collapsed and was euthanased by the then Operations Manager.	<ul style="list-style-type: none"> Blake did arrive from Belfast Zoo on the 3rd of May 2013 and did develop what was thought to be capture myopathy soon after arrival. However, the capture myopathy was treated early on and the vets resolved this condition with no further mention after the 5th of June 2013. On the 9th of February 2014 Blake had lost weight and this was thought to be linked to a heavy gastrointestinal parasite burden which was treated but persisted. He was found to be unwell around the 9-12th of May 2013 and again a heavy parasite burden was identified After he died the post-mortem report identified a severe haemorrhagic cystitis, blocked drainage from the kidneys, a fibrinonecrotising vasculitis of the urethra and pneumonia – this is highly unlikely to be related to the capture myopathy Unfounded 	<ul style="list-style-type: none"> The allegation is confused as to what killed Blake and the timelines rather than being over months were actually over a year with two separate pathologies identified during this time Blake did not require euthanasia for the capture myopathy and he recovered from this ailment which is reflective of the diligence of the vet team at the time as this was no mean feat in its own right. Blake was found collapsed and had multiple urinary tract pathologies, most likely due to a bacterial infection but this could not be identified at the time of post-mortem (which is often the case) As such the confused narrative of the allegation does not match the elements clearly outlined in the medical record, the allegation being unfounded.
08	Roisin, Kerry cow, female 4 years and 11 months Incident – April 2018	In 2016 morning inspection of the Kerry cow who had calved the previous day found her agitated and her calf lying quiet in the corner. ██████ ██████ called the vet in	<ul style="list-style-type: none"> Only Kerry cow to calve was identified in April 2018, not 2016 This animal was assessed by a vet and the calf reported to be "Very active and running around. Keepers are unsure he 	<ul style="list-style-type: none"> The medical record clearly demonstrates that the cow and the calf were healthy and that the cow was producing milk from the left side with only the right being

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		<p>response to the keeper's concerns, and they attended and noted that the milk caps had not been detached, once these were removed the calf was seen to suckle. The following Monday morning [REDACTED] returned to work and reprimanded the keeper for the fuss over the cow. [REDACTED] spoke to the vet and he said the keeper had made the right decision and it could have led to the calf and cow being compromised.</p>	<p><i>took colostrum although they have seen him drinking. Mum is very anxious and would not hesitate to charge...</i>", the diagnosis was reported as a healthy calf</p> <ul style="list-style-type: none"> • The vet confirmed during the assessment that "Her teats were also examined and the 2 teats on the right were plugged/blocked. All teats milked and plugged ones unblocked" • The keeper had not assessed the calf prior to the vet being called and had not checked to see if there was a suckling reflex or milk available in the udder • The calf was not at risk based on the veterinary assessment but the keeper went to a second vet after they were reprimanded and it is suspected gave them their version of events, not that in the vet report. • Unfounded 	<p>blocked which was easily milked out (and likely would have been by the calf)</p> <ul style="list-style-type: none"> • This case raises concerns in that the keeper fails to demonstrate basic calf management and an ability to identify basic steps in assessing a cow and a calf, this being a failure of the keeper • In addition, the keeper does not appear to have learnt from the initial first vet inspection of what had occurred and that there was no risk to the calf, this then being miscommunicated to the second vet • Whilst the inspection team note it is always better to be cautious the competency of the keeper in this case is considered to have been woefully inadequate and failed to learn from the event • Again, this is not considered to be an animal welfare issue but is an HR issue and a competency failure on the part of the keeper
09	<p>No name, bongo calf, female 6 days old Euthanased 19th of August 2013</p>	<p>In 2017, Kimba, noted to be in labour at morning inspection, keeper made her comfortable but on later inspection noted she was in too much discomfort. Asked [REDACTED] to call vet but advised that she is fine and give her time. Eventually the vet was called and</p>	<ul style="list-style-type: none"> • Noted at morning checks that Kimba was in labour on the morning of the 13th of August 2013, not 2017 as stated • The vet assessed in the afternoon but she was resting and advised would come back and re-review if not 	<ul style="list-style-type: none"> • The narrative of the allegation does not match the medical records which demonstrate a morning of watch and wait which is reasonable in most calving events, followed by veterinary assessment and decision to leave for a few hours and then

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		<p>the vet determined an emergency caesarean was required, otherwise we may lose her and the calf. The vet, vets from UCD, the Senior Curator, Team Leader and several keepers stayed into the night to assist, we saved Kimba but unfortunately the calf did not. The keeper believes that if their concerns had been acted upon sooner then the calf would have had a better chance of survival.</p>	<p>progressed, UCD put on stand by at this time</p> <ul style="list-style-type: none"> • The vet revisited in the evening and not progressed, moved to sedate and identified a uterine torsion – caesarean carried out under local block, calf delivered alive • Calf managed for 6 days but had splay legs but bonded well with the dam, it slowly deteriorated over the next three days and was taken to UCD • It continued to deteriorate and eventually was euthanased • At post-mortem it had two congenital defects of the heart as well as bilateral traumatic hip dislocation • Unfounded 	<p>intervention – the whole event’s timeline would have remained unchanged if the vet had been called earlier as they assessed and left to come back to reassess</p> <ul style="list-style-type: none"> • In addition the allegation infers that the calf died during delivery, whereas it was delivered successfully and was euthanased 6 days later due to its condition deteriorating which was found in part to be due to the dislocated hips but also the significant congenital hole in the heart and patent ductus arteriosus. Neither of these would have been changed by a timely intervention • Similar to other cases this appears to be a simple HR issue between the individual making the allegation and the senior management team.
10	<p>Trouble, ostrich, female 7 years and 3 months Died 3rd November 2017</p> <p>REPRODUCED FROM 2022 REPORT AS NO FURTHER INFORMATION IN THIS CURRENT ALLEGATION</p>	<p>Between 2017 and 2018 an ostrich mated with a large male who was too heavy for her and broke her pelvis. She was left untreated for approximately 8 months, she was found dead in her pen.</p>	<ul style="list-style-type: none"> • Trouble was identified as the presumed ostrich with a fractured pelvis the cause was unknown • Cage rest and pain relief was the appropriate treatment regime following identification of the fractured pelvis and this was started September 23rd 2017 • Unfounded 	<ul style="list-style-type: none"> • Clinical signs of lameness started on the 23rd August 2017, she received treatment on the 24th August 2017 including pain relief until she died. • She did not respond as expected and so a full examination under anaesthesia was undertaken on the 14th September when she was radiographed and the fractured pelvis (synsacrum) noted

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No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
				<ul style="list-style-type: none"> • Trouble died from aspergillosis on the 3rd November • She died 6 weeks after the diagnosis of the fractured pelvis was made • There was no evidence nor recollection from staff of the fracture being caused by a heavy male ostrich mating her
11	Neema, Baringo giraffe, female 7 years and 5 months Died 10 th of June 2016	Reported as occurring in 2017. Following a veterinary procedure for hoof care Neema had collapsed overnight and was in a weak state. Senior staff were notified. The Senior Curator made the decision to assist her to stand, which the keeper felt was the wrong decision. Neema did manage to stand but fell again. At this time the keeper left to continue with other work. The vets were contacted and soon after Neema died.	<ul style="list-style-type: none"> • On the 9th of June 2016, not 2017 as stated, Neema underwent footcare work. The recovery was prolonged, likely due to challenging aspects of the anaesthetic as reported in the post incident review carried out by the zoo. • She was left inside on her own to recover overnight and was found collapsed on arrival the next mornign by staff and despite best efforts she died shortly afterwards • Post-mortem was unrearding but was thought to be linked to the anaesthetic • Unfounded 	<ul style="list-style-type: none"> • This is not considered a welfare case in that the animal was anaesthetised to ensure the welfare of the animal to allow appropriate foot care, the animal failed to recover adequately from the challenging anaesthetic and was found collapsed. The team did all they could do to assist her, the individual making the allegation leaving before she had recovered or was euthanase don welfare grounds, and she died soon after. The post-mortem suggestive that this was anaesthetic related which is not uncommon. • The team did everything they could to support the giraffe and give Neema a chance • Similar to other cases this appears to be a simple HR issue between the individual making the allegation and the senior management team.

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No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
12	Isiro, okapi, male 18 years and 5 months Died 25 th of June 2018	Isiro was noted to have slipped twice on section and the keeper suggested slip-proofing the floor to stop him sliding. ██████████ disagreed and advised the bark substrate was fine. Months later Isiro was euthanased due to a fracture in his hind quarters.	<ul style="list-style-type: none"> Isiro had a lengthy history of shifting lameness, predominantly in his hind limbs Only two slips were reported in his medical record, one on the 4th of March 2018 and one on the 18th of June 2018 He was reported to be walking fine on the 19th of June but was very stiff, unsure if metabolic or neurological following review of CCTV by the vets Found dead on the morning of the 25th of June 2018 Post-mortem identified a left humeral fracture that likely occurred on the 18th of June, as well as kidney disease and chronic ulceration of the left hip joint Unfounded 	<p>Not a welfare case occurring due to failings by the Dublin Zoo management team.</p> <ul style="list-style-type: none"> Isiro had an active veterinary assessment programme in place and he had ongoing lameness and possible metabolic or neurological changes that were noted from reviewing CCTV, this all being under veterinary care He did not fracture a hind limb but a fore limb and the cause was not considered slipping due to substrate but due to functional compromise, either neurological, metabolic or possible arthritic The allegation appears to be a leap from one statement being perceived to be ignored that ignores the lengthy medical history and links it to this one comment which was not the case, hence unfounded due to unawareness of the wider picture that led to the injury that caused his death
13	Sloth house temperatures Not applicable Incident 2 nd and 9 th of July 2021	The sloths were too warm in their habitat on the 2 nd of July 2021, ██████████ informed could it be turned down from 30°C to 23°C which ██████████ agreed and claimed it was the plumber that had done it. On the 9 th of July the thermostats had been turned back up to 30°C and	<ul style="list-style-type: none"> Extensive review of datalogger information from the house since the event and comparison to ambient temperature against the dataloggers and comment made back to ambient temperatures at the time, a total of 10 months worth of temperature data reviewed 	<ul style="list-style-type: none"> No evidence that there was compromise of animal welfare on the 2nd of July 2021, on the 9th of July 2021, nor any time between July 2021 and present day in the records provided – extensive reviews of the data available

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No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
		<p>again the sloths appeared to be too warm. ██████████ again claimed it was the plumber but this information was not captured in the daily diary. The allegation states, <i>“This was another episode where poor communication resulted in the animals’ welfare being compromised”</i>.</p>	<ul style="list-style-type: none"> • Temperatures during the allegation period appear to have been within species defined ranges and so compromise of the animals’ welfare was unlikely • In addition, there were no records in the animal daily record for the whole of July 2021 nor the medical and animal records from 2021 to present day suggesting any behavioural or welfare compromise • Improvements could be made in how data is processed with regard to temperature but this is not relevant to the allegation • Unfounded 	<ul style="list-style-type: none"> • The keeper perceived that the sloths were too warm despite them being well within the thermal range provided by other collections and they had access outside if they so wished • Keeper daily reports written by a single person for the whole of July, apart from one entry, which gives confidence if there were issues they would have been captured and it was also noted that the ambient temperature outside increased significantly in the second half of the month with no concerns documented then or to date following this incident • Unable to demonstrate welfare issue and that any changes made since then have not resolved, hence unfounded • RECOMMENDATION MADE
14a	Citron-crested cockatoos Mixed, management concerns Incident: 216-2022	<p>The cockatoos have spent considerable time in the quarantine facility which is not designed to house animals longterm and is completely unsuitable for the cockatoos’ wellbeing and social requirements which hinders their vital breeding programme.</p>	<ul style="list-style-type: none"> • At the start of the allegation the oldest bird was 2 years old and the youngest wasn’t born, sexual maturity for the birds is reported to be 5-6 years as a minimum despite being able to breed from 2 years of age – the birds only now coming of age suitable for a breeding programme • The aviaries meet the minimum requirements for a cockatoo as outlined in the EAZA Husbandry guidelines, 	<ul style="list-style-type: none"> • The allegations demonstrate a lack of understanding of the minimum requirements for these birds and what best practice is with regard to breeding psittacines of a suitable age • Dublin Zoo are considered to be acting responsibly towards the cockatoos but also with regard to the rodent progginf changes made to their on-show aviary in 2023

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No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
			<p>both on show and in the quarantine facility</p> <ul style="list-style-type: none"> There is an extensive enrichment programme and the birds have been managed as per the recommendations of the EEP Unfounded 	<ul style="list-style-type: none"> As such, the individual making the allegation does not appear to be aware of the processes and conservation actions of the wider zoo and the steps taken to ensure the welfare of the birds, as such unfounded RECOMMENDATION MADE
14b	<p>Bird collection No specific birds No specific incident</p>	<p>Dublin Zoo had an extensive collection of endangered bird species, but has more or less transferred all its endangered bird collections out of the zoo. It is a poor reflection on the part of Dublin Zoo that the two studbook species that Dublin Zoo manage, the citron-crested cockatoos and Goeldi's monkeys have been deprived of the Five Animal Freedoms.</p>	<ul style="list-style-type: none"> First part is a comment on the collection planning that has no impact on the welfare, indeed it could be argued is due to the welfare of the birds they have reduced the collection size. Not a welfare issue. The second part simply states that the cockatoos and the Goeldi's monkeys welfare needs are not being met as per case 14a and Case 15, which is demonstrated not to be the case Unfounded 	<ul style="list-style-type: none"> Simply no evidence in this statement to indicate a welfare failure, and points to Cases 14a and Case 15 which are both considered unfounded and the individual unaware of the complete details of either case. Hence, unfounded.
15	<p>Mortality rates of Goeldi's monkeys Still births February 2019 to May 2022</p> <p>REPRODUCED FROM 2022 REPORT AS NO FURTHER INFORMATION IN THIS CURRENT ALLEGATION</p>	<p>Issues with Goeldi's monkey breeding programme, there has been 100% mortality of the Goeldi's monkeys over the past two years. Keepers have raised concerns . Could have been avoided if team leaders and management listened to staff concerns about the diet.</p>	<ul style="list-style-type: none"> Mortality rate of the Goeldi's monkeys over the last two years was 80% but this is still considered high Investigated by the vets and the EEP breeding programme manager, considered foetal oversize issue between the breeding pair (all mortalities due to this pair) Dam died with last foetus, diagnosis made at this point Changes to breeding programme recommendations made to prevent this happening at an EAZA level 	<ul style="list-style-type: none"> Inspection team reviewed the mortality patterns as far back as 2015 to 2022 to ensure capture picture of historical processes and the high mortality rate recently Previous breeding female produced four offspring, all lived to adult age Current, recently deceased breeding female produced 6 offspring from 2019 to 2022, only one survived. Typical for three attempts at rearing a youngster for this species as

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No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
			Unfounded	<p>mortality relatively high, however these were stillbirths – foetal oversize diagnosed (see case discussion for details)</p> <p>No evidence of diet nor nutritional issue – reviewed and produced by experts, supposition on the part of the allegation</p>
16	Marmaduke, tapir, male 36 years and 11 months Euthanased 28 th of August 2022	<p>On the 26th of August 2022 keeper reported Marmaduke unwell. The next day his condition had deteriorated, keeper called [REDACTED] and the vet overheard the conversation and attended, they carried out a welfare assessment. The following day Marmaduke’s condition had deteriorated further and [REDACTED] was called at 8.20am to ask for [REDACTED] to come and check on him, [REDACTED] failed to turn up after 15 minutes. By this time the keeper took the animal into the back stalls where he collapsed and [REDACTED] was informed that a vet was needed ASAP. The first time the keeper saw [REDACTED] was when the decision was made to euthanase him. Over the entire weekend [REDACTED] never once initiated contact with the keeper, the keeper having to do the chasing regarding Marmaduke’s welfare. The keeper felt they were yet again sidelining them.</p>	<ul style="list-style-type: none"> • Marmaduke had a long standing and ongoing condition which had resulted in him having focal welfare assessments started on the 10th of November 2021, a complete work up in October 2021 and at least one veterinary assessment every month for the last 12 months of his life. He was an aged tapir with a number of co-morbidities which were being actively managed and monitored. • Laboured breathing was first noted on the 3rd of July 2022 but soon returned to normal. • 15th of August he was considered normal at the vet check • The abdominal breathing started on the 26th of August 2022 and was followed p with a veterinary assessment the following morning, this was prebooked in with the vet, not a sporadic event as inferred in the allegation – prognosis was guarded and the vet suspected cardiac or lung disease, treatment was issued 	<ul style="list-style-type: none"> • The case management occurred over a period of 12 months and was rapidly managed over the last weekend of his life. • The timeline in responding to the staff concerns was considered rapid when broken down into what occurred in the time period following the first call made at 08.20hrs • All of the staff present on the day were able to contribute to the euthanasia decision and are named on the review document. • Staff were deployed on section to look after ‘Marmaduke’ and where concerns were raised by the keepers these were acted on, including calling the vet and making sure Marmaduke was assessed on the Saturday • There is no evidence to suggest any staff involved with Marmaduke over the weekend were not actively involved in his care or the decision making process at the end of his life

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			<ul style="list-style-type: none"> • On the 28th of August the first call was alleged to have been made at 0820hrs, then the keeper waited 15 minutes, it now being 0835 when they moved Marmaduke back in and he collapsed, this being approximately now 0840-0845. A couple of videos were recorded and sent to [REDACTED] who reviewed them and then shared them on the WhatsApp case management group at 0851hrs, a delay of maybe 5 minutes at most. At this point the vet and General Curator assembled and met on site not long after • The euthanasia decision process was enacted and involved the vet, General Curator, [REDACTED] and three keepers, two of which were the people who had been providing the support that morning as identified on the video – they are all named in the medical report and on the euthanasia decision process. • Unfounded 	<p>and that it was the correct action to take.</p> <ul style="list-style-type: none"> • It is not apparent if the individual making the allegation was present working with Marmaduke on the weekend he was euthanased or whether they were elsewhere, if the former then they were actively involved in the decisions made and if not then they were not contacted simply because this was a dynamic event and there were sufficient staff present to make the decision. It is noted that the actual Team Leader for the section was not contacted as part of the euthanasia discussion to give one example of how the event was prioritised. • Hence, the comments were not perceived to be a welfare allegation as Marmaduke’s care was given priority as far back as November 2021, this case was considered an HR issue with the individual making the allegation conflicted with the Senior Managers and how they treat them, as such the animal welfare allegation was unfounded.

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION
APPENDIX 03

INVESTIGATION TEAM RECOMMENDATIONS AND CONDITIONS

DATE:	19 th MARCH 2024	
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The following are recommendations and conditions made by the investigation team in response to the findings of the investigation. Recommendations are comments to improve in certain areas but are not considered mandatory, whereas conditions are a mandatory requirement that Dublin Zoo must undertake following the appeal period of 28 days allowed by the legislation.

RECOMMENDATIONS

1. It is recommended that the zoo licence holder, working with their veterinary team, produce a written parturition and dystocia birthing plan for the California sea lions if they are to be managed as a breeding population. This should outline the normal processes pertaining to the management of parturition in the California sea lion and action plans to be implemented in the case of dystocia or other medical requirements during abnormalities in parturition, such management including surgical and anaesthesia requirements as well as protocols of when to intervene. See case 03.
2. It is recommended that the zoo licence holder, working with their veterinary team, produce a written birthing plan for the giraffes if they are to be managed as a breeding population. This should outline the normal processes pertaining to the management of parturition in the giraffe and action plans to be implemented in the case of dystocia or other medical requirements during abnormalities in parturition, such management including surgical and anaesthesia requirements as well as procedures of when to intervene. It is recommended that the birthing plan also include social management, pre-parturition management and other factors, both pre-and post-parturition that may impact the success of a birth bespoke to the challenges or benefits of the Dublin Zoo giraffe house. See case 06.
3. Whilst there are no immediate concerns with regard to the citron-crested cockatoos' management or husbandry, it is recommended that this is assessed and the documented findings of this report are confirmed either by a special inspection or by the zoo inspectors at the next formal zoo inspection. This should include confirming the future management plans and the suitability of the current situation for the birds as well as the future management and development plans for this programme. See case 14a.
4. It is apparent that many of the welfare complaints made in the series of allegations found in this report are primarily human resources-related issues rather than animal welfare concerns. It is recommended that communication methods and programmes with regard to the animal team are reviewed to see if these issues are across the whole team or are limited to a small subset of staff whom have individual communication requirements. It is also noted that many of the complaints predate the existing management team.

END RECOMMENDATIONS
CONDITIONS

1. In accordance with Sections 2.1, 2.2 and 2.6 of the ISMZP (2016) the zoo licence holder must undertake a review of the Linné's two-toed sloth enclosures within the South America habitat with regard to the management of the temperature and humidity provision suitable for both the sloths and the other species held within the shared enclosure or space, if environmental parameters are shared. The review must consist of:
 - a. a documented environmental monitoring plan that demonstrates the expected normal temperature and humidity range for the species held;
 - b. the methodology to demonstrate that the appropriate designated temperature and humidity is being maintained within the enclosure in the areas where the animals are generally found;
 - c. that the thermostat or other controls are referenced against the actual temperatures provided within the animal enclosures and external ambient temperatures or weather conditions if these impact the management of the internal habitat temperatures or humidity;
 - d. the variation of the thermoclines provided within the enclosure and the duration of the maximum and minimum temperatures experienced by the animals over a 24 hour period; and
 - e. the actions to be taken if the temperature and humidity move towards or exceed the maximum and minimum parameters set by the licence holder. Where parameters fall close to threshold points the actions taken must be documented and the return to expected reference ranges demonstrated.

The written plan must be completed and submitted to the licensing authority within 2 months of this condition taking effect and demonstration of its implementation within one month of the plan being submitted. Records must be maintained demonstrating its implementation for assessment at subsequent zoo inspections.

END CONDITIONS

END REPORT