Statement: Dublin Zoo Special Inspection Report (January 2025 to March 2025)

Following a comprehensive and thorough investigation into animal welfare allegations made via an anonymous protected disclosure and received on January 20th, 2025, the independent international inspectors appointed by the National Parks and Wildlife Service (NPWS) have categorically reiterated that "the staff at Dublin Zoo have the best interests of the animals [in mind], as individuals or as populations, in everything that they do" (see page 14 of the report).

The NPWS-appointed inspectors reviewed six allegations of animal welfare breaches in the period from 2018 to 2025, with the full co-operation of Dublin Zoo. The report published below shows that all six cases "were considered to be unfounded, with no evidence supplied to support the narrative of the allegation, yet considerable evidence to refute the inferred allegation" (page 13 of the report).

In all six cases, "there was robust evidence to demonstrate the narrative [of the allegation] was not as per the evidence available" (page 13 of the report).

Dublin Zoo handles any issues raised by staff regarding animal welfare with the utmost seriousness, and each is investigated thoroughly. The allegations investigated in this report, as in two previous investigation reports that we have published on our website, were made anonymously, with no effort to consult with Dublin Zoo to verify their legitimacy.

Each of these reports has demonstrated a lack of evidence to support the narrative of the allegations, and in this latest report, the inspectors state that "the credibility of

many of the allegations is brought into question" and that "a similar pattern was found in the 2022 and 2024 allegations" (page 11 of the report).

In categorising all six allegations as unfounded, the report recognises that the Zoo "promoted animal welfare throughout their animal practices," reflected in the Zoo's "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 of 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" (page 12 of the report).

Dublin Zoo is grateful for the rigorous and impartial review conducted by the NPWS-appointed inspectors, and we are pleased that once again Dublin Zoo's outstanding track record in animal welfare management and the reputation of our dedicated team of employees and volunteers have been upheld in the face of baseless, anonymous accusations.

An tSeirbhís Páirceanna Náisiúnta
agus Fiadhúlra
National Parks and Wildlife Service

DUBLIN ZOO SPECIAL ZOO INSPECTION REPORT 2025

January 2025 to March 2025

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DUBLIN ZOO SPECIAL INSPECTION WELFARE ALLEGATIONS INVESTIGATION FINDINGS

INTRODUCTION

The following investigation resulted from the provision of a partial protected disclosure provided to the National Parks and Wildlife Service (NPWS) at the end of 2024. A redacted version, focusing on the animal welfare concerns, was given to the NPWS zoo inspection team on the 20th of January 2025, they made a provisional assessment of the allegations made to compare them against previously investigated complaints. This initial review was completed on the 21st of January 2025 and identified a total of 6 complaints. The 6 cases were determined to be new allegations against Dublin Zoo and ranged across a period of 2018 to 2025. Following this initial review, it was recommended that the 6 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 6 cases forms the basis of this special inspection. A second partial protected disclosure was received by the department on the 17th of February 2025, and these covered the same areas of concern; even if the 'allegations' were worded differently, these were simply amalgamated with the original concerns and investigated simultaneously.

WELFARE COMPLAINTS TIMELINE SUMMARY AND COMMENTS

- The protected disclosures mentioned 6 separate cases.
- The 6 cases spanned a period from 2018 to 2025, a period of seven years.
- Of the 6 cases, 2 were with regards to the death of individual animals and 5 with regard to alleged compromised welfare (Case 03 included general welfare complaints and the death of 2 animals, elephants in this case).
- Following the executive summary, the inspection team's findings are summarised. Appendix 01 outlines the primary case reviews, Appendix 02 provides a summary of the case findings, Appendix 03 outlines any enforcement actions recommended, and finally, Appendix 04 provides a full review of all Dublin Zoo allegations since 2022.

EXECUTIVE SUMMARY OF THE INSPECTION REPORT

- 6 animal welfare allegations were made against Dublin Zoo spanning a period from 2018 to 2025.
- Of the 6 cases, 2 were with regards to the death of individual animals and 5 with regard to alleged compromised welfare (Case 03 included general welfare complaints and the death of 2 animals, elephants in this case).
- 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 identified that additional interviews and a site visit was required and this was carried out on the 4th and 5th of March 2025.
- In addition to review of submitted documents, a site visit was undertaken on the 4th and 5th of March 2025. At this investigation visit staff were interviewed and the locations of each allegation was visited and assessed, including examination of any animals affected where this had been deemed necessary as part of the pre-inspection assessment.
- Similar to the findings of the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022' and the four separate investigations since then, the allegations referred for 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 veterinarians, or the animal records related to the cases.
- In several cases, basic details such as sex, time of events, and simple facts were confused, and certain elements had been incorrectly recorded. The inspection team believed the sources were third-hand rather than primary sources; this was confirmed in protected disclosure 01 and partly in protected disclosure 02.
- Of the 6 allegations, they were assigned to the following case categorisations:
    - 1 allegation was considered as (1) No evidence to support the allegation, this being the chimpanzees being locked indoors for over two years, however this was also classed as (3) as the chimpanzees did exist and there were other separate concerns, as outlined in Appendix 1
    - 5 allegations were considered as (2) Evidence to demonstrate the allegation refers to an actual case, and of these all 5 were considered as (3) No evidence to support the narrative of the allegation;
    - Case 6 fell into both categories (3) and (4) as there was evidence that the concerns had occurred but that Dublin Zoo had taken and continued to take action to mitigate the issue.
    - 2 allegations were given the additional categorisation 'HR' as Cases 02 and 03 contained elements of staff criticising senior management decision making.

  These individual cases are summarised following this Executive Summary.
- A new categorisation was added to category 3 with the primary category sub-divided into categories (a) and (b), with category 3(a) identifying where there is robust and credible evidence to support that the alleged event did not occur as the narrative of the allegation suggested, with the evidence assessed demonstrating that the welfare provision did meet the needs of the animals concerned; and category 3(b) where there is insufficient evidence to support the allegation but also a lack of evidence to suggest that it did not occur, such cases where a lack of evidence of poor welfare occurring was equally considered not to

be evidence of good welfare having been provided, and the inspectors were unable to identify whether there was a failure of welfare provision or not. Such cases were not considered able to be taken further due to the lack of credible evidence either way. All of the cases were classed as Category 3(a).

- 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.
- Since the last inspection Dublin Zoo has two demonstrable additions to their animal welfare portfolio.
    - Lucy Rutherford has been employed as Dublin Zoo's first dedicated Behaviour and Welfare Scientist. The first equivalent role employed full-time in Ireland.
    - Dublin Zoo was officially recognised as a Global Humane Certified Zoo, awarded by the American Humane Society, the 150-year-old authoritative voice of animal protection and welfare and an internationally recognised force for promoting humane treatment and awareness, in February 2025 following a robust and independent inspection by the Humane Society's allocated inspection team. Not only does this satisfy the call for an independent inspection of the welfare state of Dublin Zoo but it also supports the findings from the special inspection reports carried out since 2022 by NPWS. Details can be found at https://www.americanhumane.org/press-release/dublin-zoos-commitment-to-animal-welfare-confirmed-by-global-humane-certification/

Dublin Zoo Welfare Allegations Investigation Team Findings

Case Allegation Assessment Score - The Development of a Standardised Method of Case Classification for Categorising Welfare Case Reviews

In response to complaints made at the Seanad Éireann with regard to animal welfare concerns at Dublin Zoo in July 2022, the then investigation team identified a need to clearly delineate beyond a simple 'yes' or 'no' assessment with regard to the allegations made at that time. The majority of the allegations were complex cases, with elements of truth and varying degrees of perceived interpretation of the facts of the case which varied, either due to the quality of the source, the quality of the information, or whether the whistleblower was present or was reflecting on documents or observations made by other members of staff. As such the investigation team assigned each case to a finding of unfounded or supported, with sub-categorisation to one of five categories which would demonstrate the justification behind the assigned decision.

ACTUAL EVENT OR NO EVIDENCE TO SUGGEST THE EVENT OR ANIMAL EXISTED

In the first instance, a case was assessed as to whether the allegation was made with regard to an actual animal or event. The case was then assigned to either **Category 1** (no such animal or event existed) or **Category 2** (the allegation referred to a real animal or event).

CASE ASSESSMENT SUMMARY

The second categorisation of an allegation fell into one of three categories:

- **Category 3** (there was robust evidence to demonstrate that narrative of the allegation did not support the factual evidence identified by the inspection team, or the individual making the allegation failed to provide any evidence to support their allegation or the allegation lacked any credibility),
- **Category 4** (the allegation was reflective of the events that occurred, however Dublin Zoo identified the issue at the time and took steps to ensure it did not occur again in the future), and
- **Category 5** (the allegation was reflective of the events that occurred and Dublin Zoo had not taken action to resolve the active or potential welfare event at the time and there is a current risk of it repeating in the future).

An allegation may have been accurate in part (e.g. the animal had existed), however following assessment of the narrative or welfare allegation the investigation team could consider an allegation as either supported or 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, or whether the perception of the witnesses were poorly reflective of the events as they transpired. Assignment to a category by the inspection team was made based on the evidence available, either that provided by the whistleblower, Dublin Zoo or contemporaneous sources independent of both the whistleblower and Dublin Zoo available from the time of the alleged event.

SUB-CATEGORISATION OF CATEGORY 3 TO DEMONSTRATE CREDIBILITY AND ROBUSTNESS OF EVIDENCE

Category 3 has since been re-evaluated and the decision made to highlight the evidence-base behind assigning a case to Category 3. These new sub-categories were implied in the original definition but have been formalised in this newprocess, they are:

- **Category 3(a)** identifying where there is robust and credible evidence to support that the alleged event did not occur as the narrative of the allegation suggested, with the evidence assessed demonstrating that the welfare provision met the needs of the animals concerned; or
- **Category 3(b)** where there is insufficient evidence to support the allegation but also a lack of evidence to suggest that it did not occur, such cases where a lack of evidence of poor welfare occurring was equally considered not to be evidence of good welfare having been provided, and the inspectors were unable to identify whether there was a failure of welfare provision or not. Such cases were not considered able to be taken further due to the lack of credible evidence either way. At the time of writing none of the Category 3 cases fall in sub-category 3(b), including those from 10-20 years previously.

The categories are outlined below:

CASE ALLEGATION ASSESSMENT SCORE (CAAS) CATEGORIES

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

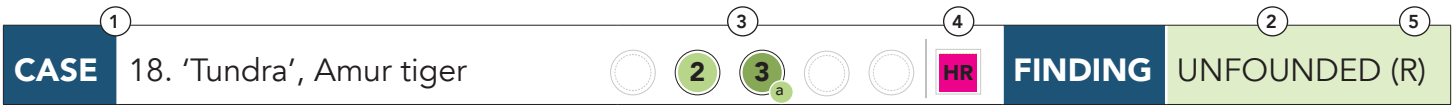
4 Evidence supports the historical allegation, Dublin Zoo have resolved

(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

CASE ALLEGATION ASSESSMENT SCORE SUMMARY



Case Allegation Assessment Score Summary: each summary card has the same layout: (1) a brief case summary to provide identifiers to allow identification of the case, (2) the final opinion of the investigation team as to whether the allegation was supported or unfounded, (3) the assignment of a Case Allegation Assessment Score to demonstrate the rationale behind whether an allegation was supported or unfounded, (4) an additional categorisation of HR where an allegation was primarily one of personal issues between staff or employer and not one of animal welfare, and (5) an indicator where further action has been taken, with 'R' identifying that a recommendation has been made for Dublin Zoo to consider and 'C' a condition has been made that Dublin Zoo must adhere to enforcement action taken by NPWS. In this summary document an additional case number has been included demonstrating the total number of allegations made or re-made, these do not typically appear in standard investigations.

Each case has been assigned a summary 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 can be seen above.

This process has since been adopted in response to ongoing welfare concerns since the original Dublin Zoo complaint in 2022 to ensure that there is a consistent and standard methodology to assign a case assessment and final decision for each separate case. In December 2023 an additional criteria was added: Human Resources (HR). This has been used to demonstrate that allegations referencing welfare concerns were considered by the inspection team to reflect differences of opinion or conflict between staff and management, the case itself not being a welfare issue in itself. In March 2025, Category 3 was sub-categorised as outlined above and this was retrospectively applied as part of a complete welfare case retrospective review of all of the allegations since 2022.

CASE	01. 'Old Gorilla House' chimps	**FINDING**	UNFOUNDED (C)
CASE	02.'Mujur', orangutan	**FINDING**	UNFOUNDED (C)
CASE	03. Asian elephant transports	**FINDING**	UNFOUNDED
CASE	04.'Ernie', common hippo	**FINDING**	UNFOUNDED
CASE	05.''Imani', common hippo	**FINDING**	UNFOUNDED
CASE	06.'Heidi', common hippo	**FINDING**	UNFOUNDED (C)

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

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 two partially protected disclosures provided on the 20th of January 2025 (protected disclosure 01) and the 17th of February 2025 (protected disclosure 02). The initial protected disclosure had instigated the investigation site visit, and the second set of allegations covered most of the same material that had already been planned to assess and so was simply included in the existing investigation. 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 was 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 20th of January 2025. This investigation was carried out without prejudice and solely reviewed the factual evidence made available to the investigation team.

It is noted that at the time of completion of this investigation report that both protected disclosure 01 and 02 were the **first** formal allegations regarding concerns of animal welfare at Dublin Zoo that have been made directly to the NPWS Zoo Inspectorate.

The allegations are reviewed in order as outlined by the protected disclosure provided on the 20th of January 2025, and the 17th of February 2025

INFORMATION SOURCES FOR THE INVESTIGATION

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

- the first partially redacted protected disclosure provided on the 20th of January 2025 and the second provided on the 17th of February 2025;
- 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 individuals raising the welfare concerns, the investigation team was aware of the identities of the authors of protected disclosure 02 but not those making protected disclosure 01. 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 that was carried out in Phase 01 of the 'Dublin Zoo, Special Zoo Inspection Report, 14th of July to 7th of October 2022'. This is a comprehensive review of the Protected Disclosure received on the 20th of January 2025, 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.

A site visit inspection was carried out on the 4th and 5th of March 2025, where the locations of the allegations were visited and assessed, the animals mentioned in the allegations were clinically assessed (where appropriate or possible, as some had left the country), and interviews were had with the CEO, General Curator, Behaviour & Welfare Scientists, Team Leaders and the veterinary team. This was deemed necessary due to the complexity of some of the allegations and the allegations commenting on specific elements of the facilities and/or pathology or injury to the animals themselves.

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 January 2025 identified 6 welfare allegations. Due to the number of allegations, the seven-year period over which they spanned (2018 – 2025), and the complexity of many of the cases, this investigation needed to be extensive and required multiple 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 multiple documents, which were cross-referenced against technical bulletins and peer-reviewed scientific papers, which were then compared against the statements in the allegations, and these were then verified or investigated on-site at the zoo and the collected evidence 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 20th of January 2025. This was a redacted protected disclosure and concerned only the section regarding 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 six allegations were considered to fall into one of five groups:

- No evidence to support the allegation (1/6 cases)
- Evidence to demonstrate the allegation refers to an actual case, animal or event (5/6 cases)
- No evidence to support the narrative of the allegation (6/6 cases)

- Evidence supports the historical allegation, Dublin Zoo has resolved the issue (1/6 cases)
- Evidence supports the allegation, Dublin Zoo have not resolved the issue (0/6 cases)

In addition to the standard 5-categories classification developed for the 2022 Dublin Zoo Special Inspection Report, the additional category HR was retained from the 2023-2024 Special Inspection Report.

- The number of cases that were considered to be predominantly HR concerns or had elements that were considered to be predominantly HR related, rather than any specific issues of animal welfare were recognised (2/6 cases)

In this inspection, the addition of sub-categories Section 03 were introduced to demonstrate: 3(a) identifying where there is robust and credible evidence to support that the alleged event did not occur as the narrative of the allegation suggested, with the evidence assessed demonstrating that the welfare provision did meet the needs of the animals concerned; and 3(b) where there is insufficient evidence to support the allegation but also a lack of evidence to suggest that it did not occur, such cases where a lack of evidence of poor welfare occurring was equally considered not to be evidence of good welfare having been provided, and the inspectors were unable to identify whether there was a failure of welfare provision or not. Such cases were not considered able to be taken further due to the lack of credible evidence either way. All of the cases reviewed in this investigation were classed as category 3(a).

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 was brought into question and made the assessment of each case challenging for the investigation team. A similar pattern was found in the 2022, 2023 and 2024 allegations.

As a result, the investigation team had to identify the cases where there was an element of fact, 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 many of the allegations not being questions of welfare failure but simple statements or questions as to why the events took place, yet in doing so the allegations inferred that welfare failures had occurred. Where the concerns were poorly communicated, the inspection team determined that it was prudent to consider the query as if it implied failure by Dublin Zoo to assure the welfare of the animal or animals and assess the allegation based on the perception or assumed intent, rather than simply dismiss it as a question that the NPWS was unable to answer.

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

- Several of the cases demonstrated that the whistleblower(s) were poorly informed as they lacked the correct information either due to not being present when the case occurred or they had not been made aware of all of the details at the time of the event. A good example is case 05, which involved the hippopotamus 'Imani' who arrived with cataracts but manages to navigate her environment well. The allegation states that she is a 'he', has the month wrong for when she arrived, states that she had no access to the outside months after her arrival, but she did within 48 hours, and the allegation implies that delaying the surgery will cause her to go blind, which she already is.
- 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.

Whilst many of the cases were relatively easy to demonstrate that they 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 Dublin Zoo had taken proportionate action to attempt to resolve the welfare situation. 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 essential to ensure that if there were welfare concerns then each case be assessed with regard to its own merit and the case then compared to the allegation itself. 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 that of the six welfare allegations, the following could be robustly evidenced:

- Category 1: 1/6 cases clearly demonstrated that the allegation was incorrect and there was no evidence to support any elements of the welfare concerns;
- Category 2: 5/6 cases referred to actual animals or events that had occurred.;
- Category 3: of these 6/6 cases were considered to be unfounded with no evidence supplied to support the narrative of the allegation, yet considerable evidence to refute the inferred allegation. Specifically, all 6 of the cases fell into Category 3(a), where there was robust evidence to demonstrate the narrative was not as per the evidence available.
- Category 4: the one exception included in the Category 3 cases was Case 06, which was not supported as per the narrative implied but did demonstrate that the hippopotamus 'Heidi' did have magpie-peck injuries. However, Dublin Zoo had mitigation measures in place which reduced the impact but were, at the time of inspection, unable to prevent it entirely. This is a challenging case and mirrors other zoos or sanctuaries that have similar issues with magpies feeding from tissue or blood on their larger mammals;
- Category 5: there were no allegations that fell into the category where 'Evidence supports the allegation, Dublin Zoo have not resolved'.
- HR: two of the allegations fell into the HR category.

The investigation team's final position on the welfare allegations was that none of the cases were considered to reflect the listed or inferred concerns and as such all of the cases were considered unfounded. However, there were improvements that could be made and these are outlined in the recommendations made to NPWS as to recommendations and conditions that should be issued to Dublin Zoo.

In summary, of the 6 allegations pertaining to animal welfare breaches at Dublin Zoo the investigation team found no evidence to support any of the allegations made. 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. 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. This is supported by the independent assessment carried out by the American Humane Society and the provision of Dublin Zoo as Global Humane Certified Zoo and Aquarium.

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 provided and staff were candid, highlighting successes, failures and areas where things worked well and areas that needed improvement. Without the frank and honest

interviews, a clear picture could not have been generated, and this was much appreciated by the inspection team.

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 complete or assure the robustness of the existing policies where gaps were identified by the investigation team.

CLOSE

The investigation team either took the allegations as stated, or as inferred, 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. 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 with the outcomes of these investigations and the independent audit of the zoo that has resulted in Dublin Zoo's recognition of their commitment to animal welfare as confirmed by the award of Global Humane Certified Zoo and Aquarium, as presented by the American Humane Society.

END

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION
APPENDIX 01

WELFARE ALLEGATIONS – INDIVIDUAL DETAILED CASE ASSESSMENTS

DATE:	21st JANUARY 2025– 4th MARCH 2025

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 'AUSTIN' & "BOSSOU' CHIMPANZEE MANAGEMENT

Date of incident:	Both animals alive Transfer to 'Old Gorilla House' 17th of February 2022 - Present
Species & identification:	• Chimpanzee (*Pan troglodytes*) 'Austin' Castrated male, 34 years and 1 month (DOB 22/01/1991) Local ID A0M074 • Chimpanzee (hybrid) (*Pan troglodytes*) 'Bossou' Castrated male, 21 years and 6 months (DOB 21/08/2003 Local ID A3M049

Allegation:

Protected disclosure 01: 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:

"Two adult, male, castrated chimpanzees, one of which is severely disabled, have been held in the 'Old Gorilla House' on the far side of the zoo for the past few years, without outdoor access and with no natural light. The zoo consistently denies this and staged a public relations event where the animals were forced into the outdoor enclosure for a photoshoot one morning in July of this year. They had not been outside before that date and have not been since, according to animal care staff and regular zoo visitors who we have been in contact with. What are the plans for these chimpanzees? Why are they not on show to the public?"

Protected disclosure 02: first email complaint with regard to Dublin Zoo sent directly to the NPWS Zoo Licensing Team:

"We are also concerned about the well-being of two male chimpanzees who have been separated and held in the old gorilla enclosure with no access to the outdoor area except for very short and limited periods. Chimpanzees' have highly complex family and social interactions which are essential for good welfare. Keeping them isolated in the old gorilla house is in sharp contrast to their welfare needs".

Origin of the allegation:	Protected disclosure 01, 20th January, 2025 Protected disclosure 02, 17th February, 2025

Documents reviewed as part of the investigation:

3rd of March, 2025	Chimp group management discussion
3rd of March, 2025	Dublin Zoo Diet Sheet: Chimpanzee
3rd of March, 2025	Farside chimpanzee diet modification request form
2nd of March, 2025	Chimpanzee House Draft Scope CIP Version 01

28th of February, 2025	Chimpanzee enrichment diary Jan to Feb 2025
28th of February, 2025	Behavioural heat maps, Zoo Monitor, Feb 2025 (most recent)
4th of February, 2024	'Bossou' Medical Records, Feb 2022 to Feb 2025
29th of January, 2025	Risk Assessment Working With Chimpanzees
29th of January, 2025	Safe Working Practice Working With Chimpanzees
28th of January, 2025	Chimp group management discussion
25th of January, 2025	'Austin' Medical Records, Feb 2022 to Jan 2025
6th of January, 2025	'Bossou' Quality of Life Assessments March 2023 to Jan 2025
5th August 2024	'Betty' Post-mortem report
29th of July, 2024	Dublin Zoo Mid- and Long-term Management Plan Chimpanzee
18th of July, 2024	'Betty' DZ Euthanasia Decision Guide
13th of July, 2024	'Betty' Focal Welfare Assessment Nov 2021 to July 2024
Unknown, 2023	Using the Welfare Quality framework to develop a welfare assessment protocol for captive chimpanzees, MSc dissertation
October, 2022	Dublin Zoo Special Zoo Inspection Report, 14th of July to 7th of October 2022

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

- 'Austin' and his son 'Bossou' were castrated and underwent dental work on the 28th June 2013. The reason for castration was the result of a review of the chimpanzee populations at that time and Austin, and therefore Bossou, were noted to be hybrids and could no longer form part of the breeding programme. Austin was the dominant male. Their teeth were filed and underwent root canal surgeries by an experienced zoo dentist on recommendations made at the time to Dublin Zoo by external specialists.
- 'Marlon' the new breeding male was brought into the group in 2014. He was laboratory reared and lacked certain social skills, the full group being integrated by 2015. Austin resumed the dominant role with the support of the females.
- Female chimpanzee 'Florin' died 27th September 2020 (basilar artery emboli) who was a supporter of Austin and this destabilised Austin's support network with changes in the hierarchy occurring and typical aggression lead dominance. Marlon became the dominant male soon after.
- Marlon's history and limited social skills meant not always presenting normal interactions with other males. However, biting incidents were rare but severe when they did occur.
- Bossou was bitten and this led to digit injuries that were treated but for several digits led to amputation on welfare grounds and clinical recommendations:
    - 17th November 2020 first significant bite injuries to digits, note 2 months after the death of Florin (died 27/09/2020)
    - 18th February 2021 surgical amputation of right fore digit 3 & right hind digit 3
    - 22nd April 2021 surgical amputation right fore digit 4
    - 30th April 2021 surgical amputation right fore digit 2
    - 1st September 2021 surgical amputation of right fore digit 5 and left fore digit 4
    - 17th February 2022 moved to the old gorilla house

- Support over the duration of the case was provided by Edinburgh Zoo, University of Montreal, Twycross Zoo, University College Dublin, Perth Zoo and the EEP breeding programme managers for chimpanzees.
- Marlon underwent a canine dental associated abscess in May 2021 which was considered possibly related to the aggression noted. This is clearly seen in the footage from 'The Zoo'.
- 'Austin' and 'Bossou' both moved together to the 'Old Gorilla' House on the 17th of February 2022. They were anaesthetised and underwent full health checks. 'Betty' was also transported to the 'Old Gorilla' House, although she was moved conscious in a transport crate. The move was well planned and accordingly uneventful.
- 'Betty' settled in well but slowly deteriorated over the next 18 months, passing away on the 23rd July, 2024, after she was euthanased due to a reduction in her quality of life which had been proactively managed using focal welfare assessments. At post-mortem the clinical diagnoses were confirmed and she had extensive osteoarthritis, chronic renal disease, and other age-related pathologies expected for a 62-year-old, female chimpanzee.
- 'Bossou' has adapted well to the amputation of his right fore digit 2, 3, 4 and 5; right hind digit 3; and left fore digit 4. Bossou is considered mildly impaired and his amputations are not considered to have had a behavioural impact, he has a normal gait and is not considered by the team as being 'disabled'. In the last 9-12 months he has started to dominate the food items and has put on excessive weight, this has not been helped by issues with the weigh scales in the house which has led to intermittent weighing rather than regular weighing. He is considered overweight. In the Focal Welfare Assessments the amputations are regularly reviewed as a significant part of the wider welfare assessment, concerns are rarely raised and locomotion is considered normal. This has been verified by review of the medical records and at inspection with the inspection team spending reasonable periods of time with 'Austin' and 'Bossou' whilst reviewing both the animals and the facility. Full details of his injuries and subsequent rehabilitation can be found in the Dublin Zoo Special Zoo Inspection Report 2022, Case 8.0, pp119-124.
- 'Austin' has equally appeared to respond well to his new facility. The only area of concern noted in his notes is the slight loss in muscle mass and weight since March 2023. Whilst this could be a medical problem, it is more likely due to 'Bossou' taking a more dominant role now over his father.
- Both 'Austin' and 'Bossou' have 24-hour access out into the outdoor and indoor enclosures, except during cleaning periods which vary from 1-2 hours.
- A number of plans have been discussed, the last major review prior to this year was July 2024. In January 2025 meetings were had to finalise a management plan to resolve the situation for the chimpanzees at both sites and the first steps have been implemented with discussions with the EEP management programme. There are a number of factors involved in resolving the current situation, this being a complex situation. However, the primary factors are (i) the rehoming of 'Marlon' to a bachelor group where he will benefit for his own experiences but it also removes his poor socialisation skills which was one of the more significant factors in 'Bossou' losing his digits, (ii) modifications of the African Plains Enclosure, which requires that Marlon is rehomed and the remaining members of the troop move into the 'Old Gorilla House' whilst the changes are made. These are the critical pathways to achieving success, however, there are multiple other challenges that

must be overcome to resolve the current situation of the troops fragmentation. The ultimate aim is to reintroduce the chimpanzees and create a single troop again. This is likely to take 12-18 months.

Findings of the investigation with regards to the specific case

- 'Bossou' is not considered to be severely disabled, he is missing multiple digits, however this has not compromised his ability to interact and undertake species appropriate behaviour.
- Both 'Austin' and 'Bossou' have 24-hour access to indoor and outdoor areas, except during cleaning or enrichment periods, or in severe inclement weather. They were both already provided with 24-hour access at the time of the inspection and had been for some time. The thermal maps generated by Zoo Monitor confirmed the enclosure use, with the inside being favourable but equivalent time spent outside, albeit this was during February on the physical example provided and the weather had been inclement.
- The indoor area has a large sky light built into the roof, which is a little aged and opaque but allows natural light into the main area, the side pens have robust chimpanzee-proof glass windows and no ability to close these off, and the chimpanzees have access to outdoors for the majority of the time (weather and servicing schedule dependent).
- The chimpanzees are not directly on show but can be seen from certain vantage points and were noted to be outside by the inspection team from a point on the other side of the lake.
- They have regularly been outside, there is simply limited viewing points for visitors to see them.
- There is extensive enrichment provided, and some training to a degree, depending on the involvement of the chimpanzees. These are also supported, in the case of 'Bossou', with regular focal welfare assessments, a process that was undertaken with the zoo inspectors during the inspection – this was considered to be of a high quality and all of the care givers for the chimpanzees had input with each person treated equally and their comments considered in the development of the management plans.
- The senior management have been in discussion with the EEP for some time now and regularly reviewed management plans have been put in place to attempt to resolve the fragmentation of the troop into two groups (this is outlined above). Documents and discussions have been produced with multiple internal and external stakeholders providing advice and this has been implemented with a clear strategy to resolve the issue, hopefully by the end of 2025, if not 2026.

Interpretation by the investigation team

The protected disclosure 01 allegation opens with "***Two adult, male, castrated chimpanzees, one of which is severely disabled,…***". The inspection team have discussed 'Bossou's' case with the animal care team, veterinarians, and senior management as well as have assessed his medical and husbandry records, including interaction with enrichment, and his enclosure usage monitoring results from Zoo Monitor and there is no evidence that his injuries hold him back in any way. He is considered to be behaving normally and this is reinforced with his dominant position over 'Austin. 'Bossou' was assessed on the first day of

the inspection and he was further monitored during the Focal Welfare Assessment, on both instances his gait and behaviour appeared similar to a chimpanzee with no amputation injuries, not just in general locomotion but equally when undertaking dextrous activities. Whilst there is definite scope for improving the environment to provide access to height and increased activity, he was considered normal in his behaviour and making the best of the environment he is in. This is a similar position to that described in the Dublin Zoo Special Inspection Report 2022.

Both allegations stated that the two chimpanzees had not had access to the outside areas of the facility. The protected disclosure 01 stated, "***Two adult, male, castrated chimpanzees, one of which is severely disabled, have been held in the 'Old Gorilla House' on the far side of the zoo for the past few years, without outdoor access and with no natural light.***" and the Protected disclosure 02 allegation stated, "***We are also concerned about the well-being of two male chimpanzees who have been separated and held in the old gorilla enclosure with no access to the outdoor area except for very short and limited periods***". The investigators believe these to be spurious claims based on misinformation as there is robust evidence that both 'Austin' and 'Bossou' have 24-hour access to the outside areas of the enclosure except during significantly inclement weather (i.e. below thermal thresholds set for the animals) or during cleaning and servicing of the facility for the protection of the animal care team. The investigators discussed this statement with the management, veterinarians, and the animal care team that work directly with the chimpanzees. In addition, there were thermal activity maps demonstrating enclosure use which are based on amalgamated data from hours of behavioural monitoring by the Animal Welfare Officer, this is demonstrated below for both animals:

Figure 01.01: Zoo Monitor software is used to reflect collected behavioural data as graphical representations of enclosure use. This data collected from January 2025 demonstrates that during the colder weather periods the chimpanzees favour the indoor areas which are heated but also enjoy the elevated platforms outside where they have a clear view of the zoo. These have been used to identify that there is a need to review how the staff can modify the enclosure to increase the spatial use, although that is likely to occur simply as the weather warms up. Plans are in place for modification to both the inside and outside areas based on the data collected with this relatively new software.

The inspection team noted that 'Austin' and 'Bossou' had outdoor access on three occasions during the inspection, two when the house was visited and a third time at the end of the first day where the chimpanzees could be seen from across the Lake, from the opposite side of the facility. Whilst readers of the report may wonder if this was staged for the inspection as reported in the allegation, however, the inspectors do not believe this to be the case due to the overwhelming other evidence which includes (i) the behaviour of the chimpanzees which was that of animals confident and comfortable to come and go between the indoor and outside areas as they pleased whilst the inspectors were in the facility, not animals that were being let out for the first time in a long whole; (ii) the verbal confirmation from management, animal care team, and the veterinarians stating that they had continuous access outside, these individuals were all open and transparent in their discussions with the inspectors, being critical of certain aspects of the programme and positive where it was working and what the future plans may bring; (iii) the behavioural monitoring data provided by the Animal Welfare Officer for the zoo who is independent of the animal team clearly demonstrates the enclosure usage both inside and out, and (iv) the pathways and wear and tear on the grass in the outside enclosure where the chimpanzees have regular access (such examples can be seen on the google map images used in the Zoo Monitor enclosure usage maps in Figure 01.01 above), these were considered as being due to chimpanzees did not have regular and constant access. A 'conspiracy' involving all these individuals and co-factors, such as the chimpanzees themselves being in on the subterfuge, is not a rationale consideration and as such the inspectors are confident that these chimpanzees have access to the outside areas for 24 hours-a-day.

The protected disclosure 01 also stated that the chimpanzees were "…***without outdoor access and with no natural light".*** The inspectors are confident that this is not factually true. Other than having access to the outdoor area for 24 hours daily (other than during servicing and inclement weather periods), the main indoor enclosure roof is approximately 20% skylight which allows considerable natural light into the indoor enclosure, and the second main enclosure ('maternity den') has a moderately sized thickened glass window that also allows natural light to enter the enclosure. These are supported with ancillary lighting as may be required (see Figure 01.02.

The protected disclosure 01 also goes on to say, ***"They had not been outside before that date*** *(July, 2024)* ***and have not been since, according to animal care staff and regular zoo visitors who we have been in contact with. What are the plans for these chimpanzees? Why are they not on show to the***

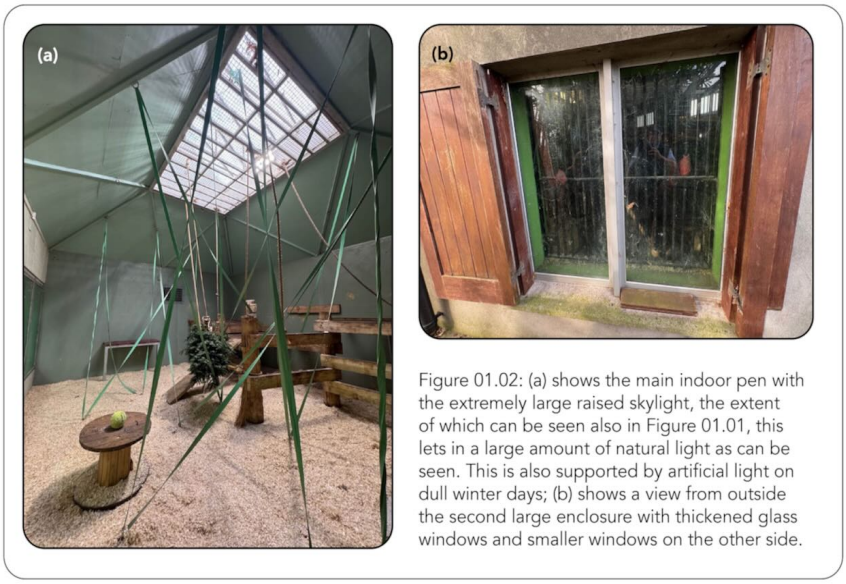


Figure 01.02: (a) shows the main indoor pen with the extremely large raised skylight, the extent of which can be seen also in Figure 01.01, this lets in a large amount of natural light as can be seen. This is also supported by artificial light on dull winter days; (b) shows a view from outside the second large enclosure with thickened glass windows and smaller windows on the other side.

public?". The first part has been demonstrated above as being misinformation, likely as a result of the individual(s) making the allegation acting on second hand information as indicated by the comment ***"…according to animal care staff and regular zoo visitors who we have been in contact with…"***. The second part was interpreted by the inspection team as a contradiction – if the 'regular zoo visitors' believe that the animals have not been outside from 2022 all the way to now, other than an alleged photoshoot in July 2024, the question is how do they know that as the chimpanzees are not on show to the public, which is evidenced by the final statement of the sentence, "***Why are they not on show to the public?"***. The inspection team did not speak to any members of the public with regard to this case (this did not seem appropriate), however the animals can be seen from a distance if the chimpanzees are sitting on their platform from across the lake. This part of the allegation is correct in that they are not on display to the public but this is in part due to the nature of the enclosure and this having been designated as an older, now off-show facility that is still a useful second building that provides for the needs of the chimpanzees, both for husbandry and as a secure facility. It is considered a transition facility for multiple species from great apes to big cats. The inspection team were of the opinion that if Dublin Zoo wishes to maintain the chimpanzees off-show whilst the wider husbandry issues are resolved and this is in the best interests of the two animals, especially when considering 'Bossou's' relationship with 'Marlon', then why should this not be permitted? There are several animals off-show kept at Dublin Zoo and many other zoos, its not unusual.

Finally, the protected disclosure 01 asked, "***What are the plans for these chimpanzees?"*** and Protected disclosure 02 stated, "***Chimpanzees' have highly complex family and social interactions which are essential for good welfare. Keeping them isolated in the old gorilla house is in sharp contrast to their welfare needs***". Firstly, in response to the issues raised by protected disclosure 01, the inspection team have reviewed the clear and planned management strategy for the chimpanzees at Dublin Zoo. The aim is to reintegrate the chimpanzee troop into one unit. The route to this is not as definitive as the inspectors would like, this being due to a number of external factors which are outside of the control of Dublin Zoo. However, despite this there is confidence from the inspectors that the programme is realistic, considers multiple options, including alternative plans, and will be successful even if the initially planned programme requires adjustment and response to the external factors already mentioned. The two main challenges are (i) the existing facilities are functional but are 25 years old now and require modification and renovation to future proof the housing needs for the next 10-+ years and (ii) the social legacy problems of 'Marlon' have not been overcome despite proactive and concerted efforts by the Dublin Zoo team.

In the first instance the plan is to renovate the house and at this time of change in the group dynamic it provides an opportunity to temporarily relocate the chimpanzees and modify the house with improvements planned for heating, lighting, sprinkler systems, animal management, staff safety and to a lesser degree visitor experience. There are a number of options on the table with a shared goal of reintroducing 'Austin' and 'Bossou' back into the main troop.

The second instance is challenging and there are several options available for 'Marlon', with the likely aim that he will be rehomed to a bachelor group where he is known to have

integrated well before coming here to Dublin Zoo. Other options are being considered, and his welfare interests are being prioritised in conjunction with that of the other animals in the troop. Discussions have been ongoing for some time and formally started with The 'Great Ape Care' workshop in Dublin Zoo, 7th December 2022. This initially started with reviews and improvements in nutrition, enrichment, training, health and safety improvements and targeted assessments of the social dynamics across all of the great ape species held at the zoo. This promoted the provision of improvements in evidence-based species appropriate husbandry combined with welfare assessments and auditing that changes were effective. This has resulted in a programme that provides for the needs of the animals but one that is also continually audited and critiqued by the animal care team and the veterinarians. This has reached a ceiling both due to the facilities available and the social dynamics of the two populations, mostly in part due to the challenging nature of 'Marlon' in a larger social network. This next phase focuses on overcoming these two significant challenges.

The management of 'Marlon' (or possibly 'Bossou') has been actively discussed with the European Endangered Species Programme for nearly a year now and a number of options for rehoming have been identified. This is expected to be resolved in the next 6-9 months; however it is partly outside of the control of Dublin Zoo. Once a clear pathway is identified and which animals will move where, this will allow the next stage of moving towards restoring a functional chimpanzee group, with the plan to reunite all of the chimpanzees residing in the zoo into their designated habitat.

The inspection team agree with the statement from protected disclosure 02 in that, "*Chimpanzees' have highly complex family and social interactions which are essential for good welfare.*". Chimpanzees do have highly complex family and social interactions, and they are essential for good welfare. 'Austin' and 'Bossou' did share the facility with 'Betty' who was euthanased on the 23rd July, 2024, since then they have been maintained as a pair. This is recognised by Dublin Zoo as being far from ideal and this is reflected in the management minutes, Chimpanzee Group Management Discussion minutes, and in discussion with the team. The Chimpanzee Group Management Discussion meetings occur every two weeks as they prioritise the resolution of the current situation. These are well-informed discussions that take into account the needs, both physical and behavioural, of the individuals, balanced against the social network challenges present in the troop and the troop's needs as they currently stand. There has been a lot of work up until this point and there are a number of proactive solutions that are beyond the scope of this inspection report to outline in this dynamically changing situation. The inspectors do not believe that the 'Old Gorilla' House is in itself an issue for managing the welfare of the two castrated males as there are considerable opportunities that this space offers, however it is not considered suitable as a forever home for chimpanzees and the lack of additional chimpanzees is a significant requirement for the medium to long-term provision of the social welfare needs of the species. To put this in context the Global Federation of Animal Sanctuaries (GFAS) requires a minimum indoor area of 18.6m^2 per compatible pair and a height of 4.6m, the 'Old Gorilla House' has an indoor area 186.9m^2, literally 10x larger than the minimum GFAS requirements, and height in excess of 4.6m.

One area where the inspectors felt could have been improved, with hindsight, is that steps could have been taken to implement the strategy much earlier on. 'Betty' was an aged chimpanzee and strategies were in place to be implemented when she died. However, eight months on after when the strategy was produced (early July 2024) and when 'Betty' died (late July 2024) these strategies yet to be fully actioned, nor have alternative strategies been captured in the primary Mid and Long Term Management Plan for Chimpanzees which was last updated 8 months ago. Instead this document appears to have been superseded by the Chimpanzee Group Management Discussion meetings and the inspectors were of the opinion that the actions to be taken from these meetings should be audited and actions implemented expeditiously when looking to make incremental gains in the welfare provision for the chimpanzees, especially where the actions are not dependent on external factors such as the provision of roof feeding and opening up the outside enclosure views into the off-show woodland areas. However, in contrast to this the inspection team are also aware of the importance of long-term assessment of captive chimpanzees to allow a full and complete understanding of the social dynamics in a population (e.g. Pascual et al, 2023) before any decisions are made as to what may be in the best interests of the population, this may go some way to explain the delays as more behavioural data was collected and assessed.

These minor complaints aside, the inspectors recognise that all efforts are being actively considered to resolve the social situation for the chimpanzees and this is welcomed and appropriate. These are not simple problems that can be easily resolved, the only other option would be to consider euthanasia, a position Dublin Zoo is actively attempting to avoid. The complexity of the challenge does not solely sit with Dublin Zoo and any relocation must be planned and ensure that the welfare considerations for an individual animal are not simply moved "out of sight, out of mind", but are considered both from the point of the individual but also the population at the receiving zoological collection or sanctuary. Dublin Zoo is very aware of its responsibility to the chimpanzees in its care and could easily have discharged that responsibility by making easy decisions historically, instead they have focused on giving a number of socially challenged chimpanzees, many from ex-laboratory backgrounds, an opportunity to develop and become complete chimpanzees. In some cases, this has worked well, in others not so well. The current situation is not perfect, the Dublin Zoo team recognise this, but there is a focused plan that builds on the proactive welfare provision for the chimpanzees already in place as they implement the strategy, working with multiple external stakeholders, to reintegrate the troop as one. The reality is that the programme to resolve the social and facility issues is likely to take 12-18 months and in the meantime this needs to be considered against making modifications to assure the behavioural management for the smaller troops is optimal until they are reintegrated. The inspection team are confident that this will be achieved.

Zoo Inspection process reflective of addressing the welfare concerns

The case management of 'Bossou' was discussed in detail at the October 2021 zoo inspection as well as at the The Dublin Zoo Special Inspection of the 15-25th of August 2022, which is comprehensively reviewed under Case 8.0 pp119-124. The 'Old Gorilla House' was assessed on the walk around at each annual inspection and no concerns were documented with regard

to the management of the chimpanzees in this section of the zoo, nor were concerns raised by the staff to the inspectors nor the department until this time.

Outcome of the investigation with regard to the specific case

The investigation team identify two components to this allegation: the first is the misinformation that appears to be the focus of this allegation, the second is the management of the complex societal elements of the chimpanzee management at Dublin Zoo.

The inspection team have identified considerable robust evidence, using multiple sources, that clearly demonstrate that both 'Austin' and 'Bossou' have almost constant access over a 24-hour period to the outside areas of the chimpanzee facility, since they arrived in 2022. On reviewing the 'Old Gorilla' House the facility has a huge skylight and the side pens have reinforced glass windows, both allowing natural light into the indoor areas. The allegations that the chimpanzees are locked inside with no access to natural light is not reflective of the management practices undertaken and both these statements were considered to be untrue, as such they are unsupported.

The concerns with regard to the social management of the chimpanzees are in part factual in that the troop was split in February 2022 and initially consisted of Group 01 1.2.0 and Group 02 with 2.1.0 and this has left small social groups that to some degree lack the social dynamics that benefit captive chimpanzee troops. Recommendations vary for optimal group size, examples include: the AZA Chimpanzee Care manual recommends a group size, dependent on facility design, of 3.5.0 and dependent offspring, or bachelor groups of males; the National Institute of Health recommends a minimum size of no less than seven individuals; and the EAZA Best Practice Guidelines Great Ape Taxon Advisory Group Chimpanzees does not specify a minimum size, but provides examples that vary from 6 to 18. Neal Webb (2019) recommends seven or more. Due to the separation of the troop, primarily due to the relationship between 'Marlon' and 'Bossou' the troop became 2 groups of 3, however with the death of 'Betty' this has now become a group of 3 and a group of 2 with 'Austin' and 'Bossou'. Dublin Zoo recognises that this is not where it needs to be and has actively pursued options to manage this. Much like the challenges of managing 'Marlon' and 'Bossou' which was given every opportunity but failed and resulted in their segregation in February 2022, the current situation has been trialled and given the opportunity for 'Marlon' to develop his social skills with the smaller female group but he has failed to achieve this, most likely due to his upbringing in a laboratory setting. Dublin Zoo has accepted this position and the priority is to rectify the social groupings and reinstate the troop, whether that requires 'Marlon' to move to a different situation or 'Bossou'. The likelihood of being able to move 'Bossou' as a castrated male is low and he integrates well with the other animals, as such 'Marlon' is the primary individual that would benefit from transfer into a bachelor situation. Dublin Zoo is looking at all options, but this appears to be the most likely one and is being explored with EAZA and a number of sanctuary type collections experienced in managing challenged males. The plans to deliver this are currently being negotiated with the various options for taking the male, with representatives having come from other collections to assess the individuals prior to any move being agreed. This is not a rapid process and in the case of 'Marlon' should be complete this year. That then allows the other elements required to adapt

and improve the facilities and look to bringing the troop back as one and adding a number of additional chimpanzees, to bring the final troop up to 3.4.0, with a new male and two females planned to create a seven strong troop.

The social dynamic currently is not considered optimal by the inspection team and Dublin Zoo. However, the inspectors do not support the statement that the chimpanzees are isolated, which is interpreted by the inspection team as a chimpanzee existing in a lone state. This is not the case, and whilst two is not seven chimpanzees and the social-welfare provision is lacking choice, there is still considerable options for the pair to engage in and this is demonstrated in the Zoo Monitoring data and the in discussions with the animal care teams, with both animals having individual time and group time of their choice as they use their enclosure. As such, the inspection team are of the opinion that the majority of the complaint is unfounded but the social groupings does need addressing and Dublin Zoo has an active plan which is in the third year of a three-year plan to address the situation without having detrimental impacts on individuals or the Dublin Zoo chimpanzee population. Indeed, Dublin Zoo is commended on the considered and persistent attempts to give socially challenged ex-laboratory chimpanzees opportunities to have a relatively normal chimpanzee life, which has had variable results over the last 5-10 years and has led the team to where they are now. The case is considered unsupported.

However, a number of conditions have been made with regard to ensuring the timely delivery of proposed enrichment projects for the 'Old Gorilla House' and the consolidation of the chimpanzee management plan documents to ensure that there is a clear and centrally held master plan that will drive the resolution of the programme.

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2.0 'MUJUR' ORANGUTAN BREEDING PLANS

Date of incident:	Third infant born 31st July 2024
Species & identification:	Northwest Bornean orangutan (*Pongo pygmaeus pygmaeus*) 18 years and 10 months Local ID A5M023

Allegation:

Protected disclosure 01: 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:

"The female orangutan has had three failed attempts at raising offspring, despite the zoos efforts to teach her to breast feed. Will this animal be bred from again?"

NOTE: The inspection team discussed whether this was an actual allegation, or whether it was a simple request to understand the future management of an individual animal. Considering the context that the request was submitted, the inspection team opted to include the request as an allegation as it was interpreted as inferring that the continuing breeding of this individual, assumed to be 'Mujur', compromised both her welfare and that of the infants that had died in the case of the first two animals, whilst the third was hand reared.

Origin of the allegation:	Protected disclosure 01, 20th January, 2025

Documents reviewed as part of the investigation:

27th February, 2025	Medical record, 'Mujur', 16th Jan 2022 to 25th Feb 2025
25th February, 2025	Focal Welfare Assessment Bornean orangutan Mujur, Jan 2024 to Feb 2025
25th February, 2025	Medical record, ' Leonie', 16th Jan 2022 to 25th Feb 2025
25th February, 2025	Focal Welfare Assessment Bornean orangutan Leonie, March 2024 to Feb 2025
1st February, 2025	Enrichment diary, February 2025
1st January, 2025	Enrichment diary, January 2025
21st November, 2024	Dublin Zoo Diet Sheet: Northwest Bornean orangutan
21st November, 2024	Nutrition Review Northwest Bornean orangutan
11th October, 2024	Email chain re hand rearing decision-making process for 'SJ', 24th August 2024 to 11th October 2024
13th September, 2024	Post-mortem bacteriology report, 'Riona'
13th September, 2024	Medical record, 'Riona', 15th April 2024 to 13th Sept 2024
12th August, 2024	'SJ' IGRA results x2
8th August, 2024	'SJ' Infant orangutan TST results
8th August, 2024	'SJ' haematology and biochemistry results
4th August 2024	Medical record, 'SJ', 4th Aug 2024 to 15th Oct 2024
30th June, 2024	Post-mortem report 'Riona', orangutan

14th June, 2024	Mujur Post Natal Care Plan – Assist Feed or Hand Rearing
28th June, 2024	Orangutan 'Mujur' Birth Decision Tree
17th May, 2024	Action Plan Orangutan Mujur Care (pregnancy plan)
8th May, 2024	Care Plan, Clinical Midwife Specialist in Lactation
1st March, 2024	'Sibu' preliminary post-mortem report
29th February, 2024	Medical record, 'Sibu', 21st Nov 2023 to 29th Feb 2024
28th February, 2024	'Sibu' the orangutan case history
January, 2024	Action log – Orangutan Planning Meeting
October, 2022	Dublin Zoo Special Zoo Inspection Report, 14th of July to 7th of October 2022

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

The 'allegation' lacks a specific welfare allegation other than a request regarding information as to what the future breeding plan for an individual unnamed orangutan was going to be. This individual has been assumed to be 'Mujuru', a 24-year-old, female northwest Bornean orangutan (*Pongo pygmaeus pygmaeus*) who has given birth to three infants over the period 2019 to 2024.

'Mujur' was born on the 18th of September, 2005 at Dublin Zoo to parents 87M004 (?'Jorong') and 96M058 ('Maggie'). Her history is unremarkable other than her mother Maggie succumbed unexpectedly to a respiratory problem in July 2008 when she was only 2 years and 4 months old. 'Mujur's' aunt 'Leonie' took on the role of a surrogate mother and she displayed good allomothering behaviour which led to some behavioural changes in 'Mujur' at this time, as described in Whilde and Marples (2010). There were no medical or behavioural concerns considered relevant to the current concerns noted in her history.

On the 29th of January 2019 she had her first youngster at the age of 13 years old, this was found to be dead when first checked in the morning on the same day, it was not reported if this was born dead or died soon after birth. Her second youngster, a male born on the 30th of January 2022, died at 11 days old and the case is described in detail in the Dublin Zoo Special Zoo Inspection Report, 14th of July to 7th of October 2022. Again, this was due to 'mismothering'. When 'Mujur' was identified as being pregnant in 2024 Dublin Zoo developed a comprehensive management plan which was documented publicly in the national press as she was taught how to breast feed with prenatal classes using human volunteers with newborn babies. This was part of a multi-stakeholder programme that culminated in a series of birthing management plans including intervention and hand rearing. This was exceptionally robust and allowed the timely intervention and hand-rearing programme to be developed for the male youngster that was born on the 31st of July 2024. After 34 hours of monitoring the new baby, 'Sibu Jnr' or simply 'SJ' was pulled and hand reared, to later move to a creche facility at Monkey World where he is doing well in a social setting. This journey being extensively documented in the national press alongside the detailed and comprehensive medical, husbandry and other records at the zoo.

2024 was also a year of considerable change in the orangutan group.

The 45-year-old male 'Sibu' was anaesthetised on the 29th February 2024 for work up of a chronic and deteriorating heart condition, that had likely started in 2019 and had been managed medically. He sadly died under anaesthesia despite having a team of internationally recognised specialist cardiologists and anaesthetists at his side. CCPR was unsuccessful and the anaesthesia record demonstrates clear understanding of the failing cardiac cycle and targeted, but failed, treatment to support his failing heart prior to death. Post-mortem confirmed dissecting myocardial fibrosis (fibrosing cardiomyopathy) which is well described in captive great apes.

On the morning of the 30th June 2024 'Riona', a female, 28-years-old, presented with a sudden lethargy which had not been reported the previous day where she had been clinically normal. She quickly deteriorated over the day developing vomiting and haemorrhagic diarrhoea and so the veterinary team intervened and anaesthetised her to allow diagnostic sampling and treatment. Despite the intervention she died later that evening on the same day. This peracute death was unexpected and an acute necrotising and haemorrhagic enteritis was confirmed, the cause was not identified as the tissue cultures identified only contaminants that are common following death. No parasites were identified. The pathologists final diagnosis was "*a severe necrotising enteritis affecting the small and large intestine, the aetiology of which was unclear*", followed by "*the likely cause an enterotoxaemia which led to intravascular coagulation and death"*. In addition, there was an incidental finding of a chronic granulomatous and fibrosing lymphadenitis in the bronchial lymph node which at the time it was found raised a potential differential diagnosis of tuberculosis, which on further testing and culture was ruled out. Due to this finding and the time mycobacterial culture results take to arrive this led to 'Sibu Jnr' being tested for tuberculosis prior to being moved to Monkey World. 'Riona's' death occurred one month before 'Sibu Jnr' was born, the impact of which on 'Mujur' is unknown but it would have caused some disturbance in the group.

'Mujur's' future as a breeding mother has been extensively discussed both internally and externally with multiple stakeholders with a number of options identified. These include:

1. Consider permanent contraception and no longer breed from 'Mujur';
2. Contracept 'Mujur' and look to bring in new breeding male and a proven breeding female who can provide experience and training on proper infant care, then review and consider breeding at a later stage once she has developed experience;
3. Contracept 'Mujur' and look to move her to another facility where there are breeding females who can provide experience and training on proper infant care, then review and consider breeding at a later stage once she has developed experience, either back at Dublin Zoo or at the new facility where she has been moved to; or
4. Continue to breed 'Mujur' in the hope that her skills continue to develop and she ultimately instinctively understands what is needed for her new born.

The outcomes form Dublin Zoo's discussions are discussed below.

Findings of the investigation with regards to the specific case

- The orangutan group at Dublin Zoo saw considerable change with the deaths of 'Sibu' and 'Riona', the former due to longstanding and treated cardiac disease in an aged orangutan and the latter due to a severe necrotising enteritis affecting the small and large intestine, the cause unknown. Neither of these deaths were caused by any failings by the animal care team or management at Dublin Zoo.
- 'Mujur' was first suspected pregnant on the 29th of April 2024, with urine obtained on the 2nd of May 2024 which allowed confirmative pregnancy tests to be performed.
- A well-considered birthing plan was developed that even included prenatal feeding classes for 'Mujur' using human volunteers. The plan extended to parent reared as well as hand-reared scenarios that were constructed by the Dublin Zoo team working with multiple internationally recognised specialists and experienced competent organisations. Nutrition and peri-pregnancy management was modified and considered optimal.
- 'Mujur' had a third infant born on the 31st July 2024, a male, whom she demonstrated improved care of compared to the previous births, each time showing incremental gains but again she failed to understand how to guide the youngster to her milk and the infant was, as per the intervention strategies, removed at 34 hours where he was then hand-reared. The impact to 'Mujur' was reported as minimal.
- Since then there has been a number of robust discussions as to the options available to the management of 'Mujur', these are outlined above.
- 'Sibu Jnr' is doing well at his new home and has settled into the creche found there.

Interpretation by the investigation team

The 'allegation' was not considered a welfare allegation, more it was an inferred welfare concern for possibly the mother or the newborn infants. The inspection team considered both aspects when reviewing the case, as well as the welfare of the primary care givers. Whilst the latter is important to consider, the impact on staff is clearly demonstrated in the Dublin Zoo Special Zoo Inspection Report, 14th of July to 7th of October 2022, it is not related to the welfare of the animals and so is flagged here for completeness and only mentioned in passing.

It is clear that Dublin Zoo have invested a considerable amount of effort and care proportionate to the needs of 'Mujur'. The primary challenge is differentiating between a female orangutan that is simply inexperienced and has limited opportunities to develop experience, to an orangutan female that simply does not understand or lacks any empathy to her newborn infant and is unlikely or unwilling to ever rear an infant herself. Understanding this fundamental question determines the outcome for any future births and their success or failure, yet is a question that is unlikely to ever be answered without further attempts at managing her reproductive care.

The options outlined for her future management were described by the team at Dublin Zoo as:

1. Consider permanent contraception and no longer breed from 'Mujur';
2. Contracept 'Mujur' and look to bring in new breeding male and a proven breeding female who can provide experience and training on proper infant care, then review and consider breeding at a later stage once she has developed experience;
3. Contracept 'Mujur' and look to move her to another facility where there are breeding females who can provide experience and training on proper infant care, then review and consider breeding at a later stage once she has developed experience, either back at Dublin Zoo or at the new facility where she has been moved to; or
4. Continue to breed 'Mujur' in the hope that her skills continue to develop and she ultimately instinctively understands what is needed for her new born.

The team at Dublin Zoo have ruled out option 1 as this is not viable at this present time as she is able to breed and it is a potentially fundamental right for her own welfare, as well as her being a critically endangered species and an important part of the wider breeding programme. This may be considered in the future depending on future outcomes but is not considered viable at this time.

Option 4 has been discussed and there are recommendations, including from the breeding programme managers, that Bornean orangutans often understand what is required of them by the third or fourth infant. However, due to the inexperience and 'Mujur's' response to previous infants the team are not willing to risk such an option again as the likelihood of a similar event occurring is high with intervention being likely.

This then falls to options 2 and 3 which both aim to develop 'Mujur's' experience and understanding from another experienced orangutan what is expected of her with her own future infant when it is born. The external bodies supporting Dublin Zoo have provided evidence that this is a viable option and has demonstrable benefits as without this experience 'Mujur' has limited scope to innately understand what is needed herself. With conspecific support and understanding that she is immersed in is likely to provide the best outcome for her and the next infant when it is born. How this is managed is currently under discussion, and the decision whether to bring in additional breeding animals or move 'Mujur' to an alternative facility is currently under review. These two options and the decision behind it are recognised as suitable by the inspection team.

Zoo Inspection process reflective of addressing the welfare concerns

Dublin Zoo Special Zoo Inspection Report, 14th of July to 7th of October 2022 discussed the death and the management of 'Mujur's' second infant in detail, pages 188-198. The mortalities within the orangutan group were discussed at the formal inspections as any significant mortalities are always assessed and discussed with both the managers and veterinarians to understand the causal factors. No compliance or welfare concerns were raised at these discussions nor reflected in the inspection reports, both the annual formal nor the special inspections.

Outcome of the investigation with regard to the specific case

Historically the welfare cases have been assigned a category as 'unfounded' or 'supported' as well as an additional option of being an 'HR' case. None of these categories were considered appropriate by the inspection team as there is only an inferred welfare allegation, the 'allegation' felt more of a request for information from an external party. If taken as a welfare allegation, the case is considered to be 'unfounded' but fall somewhere between Category 3 and Category 4 – this not being a defined welfare case nor the fault of Dublin Zoo but was reflective of challenges that an individual mother has in rearing her offspring.

The inspection team feel that Dublin Zoo is not culpable in the failings of 'Mujur' to rear her infant and equally that 'Mujur' is not at fault herself. Possibly the loss of her mother 'Maggie', when she was only 2 years and 4 months old, may have influenced her current behaviour but, whilst this could be dismissed as speculation, the inspectors did consider this and whether she failed to rear infants due to the social management and life provided at Dublin Zoo after the death of her mother. Other than the lack of developing direct experience there is no evidence to support such a consideration and the care provision, both physically and behaviourally, provided by 'Leonie' was considered equivalent to that of 'Mujur's' own mother and she was also supported by a multitude of external advisors to ensure that her husbandry was, and still is, optimal. However, Abello and Colell (2006) in their review of multiple great apes, including 157 *Pongo pygmaeus ssp,* clearly identified that for a female great ape to demonstrate good maternal skills, the most effective experience is to have been reared by their own mother and to have observed maternal behaviour in a social group composed of mature individuals and infants. This paper is interesting in that it looks at all great apes, including chimpanzees, bonobos and gorillas, all of which are social large troop species unlike orangutans which are relatively solitary species capable of living in larger groups in captivity. The paper goes on to identify that of the 157 orangutan infants born in the period of 1990 to 2000 at 58 institutions, 90 (57%) mother reared animals survived to 1 year and older (the cut-off for the paper defining birthing success), and there were 67 (43%) mother reared infants that had died or had to be hand-reared following separation from their mother before they were one year old, these being classed as 'breeding failures'. Most of the 'breeding failures' were down to illness (7 cases, 9.6%), followed by mothers that ignored their infants (5 cases), or failed to nurse (4 cases), the rest being multiple other causes. Also of interest was that for orangutans previous breeding experience was less significant compared to that for other great apes and that training has a positive influence on maternal behaviour for orangutans. A pattern that appears to fit in the case of 'Mujur', especially when you consider that she was the last orangutan born at Dublin Zoo and has never seen nor experienced a birth with another orangutan.

Dublin Zoo recognises the missing experience element is a critical factor in potentially resolving 'Mujur's' ability to adequately care for an infant and this is at the forefront of their management plan for her. To permanently stop breeding her and remove any choice she has as a potential mother and as part of a wider species management plan does not seem appropriate until all efforts have been made to resolve the current situaiton, albeit

before future attempts are made infant rearing experience needs to be a formal part of her husbandry care plan. This is what the Dublin Zoo team are already planning and have started to implemtn. As such, despite the challenge of categorising this case, it was felt that any inferred concerns were being managed and as such the inferred welfare case was unfounded as the inspection team interpreted it.

References

- Abello and Colell (2006) Analysis of factors that affect maternal behaviour and breeding success in great apes in captivity, International Zoo Yearbook, 40, pp323-340
- Fröhlich et al (2024) Wild and captive immature orangutans differ in their non-vocal communication with others, but not with their mothers, Behavioural Ecology and Sociobiology, 78,12, pp13
- Government of Ireland (2003) European Communities (Licensing and Inspection of Zoos) Regulations, Statutory Instrument No. 440 of 2003
- Preuschoft et al (2021) Learning to be an orangutan implications of life history for orangutan rehabilitation, Animals, 11, 767, pp23
- Revathe et al (2024) Maternal Behavior in Sumatran Orangutans (*Pongo abelii*) is Modulated by Mother-Offspring Characteristics and Socioecological Factors, International Journal of Primatology, 45, pp 1021-1048
- Schuppli et al (2016) Development of foraging skills in two orangutan populations: needing to learn or needing to grow?, Frontiers in Zoology, 13:43, pp17
- Whilde and Marples (2010) The Behaviour of a Zoo-Housed Infant Orangutan After the Death of its Mother, Zoo Biology, 29, p 1-7

3.0 ELEPHANT HERD MANAGEMENT DECISIONS

Date of incident:	Events 2018 to 2024
Species & identification:	Asian elephant (*Elephas maximus*) Mixed ages Local ID Multiple (whole herd)

Allegation:

Protected disclosure 01: 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:

"Why was an established family group, including two sisters and their calves, separated? This is a well-known stressor to elephants. How was this seen as an appropriate time to increase this stress by bringing a breeding bull into a herd with juveniles?"

NOTE: The inspection team discussed whether this was an actual allegation, or whether it was a simple request to understand the rationale behind the decisions behind the elephant management population strategy at Dublin Zoo. Considering the context that the request was submitted, the inspection team opted to include the request as an allegation as it was interpreted as inferring that the management team at Dublin Zoo had made decisions with regard to the elephant herd's management that lead to potential welfare implications regarding the move to America of the 2.2.0 elephants and the import of the bull 6 months later which was potentially linked to the EEHV-HD deaths of the two calves 'Avani' and 'Zinda'.

Origin of the allegation:	Protected disclosure, 20th January, 2025

Documents reviewed as part of the investigation:

15th February, 2025	Medical history, 'Asha', 12th Jan 2024 to 15th Feb 2025
15th February, 2025	Medical history, 'Anak', 20th June 2024 to 15th Feb 2025
15th February, 2025	Medical history, 'Dina', 16th Oct 2023 to 15th Feb 2025
13th February, 2025	Medical history, 'Samiya', 12th Jan 2024 to 13th Feb 2025
31st December, 2024	Dublin Zoo Research Project Summary
26th September, 2024	Ethics Committee meeting, Elephant Report
11th July, 2024	Post-mortem report, 'Zinda'
7th July, 2024	Medical history, 'Zinda', 12th Jan 2024 to 7th July 2024 (EEHV)
2nd July, 2024	Post-mortem report, 'Avani'
1st July, 2024	Medical history, 'Avani', 12th Jan 2024 to 20th June 2024 (EEHV)
Gen July, 2024	Email correspondence between EEHV specialists, x 8 conversations
26th March, 2024	Elephant Nutrition Review
January, 2024	Dublin Zoo Elephant Long Term Management Plan
Unknown, 2024	BIAZA Dublin Zoo Elephant Audit

?? November, 2024	Report on Elephant Move from Dublin Zoo to Cincinnati Zoo Nov 2023
6th February, 2024	Report on Elephant Move Workshop
6th February, 2024	Elephant transport discussion power point
4th November, 2023	Medical history, 'Anak', 3rd Feb 2023 to 11th Nov 2023
4th November, 2023	Medical history, 'Kabir', 3rd Feb 2023 to 11th Nov 2023
4th November, 2023	Medical history, 'Sanjay', 3rd Feb 2023 to 11th Nov 2023
4th November, 2023	Medical history, 'Yasmin', 3rd Feb 2023 to 11th Nov 2023
17th July 2022	Elephants at Dublin Zoo Conservation, Research and Management
2022 -2024	Various diet sheets and nutritional analysis (too many to list)
5th October, 2021	Donation Agreement DZ and CZBG
3rd September, 2021	Ethics Committee meeting minutes
31st May, 2021	Ethics Committee meeting minutes
26th February, 2021	EEP letter confirming move to Cincinnati Zoo
1st February, 2021	Initial discussions with EEP about move to Cincinnati Zoo email
4th December, 2020	Ethics Committee meeting minutes
?? December 2020	CZBG Asian elephant Program and Exhibit Design 2023
1st June, 2020	EEP discussions about changing the herd structure email
Unknown, 2015	BIAZA Dublin Zoo Elephant Audit
Unknown, ?2022	CZBG EEP Elephant Plan

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

The 'allegation' lacks a specific welfare allegation other than a request regarding information as to the decision-making process behind the decision to split the established family group and increase the stress by bringing in a breeding bull. The inspection team opted to review the decision-making process behind the decision to alter the herd structure, the steps to achieve this and the events that occurred since the move i.e. the import of the new breeding bull and the events that occurred soon after.

In 2018, the Asian elephant herd was reviewed and future management strategies discussed. The Dublin Zoo herd had naturally begun to form two separate herds, one with 'Bernadine', 'Asha', Samiya', Avani', and 'Zinda' and the other herd consisting of 'Yasmin', 'Anak', 'Kabir', and 'Sanjay'. At this time the facility was at maximum capacity; there was a need to move the two young bulls 'Ashoka' and 'Kavi' on from a social perspective within the next two years; and due to the breeding successes the population had a window of two to three years before the population outgrew the facility completely. During this period, at its peak there were twelve elephants held in the facility, with four of them under two years old. As they developed the future strain on the facility would not have been conducive for the welfare of the elephants. The first steps to resolve the situation, as well as engaging in the global breeding programme for the species, saw 'Upali', the breeding bull, being transferred in February 2019 to France and the two young bulls 'Ashoka' and 'Kavi' leaving the herd in January 2020, where they eventually moved to Australia. This reduced the immediate pressure on the herd but only delayed the period as the younger

calves started to grow. Note, most of these early steps were delayed due to the impact of the SARS-CoV-2 ('Covid-19') pandemic.

Dublin Zoo discussed with the EAZA Ex situ Programmes (EEP) their recommendation for the EEP to transfer the elephants to the American breeding programme, which was agreed by the species committee as the American elephant programme needed diversity in their population genetics to assure long-term survival of the American population. At the 2020 Ethics Committee meeting it was first formally stated that there was an additional need to further review the long-term management plan with regards to the elephants, review the facilities, staff, training plans and ensure that they aligned with the BIAZA Elephant Management Policy. By this time discussions had been had with Cincinnati Zoo & Botanical Garden (CZBG) as a viable collection to take additional elephants.

Historically, the CZBG facility had recently featured at that time on the 'Top 10 worst elephant facilities' in the USA list produced by the non-governmental organisation In Defense of Animals, this being due to Cincinnati's single acre facility and a small herd. CZBG recognised the failings in their facility and worked with multiple experts in their field to construct a $50 million facility that included a 5-acre system of paddocks, external house pens, and an indoor facility that is almost 1,000m^2 in size. The system has sand floors, multiple substrates outside, large pools and waterfalls, and a number of aspects designed to focus on the needs of the elephants. Whilst the facility still features on the 'Top 10 worst elephant facilities' list this appears to be down to two of the older cows and the number of elephants held on the site compared to the wild, rather than the failings of the facilities offered by the new habitat. The inspection team recognise that any discussion of animals in captivity has very polar views, this is none more so when considering elephants in captivity. This case review is not a positioning statement on whether such a practice is right or wrong, nor whether holding any wild or domestic animal in captivity is right or wrong. However, purely assessing the CZBG facility against the requirements of industry accepted standards for eight elephants the CZBG facility exceeds the minimum in-country requirements (AZA) as well as those stated in other Standards, including the Irish Standards of Modern Zoo Practice (ISMZP) and those recognised for sanctuaries (see over page).

The following are minimum recommendations of enclosure size as required for eight elephants as are currently held at CZBG and were held at Dublin Zoo at the time of the transfer in November 2023:

MINIMUM SIZE REQUIREMENTS FOR EIGHT ADULT ELEPHANTS IN NOVEMBER 2023

Standard	Year of Standard	Indoor (m^2)	Outdoor (m^2)	Notes
ISMZP[1]	2016	620	6,000	
EAZA[2]	2020	620	3,000	
BIAZA[3]	2019	620	3,000	
AZA[4]	2012	448	4,000	
SSSMZP[5]	2017	620	3,000	
GFAS[6]	2019	560	Space 10km/day*	
CURRENT ENCLOSURE SIZES (SAME AS NOV 2023, CURRENT 2025 POPULATIONS STATED)				
Dublin Zoo	-	656	6,475	6 elephants
Cincinnati	-	929	20,234	8 elephants

[1]Irish Standards of Modern Zoo Practice, [2] European Association of Zoos and Aquaria, [3]British and Irish Association of Zoos and Aquariums, [4]Association of Zoos and Aquaria (USA), [5]Secretary of State's Standards of Modern Zoo Practice (UK), [6]Global Federation of Animal Sanctuaries, *note: no value is provided and so to put this in context Lintl (2017) tracked movement of captive bull elephants using GPS in a 2,000m^2 + 500m^2 elephant facility and they averaged 6.4km/day travelled, assuming doubling of the space from this study has potential to double the opportunity for travel then an enclosure of 5,000m^2 would be a reasonable estimate expected of an elephant sanctuary.

NOTE: whilst size is important, complexity and enclosure design and management are equally important when considering welfare. To use size alone is not a useful metric but is utilised here to demonstrate a simple comparison of the CZBG facility against stated metrics from industry and sanctuary husbandry standards as well as Dublin Zoo's current facility.

The proposed plans for the facility at CZBG were shared with the EEP who agreed to the planned move and this was formally confirmed late February 2021. This was again discussed at the Ethics Committee meeting in May 2021 following discussions with CZBG to discuss basic principles and stipulations that Dublin Zoo required for the elephants leaving Ireland and assurances for their ongoing care and welfare. The remainder of the year was spent working together to facilitate the transfer and the future welfare requirements, including training of staff here in Dublin Zoo. Moves such as this are not simple, quick affairs and the primary critical control point was CZBG starting and finishing the new facility. It was also occurring as the world started to open as it recovered from the pandemic. CZBG plans were produced, and the management structures finalised in 2022, with building works destined to be completed in 2023. The planned moved was built around the expected time frames and with a few minor delays, the move transitioned to the 4th November 2023, where 'Yasmin', 'Anak', 'Kabir', and 'Sanjay' were successfully relocated.

Following the move to CZBG this left the herd as 'Bernadine', 'Asha', Samiya', 'Avani', and 'Zinda'. Now the facility was reduced in numbers it allowed a new bull to be brought in as

part of the EEP breeding programme. 'Aung Bo' a 23-year-old male arrived on the 19th July 2024 to Dublin, having come from Chester Zoo. A total of six elephants (1.5.0).

Seven days later on the 26th June 2024 'Avani' had a decreased appetite but was otherwise initially bright, by the 29th June she had signs of colic, and on the 30th June the condition deteriorated rapidly and she died overnight on the morning of the 1st of July with suspected Elephant Endotheliotropic Herpes Virus Haemorrhagic Disease (EEHV-HD). This was later confirmed as being caused by EEHV-1A. Soon after, 'Zinda' demonstrated mildly unusual behaviour on the 2nd of July 2024 and treatment was started immediately and EEHV-1A was confirmed to be the underlying cause of the clinical signs, despite all efforts 'Zinda' succumbed on the 7th July 2024. Post-mortem reports demonstrated classical lesions of EEHV-HD in multiple tissues, including the heart. The other calf 'Samiya' and juvenile/sub-adult 'Asha' were also treated with antiviral medication and EEHV antibody rich plasma and both survived.

During this time all of the elephants were blood sampled and assessed for EEHV PCR (virus or antigen) and EEHV antibodies to ascertain the spread and shedding patterns to understand the epidemiology of the disease at the time. Having rapid access to PCR in country at the Irish Equine Center allowed rapid diagnosis and treatment action plans to be implemented. This was followed up by ELISA testing at Utrecht which allowed assessment of antibody titres and the response by the individual elephants. Combined, these tests showed that 'Zinda' and 'Avani' had extremely high EEHV viral loads in the region of 3 million vge/ml, whereas 'Asha' was around 10,000 vge/ml, and 'Samiya' fluctuated around 200-400 vge/ml. As expected, based on these and the treatment provided both 'Asha' and 'Samiya' survived. The antibody results painted a similar picture to the viral loads. Where an antibody titre of >0.25 normalised Optical Density (OD) is thought to be protective. 'Avani' demonstrated higher than this 'protective threshold', but 'Zinda' had very little antibody and was below the 'protective' threshold, 'Asha' and 'Dina' were in excess of the threshold, but were lower than 'Avani', and 'Samiya' was below the threshold for EEHV-1A and the other EEHV viral sub-types. These levels of antibody for EEHV-1A, EEHV-1B, EEHV-4 and EEHV-5A are consistent with previous exposure to the virus and all of the viruses were likely within the herd prior to 'Aung Bo's' arrival. This is not unexpected as EEHV is almost considered ubiquitous, and if looking at the history of the Dublin Zoo herd 'Bernadine', 'Yasmin', and 'Anak' came from Rotterdam Zoo and 'Upali' was born at Zoo Zürich, both centres of the original research work carried out on EEHV in Europe due to a high number of cases at both facilities.

Whilst there is still ongoing research looking at the epidemiology of these cases it is hypothesised that 'Aung Bo' was not the source of the EEHV as he had no direct contact with the elephants at this time having only recently arrived and it is highly likely that the virus was already latent in the herd, this being supported by the locations where many of the older elephants in the facility came from and the antibody titres present against multiple sub-types of the virus. It is likely that the virus recrudesced. Being a herpes virus, it behaves in a manner similar to the human cold sore virus (herpes simplex) in that it can remain dormant in the body and during periods of stress or immunocompromise can flair up (recrudescence), in the case of herpes simplex a cold sore develops, in the case of

EEHV, EEHV-HD develops and there is a high risk of mortality despite intervention. This is being seen more and more in wild situations both as testing becomes more widely available but also as herds become more fragmented and increasing habitat pressures push herds into human-elephant conflict situations. It is not unusual for EEHV-HD to occur 7-14 days after the arrival of a new elephant, as was the case with the arrival of 'Aung Bo'. Whilst it is likely the two events are related this is just supposition as any stressors can result in recrudescence and sometimes it is not clear what the causal factors are. EEHV is a significant cause of mortality in juvenile elephants, however sometimes there are causal factors that lead to stress and recrudescence, but the instigating cause itself would have caused the death of the elephant whether EEHV was present or not, this can sometimes skew the statistics of EEHV mortality patterns, e.g. a juvenile elephant had a twisted intestine which led to its death and the stress of this resulted in EEHV-HD appearing whilst the elephant was succumbing to the original pathology. 'Aung Bo' was used as a provider of plasma therapy with antibodies for the two younger elephants and was, in conjunction with the animal care team and the keepers, responsible for supporting and likely saving 'Samiya' and 'Asha'.

Findings of the investigation with regards to the specific case

- The elephant herd at Dublin Zoo had been extremely successful in its elephant conservation breeding programme which had resulted in a number of successful births which in turn meant the population grew relatively quickly over the last 10-15 years.
- The elephant facility, due to the breeding success, had reached capacity around 2018-2019 and was imminently about to exceed the capacity of the space and housing available. As such action was required to manage the herd whilst reducing the population.
- The initial steps were to move the breeding bull, he had been extremely successful and was at risk of becoming overrepresented in the Dublin Zoo herd. 'Upali' was moved in 2019 to France.
- Soon after, as the young juvenile bulls were coming of age 'Ashoka' and 'Kavi' were moved to Australia, via the UK which was slightly delayed due to the SARS-CoV-2 pandemic.
- This left still a relatively large population but took the pressure off the facilities. At this time the pandemic delayed a lot of action but the plan to move 2.2.0 elephants to America had been discussed and initiated, the implementation of which required a brand new facility to be built.
- The elephants 'Yasmin', 'Anak', 'Kabir', and 'Sanjay' were successfully relocated to Cincinnati Zoological and Botanical Gardens on the 4th November 2023.
- Approximately seven and a half months later the new breeding bull, 'Aung Bo' was imported from Chester Zoo on the 20th July 2024.
- Seven days later 'Avani' showed mild changes in behaviour and 3 days later had rapidly deteriorated and died from Elephant Endotheliotropic Herpes Virus Haemorrhagic Disease (EEHV-HD), caused by EEHV-1A in this case.
- Immediately after 'Avani's' death, 'Zinda' showed abnormal behavioural changes and despite aggressive treatment she died on the 7th of July 2024, again the cause of death being EEHV-1A.

- The rest of the herd were treated using various drugs including antivirals and antibody rich plasma from 'Aung Bo'. They all survived but demonstrated evidence of exposure and in some cases viral burdens at testing.
- Interestingly, there was considerable evidence of moderate antibody titres which was highly suggestive that the virus was already present in the herd and that the source was not 'Aung Bo' as he had had no contact either directly or indirectly with the other elephants at the point the outbreak started.
- The cause of the outbreak is highly likely to be related to the arrival of the bull elephant but this is not proven and any stressors can trigger such an event.
- The herd was doing fine at the inspection and no concerns were noted.

Interpretation by the investigation team

The 'allegation' requested, ***"Why was an established family group, including two sisters and their calves, separated? This is a well-known stressor to elephants."*** The inspection team can only comment on the evidence provided but the decision appears to have been multifactorial, all of which if left unchecked would have led to welfare issues for the herd, which would have been unacceptable and likely lead to complaints of inaction, these included:

- Export of elephants was essential to reduce the population size as the facility was at maximal capacity and as the younger calves grew they would exceed the facilities ability to provide for the elephant's welfare;
- The bull calves were exported at a not unusual dispersal age, and the adult breeding bull was transported as part of the wider programme as he was over represented in the Dublin Zoo herd;
- The remaining herd was still large and had naturally fragmented into the two primary groups led by the two sisters 'Bernhardine' and 'Yasmin'. This natural split and reduction in contact between the two groups allowed a natural separation of the two and the opportunity of the new facility at Cincinnati Zoological and Botanical Gardens allowed a whole group to be exported rather than break the close ties of the group.
- The facility they were moved to is brand new and exceeds in many ways the facilities at Dublin Zoo, allowing an improvement for these individuals rather than a maintenance or deterioration in their welfare which may have been the case if they went to another facility.
- A transport can be stressful, especially for the animals being moved. The impact of this move was reported to have been minimal on the animals remaining at Dublin and the animals that moved to Cincinnati. Regular communication is maintained by both zoos despite the export having occurred almost 18 months ago. The lack of any EEHV cases at either Cincinnati or Dublin at the time of the move is supportive of this position.

The inspectors are of the opinion that this move and the animals selected for the move was carefully thought out and planned over a period of nearly five years, with Dublin Zoo working with global specialists on the selection of the animals, carefully opting for the zoo to be exported to, consideration of the culture and competency at that receiving zoo, and invested time in building relationships between the two institutions to ensure that the

elephants had the optimal care moving forwards. This relationship continues at the time of inspection and is likely to continue moving forwards.

Equally, the transfer was extremely well considered and utilised specialists in this area. The move catered for the elephant's welfare and this is exemplified by the success of the transfer. However, Dublin Zoo did undertake a critical analysis workshop after the move to look at what could have been improved and this will inform any moves in the future both within Dublin Zoo but also the wider elephant community.

The inspectors were satisfied with the decision-making process over the nearly five-year period and the consideration of what was best for the Dublin Zoo elephant population and their welfare moving forwards. This was not only considered justified but was considered essential as the house and facility would have been overwhelmed with the number of elephants and this would have resulted in serious and unavoidable welfare concerns, which if left unchecked would have triggered enforcement action by the Zoo Licensing Inspectors. Dublin Zoo acted responsibly and proactively implemented their plan at a time that was in the best interests of the herd.

The 'allegation' went on to ask, ***"How was this seen as an appropriate time to increase this stress by bringing a breeding bull into a herd with juveniles?"*** The inspection team do not recognise that there was a high level of stress between the time that the herd was exported to America and the arrival of the bull elephant. The period between the elephants leaving and the bull arriving was approximately seven and a half months, and whilst possible, it is highly unlikely that there was an 'accrual of stress' leading to the events that occurred. It is not unreasonable to suggest that the arrival of the bull was linked to the EEHV-HD mortalities that occurred 7-10 days later, there is a convincing cause and effect here and consistency with EEHV-HD outbreaks typically occurring 7-14 days post arrival of a new elephant. However, there are as many other possibilities that could have been unrecognised stressors and whilst however likely it was the case, there must be an open mind to other speculative causes.

Whether the bull's arrival caused the EEHV outbreak or not, there is a need for elephants to be moved as part of the breeding programme and for social benefits. Any transport of an elephant can cause stress and can cause EEHV to recrudesce. However, many transports do not cause EEHV-HD outbreaks to occur. Could the fragmentation of the herd have added additional stressors due to a lack of support from conspecifics in the face of the stress of the arrival of a new bull? Yes, this is plausible. However, could the regular music festivals in Phoenix Park result in stress that causes EEHV to recrudesce, or could unexpected heavy machinery passing along North Road close to the buildings cause unexpected stressful infrasound that stresses the elephants, or could the herd outgrowing the facility lead to additional stressors, these are equally plausible.

The inspectors are of the opinion that any significant stressors can cause EEHV-HD mortalities, for instance, a common cause being weaning where the calf is pushed away from the mother, the first real stressor that a calf often faces. The likelihood is that captivity does allow EEHV viruses to spread, this is evidenced in the older Rotterdam cows at Dublin Zoo having antibodies against EEHV viruses demonstrating previous exposure. However,

there is little 'wild' equivalent stress in captive elephants other than that of captivity itself. For instance, there is not the stress of searching for food, searching for water, failing to find resources, predation, human-elephant conflict nor the general stressors of living in a wild environment. These are likely to cause animals to have higher levels of circulating EEHV sub-clinical outbreaks, akin to the human cold-sore model, and therefore higher levels of protective EEHV antibodies whereas the stressors in captivity and the limitations of exposure to multiple different types of EEHV virus is less in captivity. Yet we know that two of the core founders of the current elephant herd came from zoos that had high levels of EEHV, which they survived, and so combining these populations in the face of an elephant programme that in some parts redefined what elephant husbandry could be and led to improved welfare and successful breeding and management programmes may well be the reason that Dublin Zoo had not seen EEHV cases until now. Was it likely that Dublin Zoo would eventually get an EEHV case? Yes, after all the virus has been around for longer than the Asian elephant species has existed and its ability to be carried and asymptomatic has made it extremely successful as a pathogen. It is only in the last 2-3 decades where we have started to understand the virus better. This improved knowledge is a result of the zoo community seeing a leap in their understanding of elephant reproduction in the late 1990s, which led to improvements in calf breeding and rearing, which slowly increased calf production, with calves being the higher risk category of animals succumbing to EEHV-HD, and therefore as calf numbers have increased, so have cases of EEHV-HD.

The inspectors recognise that the EEHV cases and the import of the bull are possibly related but potentially not. There are complex epidemiological factors that are not fully understood yet and whilst devastating for the elephant cows (mothers) and the animal care teams, learning from these terrible events allows us to better understand the virus, the pathology and factors that lead to the development of EEHV-HD. This is becoming more of a threat in wild populations, where it does exist, and the lessons learnt from captive populations has not only expedited what we know for wild populations but may well lead to a solution with regard to vaccination and improved treatments. Dublin Zoo has been at the centre of this research in Europe and continues to support the work carried out.

As such, when considering the 'allegation', the inspection team do not believe the decision-making processes made by Dublin Zoo were wrong. It is impossible to avoid stressors in the life of any living organism, be it wild or captive. The complexity of elephants in captivity, the diseases and husbandry issues that are present, and the issues facing wild elephants are complex and political, there are no black or white answers, just shades of grey. The inspectors recognise the challenges of captivity and striving to move forward the conservation, the science and the welfare is a core foundation of the elephant programme at Dublin Zoo and that Dublin Zoo does not undertake such programmes without careful consideration and planning. As such, with regard to all aspects of the exports, imports and subsequent herd management and EEHV-HD treatment Dublin Zoo was found to have the best interests of the animals as a primary focus and should be commended on the actions taken and the successes of their elephant programme across the last 10-15 years. However, the inspection team also recognises that this position will not be shared with groups that are diametrically opposed to the keeping of any elephants in captivity.

Zoo Inspection process reflective of addressing the welfare concerns

The elephant herd had grown in size and during the period late 2019 to 2020, and the Dublin Zoo facility was likely at, or close to, capacity at this time. This was not recognised by the inspection team and was not captured in the discussions had during this period. On paper the number of elephants was proportional to the facilities but taking the cow house individually it was likely at or above the expected capacity. This was rectified soon after with the export of the two bulls in January 2020. The inspectors, as part of this investigation, believe the impact at this time was considered negligible as many of the animals were under 2 years old, and only 40% of the elephants were sexually mature. The following inspection in 2020 was undertaken remotely due to the pandemic and by this time the reduction in numbers had resolved the issue. The management practices were praised with regard to the elephant care in 2019.

Outcome of the investigation with regard to the specific case

As per the discussion above, this case is considered unfounded, Dublin Zoo have been found to act professionally and in the best interests of the herd. Indeed, having a large show for the public could have been maintained, yet the herd reduction and improved management taking into account the facilities demonstrates their commitment to ensuring the welfare of the elephants in their care.

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4.0 'ERNIE' HIPPOPOTAMUS SUDDEN DEATH

Date of incident:	Died 13th May 2024
Species & identification:	Common hippopotamus (*Hippopotamus amphibius*) 20 years and 9 months Local ID A24M20

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:

"…includes a review of the passing Ernie the hippo that passed away on earlier this year."

Protected disclosure 02: first email complaint with regard to Dublin Zoo sent directly to the NPWS Zoo Licensing Team;

"*We are also concerned about the death of another hippo (20 year-old Ernie) at Dublin Zoo in May 2024, just two weeks after being transferred from West Midlands safari park in England. No cause of death has been made public"*.

Origin of the allegation:	Protected disclosure 01, 20th January, 2025 Protected disclosure 02, 17th February, 2025

Documents reviewed as part of the investigation:

4th March, 2025	Specimen report A24M20
31st May, 2024	Email correspondence between the pathologist and the referring veterinarians
30th May, 2024	Post-mortem report 'Ernie' - Final
13th May, 2024	Medical history 'Ernie' 25th April 2024 to 13th May 2024

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

'Ernie' the common hippopotamus (*Hippopotamus amphibius*) was born at Flamingo Land on the 4th of August 2003. At the age of 19 years old he was exported to West Midland Safari Park where he was introduced to a group of 5 females. Due to the nature of the facility he was introduced to the females soon after arrival which did not go well and he was soon segregated for an extended period. A trial was made with one other female but she was moved back into the group due to welfare concerns of separating the hippopotamus in the house. The sending zoo trialled a number of ways to integrate 'Ernie' into the group and down to his own welfare concerns and those of the wider bloat it was decided that he should be moved on to another collection. After some searching Dublin Zoo took him on and he was moved over to Dublin Zoo on the 25th of April, 2024.

Transport was unremarkable and he left the crate 20 minutes after arrival where he explored his new enclosure, entered the pool and was soon eating well. The next few days were unremarkable and he interacted with Heid, the female hippopotamus through the bars in a positive manner.

On the 28th of April 'Ernie' developed a non-specific, sporadic lameness of the left fore where he would occasionally stumble. This appeared again on the 29th April and the vet checked but could see nothing of concern and asked for it to be filmed if possible. He remained bright, alert and was eating well. No concerns noted.

On the 12th May he was sneezing immediately after feeding, this was put down to the small pieces of chopped hay in his food. Both hippos were in good form and interacting through the bars well.

On the morning of the 13th May 'Ernie' was unexpectedly found dead in his pool. He was retrieved and underwent post-mortem on the 14th May 2024. Initial gross findings were suspicious of head trauma as there was extensive meningeal haemorrhage within the cranium. However, this was later discarded as likely just terminal haemorrhage as he collapsed, with the histopathology identifying visible inflammation of the lungs, liver and to a lesser degree the kidney and spleen. On the histology there were numerous obvious bacterial colonies and the diagnosis was acute septicaemia. Unfortunately no tissues were retained for bacterial culture and confirmation based on the original gross signs appearing to be primary traumatic cause of death (which was later ruled out). The appearance of the lesions was considered likely to be possible *Staphylococcus sp., Trueperella sp., or Pasteurella sp.* The later having been identified in a common hippopotamus in India and a case in three pygmy hippopotami.

The veterinary team suspected his history and transport had lead to a degree of immunosuppression and speculated that this had left him open to infection and the result was bacteraemia and peracute mortality.

Findings of the investigation with regards to the specific case

- 'Ernie' was born 4th of August 2003 at Flamingo Land.
- He was exported to West Midland Safari Park on the 30th of November 2022 where he was introduced to 5 females. He did not integrate well into the bloat and spent the majority of time on his own, apart from a period where he was put with a single female.
- Due to long term welfare concerns and the repeated failure to mix him with the females a new home was sought and he was exported to Dublin Zoo on the 25th of April 2024.
- He settled in well to his new home with no concerns noted, he interacted with Heid through the gates and bars and ate well. He was stumbling intermittently on his left fore but was otherwise fine.
- On the 12th of May he was noted to be sneezing after eating but this was put down to finely chopped hay. He was bright and no issues noted.

- He was found dead the following morning where post-mortem results were consistent with acute septicaemia affecting multiple systems, but the direct cause was not identified. Pathology included: eccymoses on the left hind limb, bilateral dark red oedematous lungs, 400ml pericardial fluid, ecchymoses on the diaphragm, and meningeal congestion and haemorrhage.
- Histology identified meningeal congestion and haemorrhage; diffuse interstitial myocardial oedema, lungs were hyperaemic with expanded alveoli filled with leucocytes, microhaemorrhages, and bacterial colonies in alveolar wall capillaries; trachea haemorrhage and presence of leucocytes and bacteria; kidneys occasional clusters of bacteria, same for spleen, lymph nodes and other tissues. Diagnosis of acute septicaemia.
- *Staphylococcus sp., Trueperella sp., or Pasteurella sp* were considered the most likely suspects.

Interpretation by the investigation team

The post-mortem findings clearly indicate an acute septicaemia event and this would be consistent with the peracute death and the lack of any clinical signs immediately prior to 'Ernie's' death on the 13th May. Dublin Zoo were very open and transparent in discussing the case and the team were obviously upset that 'Ernie' went from clinically fine to dead in such a short time span.

The inspection team reviewed the documentation associated with the case, discussed the case with the animal care team and the veterinarians, as well as assessed the house and the wider hippopotamus facility and the current animals held.

The inspection team were satisfied that there were no issues in the house, as would be expected in many of these types of respiratory disease events. In reviewing water quality issues, the Enterococci and *E.coli* counts were thought to be high by some members of the team, however the inspectors noted that the results were measured against drinking water levels as indicated by the European Union (Drinking Water) Regulations (2023) S.I. No. 99 of 2023 which had been reported by the responding laboratory, whereas a more relevant standard would be the Bathing Water Quality Regulations (2008) S.I. No. 79 of 2008 and its subsequent amendments:

Microbial parameter (cfu/100ml)	Hippo pool sample		Potable water ref[1]	Bathing water ref (inland water)[2]		
	Indoor	Outdoor		Excellent	Good	Sufficient
Intestinal enterococci	61	97	0	200(*)	400(*)	330(**)
E.coli	100	>300	0	500(*)	1,000(*)	900(**)

[1] taken from the European Union (Drinking Water) Regulations (2023), [2] taken from the Bathing Water Quality Regulations (2008), * Based upon a 95-percentile evaluation, ** Based upon a 90-percentile evaluation. Note: the bathing water references are for inland water, for coastal water the values change to: Intestinal enterococci: 100, 200, 185; *E.coli*: 250, 500, 500 for each value, note the parameters would still be good or above water quality.

As the testing laboratory is measuring the samples against drinking water then the test cuts off at >300 so it is not possible to identify whether the outdoor pool has a higher intestinal enterococci burden, however the *E.coli* values are low and the inspectors believed it is likely to be at a similar concentration but less than the 'good' bathing cut off of 1,000cfu/100ml. The inspectors recognised that (a) the faecal contamination of the pool water was not considered excessive and was comparable to that of inland water bathing parameters in Ireland considered 'good' to 'excellent', (b) that the faecal contamination of hippo water is common and considered normal for the species who defecate in water (see discussion below), (c) the hippopotamus have access to water troughs and are not expected to drink this water and regularly use their troughs for drinking, and (d) the intestinal bacteria found from faecal contamination of the water are not the types of bacteria that were suspected to have caused the septicaemia. Therefore, the water quality concerns are unfounded (as the water is relatively clean despite faecal contamination) and is highly unlikely to be linked to the cause of death as indicated by the post-mortem findings. The inspectors also noted that the indoor pools are dumped and filled every third day which likely accounts for the good water quality due to the volume of the pools and the limitation of how much faeces can be produced in that time.

The inspectors note that in the wild as water dries up hippo ponds form and when sampled they can be used to monitor the microbiome of the animals themselves as the water effectively becomes so heavily contaminated that they become homogenous with their own intestinal flora (Dutton et al, 2021). They are effectively sitting in their own sewage and when the water comes back this can be washed away and have extremely negative impacts on the aquatic water life downstream. The wild hippos being unaffected by these high coliform and other intestinal bacteria in the water they live in and drink. Stomeel et al (2016) demonstrated that hippopotamus density is not dependent on water quality but the actual expanse of the water available.

The source of the bacteria that is suspected in the 'death' of 'Ernie' is unlikely to be identified but the suspected pathogens suggested are all relatively ubiquitous and normal flora on animals and humans. For instance, *Staphylococcus sp*. is common on normal skin; *Trueperella sp*. can be found on the skin and upper respiratory, gastrointestinal and urogenital tract*; and Pasteurella sp.* is common in the upper respiratory tract. Why the normal flora decided to become an opportunistic pathogen can only be speculated, but the likelihood is that either 'Ernie' was immunosuppressed following the previous situation and/or transport, or 'Heidi' had a variant of the normal flora that was novel to 'Ernie' and he was susceptible to it following transport, or a combination of both or other factors. Pasteurella, for instance is extremely common cause of 'shipping fever' and other syndromes such as septicaemia and pneumonia, in domestic cattle, sheep and other species. The pathology being not that dissimilar to that seen here in the case of 'Ernie'. Whether this was the cause or not will likely never be identified. There were no concerns with the housing situation nor 'Ernie's' management on arrival that would have been considered likely to have led to the events that occurred.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection for 2024 was carried out on the 8th of April immediately prior to the arrival of 'Ernie' and so the case was not discussed other than noting he was soon to arrive. Previous concerns were noted that 'Heidi' was a lone hippo and that focal welfare assessments were being maintained alongside active efforts to find her a herd mate.

Outcome of the investigation with regard to the specific case

The inspection team are of the opinion that this was a random case that was not predictable nor avoidable as 'Ernie' showed no demonstrable clinical signs or concerns of abnormal behaviour. This was a case of sudden death and was not an expected risk. There were no concerns with regard to the potential causal factors being related to the hippo facility nor any concerns for 'Heidi'. It was a case that upset both the animal care and the veterinary teams due to its suddenness and the outcome for 'Ernie'.

There was no evidence that this was related to poor water quality, indeed the water quality was considered good to excellent and is well managed in the facility.

As for the comment made by the protected disclosure 02, as to "***No cause of death has been made public***". The inspectors recognise that Dublin Zoo is not obliged to publicly release the cause of death of any of their animals, no zoos in Ireland are. However when agreeing to the investigation they were aware of the likelihood of the materials being reported in the public domain on release of this report.

The concerns are unfounded and therefore the 'allegation' is considered 'unsupported'.

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5.0 'IMANI' HIPPOPOTAMUS CATARACTS

Date of incident:	Alive, arrived 2nd of October, 2024
Species & identification:	Common hippopotamus (*Hippopotamus amphibius*) 17 years and 9 months (at the time of arrival) Local ID A24M25

Allegation:

Protected disclosure 01: Included a review of all of the hippopotamus as part of a general species welfare audit in response to Case 4.0 'Ernie'.

Protected disclosure 02: first email complaint with regard to Dublin Zoo sent directly to the NPWS Zoo Licensing Team;

"*Imani arrived at Dublin Zoo in September 2024 from Antwerp Zoo and has been kept indoors ever since his arrival. He has not been introduced to Heidi and has no access to the outdoor enclosure. Imani has cataracts and will go blind if these are not operated on. It is now six months since Imani arrived at Dublin Zoo but the cataracts have not yet been treated*".

Origin of the allegation:	Protected disclosure 01, 20th January, 2025 Protected disclosure 02, 17th February, 2025

Documents reviewed as part of the investigation:

1st March, 2025	Specimen Report, 3rd Oct 2024 to 1st March, 2025
26th February, 2025	Focal Welfare Assessment, 'Imani', Oct 2024 to Feb 2025
19th February, 2025	Irish News, 19th February, 2025
25th January, 2025	Medical History Report, 'Imani', 7th Oct 2024 to 25th Jan 2025

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

'Imani', 17 years and 9 month old, female common hippopotamus (*Hippopotamus amphibius*) arrived from Antwerp Zoo on the 2nd of October, 2024. She had been born at Antwerp and spent her entire life at the zoo with her mother who sadly passed away earlier in 2024. On arrival it was noted that she had bilateral cataracts, which was noted by both the Antwerp Zoo team and the Dublin Zoo staff. This had not been noted prior to her move.

'Imani' spent a considerable amount of time in her pool for the first few days, she slowly started to eat as she gained confidence in her immediate surroundings, supported by the animal care team. On the 7th of October, 2024 she was moved to allow her pool to be drained and at this time was assessed by the veterinary team. The veterinarian confirmed that "*Her vision is definitely limited and she has adopted alternative coping mechanism in terms of manoeuvring around the habitat which is suggestive that the cataracts are chronic or a long standing issue*". 'Imani' slowly got used to her environment and a full

focal welfare assessment was undertaken by the team on the 11th of October, "*It is very apparent that Imani does not have full vision in either eye. She has been eating better as the week progressed and seems responsive to keeper calls. She is still nervous moving around her habitat and prefers to stay in the pool. Her welfare parameters are good overall if she can continue to manage and compensate for apparent blindness or partial blindness*". The vet noted that 'Imani' "*when moving around the indoor area she can be seen using her nose and whiskers to navigate corners, poles etc. she went out very briefly and displayed an exaggerated front step when moving over the terrain. She also has a number of scrapes, grazes and cuts on both front feet. I would have a high degree of confidence that the bilateral cataract she presents with is impacting her sight and it's possible this is a mature presentation".*

Soon after this she developed pustules on her skin, a condition which she had been reported to have had at her previous collection. This was assessed by the veterinary team and responded to treatment but persisted for several months with a dermatologist brought in to support the team to aid in resolving the condition. A combination of antibiotics, lesion flushing and application of sudocrem was applied to treat the lesions. Bacterial culture identified *Streptococcus sp.* initially and later secondary opportunistic bacteria such as *Aeromonas sp* and *E.coli* were identified, both were considered water contaminants. See 'Heidi' case discussion for further details, as 'Heidi' developed similar lesions a short time after 'Imani'.

In early November, discussions were had with specialist ophthalmological surgeons and those experienced in anaesthetising hippos. There were multiple stages required to assess the eye, the level of pathology and the surgical options available. The initial requirement was to train 'Imani' to accept eye drops and potentially diagnostic ultrasound of the eye. Training started, this was slightly delayed to allow 'Imani' to get used to her enclosure and become confident in negotiating the area, with training taking until the middle of December to achieve the administration of the drops but required more consistency in its frequency of application which took until February 2025. This was progressing well at the time of the inspection but is slow going due to 'Imani's' blindness and the reluctance of the animal care team to push her too much due to the confidence she has in mapping her enclosure and the delays due to the skin issues.

Surgery is planned for later this year, where the eyes can be assessed and surgery undertaken which potentially, depending on the condition of the retinas, provide her with vastly improved vision, albeit won't be perfect.

Findings of the investigation with regards to the specific case

- 'Imani' arrived on the 2nd of October, 2024
- On arrival the Dublin and Antwerp zoo teams both identified she had bilateral cataracts, these were later confirmed as mature/chronic and had been there for a considerable amount of time

- Due to the partial/complete blindness her introduction to the facility and 'Heidi' has been slow as she literally has to feel around her enclosure with her nose and whiskers to create a 'mind map'
- 'Imani' developed a pustular dermatitis, possibly bacterial but was noted at the previous collection. Similar lesions have been mentioned in hippopotamus before e.g. Helmick (2017) and Spriggs et al (2012). This equally delayed cataract surgery.
- Planning meetings with specialist ophthalmologists outlined a surgical plan for 'Imani' back in November, however pre- and post-surgical management require that 'Imani' is trained to accept eye drops and potentially ocular ultrasound, this is also taking time as she gets used to her enclosure and the training
- Surgery for the cataracts is planned for later this year once optimal conditions for surgery have been achieved. This is expected relatively soon (the next couple of months).

Interpretation by the investigation team

Reviewed as part of the original protected disclosure 01 the inspectors did not identify any concerns with regard to the care and welfare of 'Imani' nor links to the death of 'Ernie'.

Protected disclosure 02 'allegation' stated that "***Imani arrived at Dublin Zoo in September 2024 from Antwerp Zoo and has been kept indoors ever since his arrival***", this opening statement has numerous errors as 'Imani' arrived in October 2024, has had access to the outdoor enclosure most days once she got used to navigating that habitat, and 'he' is actually a 'she'. These errors are not dissimilar to previous allegations made against Dublin Zoo 2022 to 2024 where the 'allegation' is based on second or third hand information and that is often not reflective of the facts of the case. The 'allegation' goes on to say that "***He has not been introduced to Heidi and has no access to the outdoor enclosure***" whereas the husbandry records clearly indicate that 'Imani' has been maintained in the adjacent enclosure next to 'Heidi' from the moment she arrived on site. The husbandry records record as early as the 4th of October 2024 that, "*…it appears that herself and Heidi were beside each other at the bars – based on water/splash patterns on the concrete this morning*". There have been numerous other reports that they are engaging through the bars and appear to be mixing well. It is true that they have not been mixed directly together yet as there are valid concerns that due to 'Imani's' partial/complete blindness that a mix could risk 'Imani' not being able to read social queues and inadvertently cause annoyance or even physical injury, this is planned to be delayed until the surgery has been attempted to ensure that any mixing is optimal. As stated above, it is not factually true that she has "***no access to the outdoor enclosure***", the inspection team witnessed her outside at the investigation and reviewed multiple pictures of the skin lesions and cataract lesions from October 2024 to February 2025 and many of these were taken with 'Imani' in the outside area.

Protected disclosure 02 'allegation' went on to state that "***Imani has cataracts and will go blind if these are not operated on.***" The cataracts 'Imani' has are considered mature, this has been assessed by both the on-site veterinary team and the specialist ophthalmologists. Cataracts can be related with retinal dysfunction and it is not uncommon to undertake

electroretinography prior to cataract removal as it is possible that 'Imani' is blind, however there is some evidence she can 'see' shadows and is only partially blind, hence why surgery is expected to give her improved eyesight, but not normal eyesight. Not performing surgery on the cataracts is highly unlikely to lead to retinal diseases nor pan ophthalmitis and it is unlikely that her vision will deteriorate any further than the level of blindness she has currently, where she currently has to feel her way around the enclosure with her nose, whiskers and feet. Surgery for cataracts though can result in damage to the eye, especially in a hippopotamus where there appears to be only one ever case that has been considered (the inspection team cannot find any evidence as to whether this animal actually underwent the propose surgery and the owner died in 2018 so no follow up was possible). The inspection team believe this will be the first reported case of a hippopotamus undergoing cataract surgery and the risk benefit has been taken into consideration when approaching this case, with the positive potential for her eyesight balanced against the worst case scenario not being much different to her quality of vision now.

Finally, the protected contact 02 'allegation' stated that, "***It is now six months since Imani arrived at Dublin Zoo but the cataracts have not yet been treated***". Whilst this is true, the decision to delay surgery is valid in the opinion of the inspectors for multiple reasons: (a) 'Imani' was partially/completely blind on arrival and she needed time to accommodate to her surroundings and learn her 'mind map', to undertake surgery when she was not aware of her surroundings nor confident and secure would have been unethical, (b) pre- and post-cataract surgery requires considerable preparation and post-surgical care, one of which is being able to apply eye drops regularly, this has required training and building a relationship of trust with 'Imani' which the animal care team have achieved and are working to ensure consistency in giving the drops, (c) 'Imani' had skin disease for a lengthy period and the treatment and resolution has been prolonged, to attempt cataract surgery with such an infectious disease present would increase the risk of failure and so the skin issues needed to be resolved before surgery could be contemplated, and (d) such an undertaking has never been performed before as far as the investigation team are aware in talking to other specialist surgeons in the field and as such there are several unknowns but these are balanced against the potential benefits for 'Imani' and so this needs to be carefully considered from an anaesthesia, surgical and nursing perspective, this takes time. This is considered an elective surgery and not one that needs to be rushed: careful planning and consideration will be critical to achieving an optimal outcome for 'Imani'.

'Imani's' dermatitis that affected her during October and persisted for some time was present and known in her medical history at Antwerp. The causal factors are unknown and it is possible this is a (a) a primary bacterial or viral condition that 'Imani' is a carrier of, this having been seen at the previous zoo, (b) an exposure to a pathogen that both animals were exposed to, the stress of the transport making them more susceptible, (c) or an underlying condition, such as an autoimmune disease with secondary, normal bacterial opportunistic infection, or (d) another cause as yet to be identified. The knowledge that she has had this previously suggests that it has come with her, either subclinical disease or carrier status that flares up occasionally, or possibly an underlying autoimmune disease that flares up as and when in response to some sort of trigger. Similar diseases have been reported in hippopotami (Helmick, 2017; Spriggs et al, 2012).

As to why the cataracts were not noted in the medical history prior to 'Imani's' arrival is surprising but is not a reflection on the team at Dublin Zoo who noted it as she stepped out of the crate. However, the inspection team were surprised at how difficult it is to see due to the extremely small pupil size in the hippopotamus and the extremely limited dilation of the pupil even when the eye thinks there is no light (which occurs in the presence of a mature cataract). 'Imani' was born and bred in her Antwerp home and knew the layout of her enclosure before the cataracts developed, or they were present form birth (congenital cataracts, possible but unlikely), and with the guidance of her mum she would have understood the lay out of her enclosure and been able to navigate it as if she were fully sighted. This is not uncommon with blind animals, even those that have had bilateral enucleations. Appearing, for all intents and purposes, that she was behaving as a sighted animal.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection for 2024 was carried out on the 8th of April, six months before 'Imani' arrived. Previous concerns were noted that 'Heidi' was a lone hippo and that focal welfare assessments were being maintained alongside active efforts to find her a herd mate, 'Imani's' arrival was in part a response to 'Heidi' being a lone animal.

Outcome of the investigation with regard to the specific case

Protected disclosure 02, and to some degree protected disclosure 01, imply that the welfare of 'Imani' is not being considered and her needs not met. The implications that Dublin Zoo are not carefully considering her welfare is not supported, and as such the case is considered unfounded. Several of the basic facts were incorrect in the original 'allegation' which is a trait that is commonly seen in the allegations made historically with regard to Dublin Zoo. The lack of evidence of welfare provision has been implied as Dublin Zoo providing poor welfare, where in fact the inspection team have commended the Dublin Zoo team on the care, compassion and considered approach to the management of a partially/completely blind hippopotamus whose welfare is foremost in the thoughts of the team. This is a well managed, elective surgical case and the inspection tea found the 'allegation' to be unfounded.

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- Spriggs et al (2012) Treatment of Vasculitis and Dermatitis in a 59-yr-old Nile Hippopotamus, JZWM, 43(3), pp652-656

6.0 'HEIDI' HIPPOPOTAMUS SKIN LESIONS

Date of incident:	Alive, dermatitis started 13th January, 2024
Species & identification:	Common hippopotamus (*Hippopotamus amphibius*) 23 years and 6 months (at time of inspection) Local ID A2M068

Allegation:

Protected disclosure 01: Included a review of all of the hippopotamus as part of a general species welfare audit in response to Case 4.0 'Ernie'.

Protected disclosure 02: first email complaint with regard to Dublin Zoo sent directly to the NPWS Zoo Licensing Team;

"I recently visited Dublin Zoo and witnessed that Heidi has at least six open sores on her back, which have apparently been treated with sudocrem. I also witnessed a magpie pecking at these open sores causing obvious distress to Heidi who had no place to escape to. This is unacceptable. The pool which only Heidi has access to is filthy and according to whistleblowers has high e-coli contamination".

Origin of the allegation:	Protected disclosure 01, 20th January, 2025 Protected disclosure 02, 17th February, 2025

Documents reviewed as part of the investigation:

1st March, 2025	Specimen Report, 13th December, 2002 to 1st March, 2025
25th January, 2025	Medical History Report, 'Heidi', 20th Jan 2024 to 25th Jan 2025
39th September, 2024	Focal Welfare Assessment, 'Heidi', April 2023 to Sept 2024
24th January, 2023	Focal Welfare Assessment, 'Heidi', May 2022 to Jan 2023

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

'Heidi', a 23-year-old, female, common hippopotamus (*Hippopotamus amphibius*) born at Basel Zoo on the 16th of August 2001. She came to Dublin Zoo on the 13th of December 2002, when she was just over a year old.

'Heidi's' history is unremarkable with no major medical events in her history other than sparring wounds with the other hippos, broken nails, a broken tusk and a history of corvid peck injuries to her skin (discussed below in detail). She gave birth to a female calf 'Atiya' on the 12th of September, 2011, when she was ten years old. She had previously conceived, but the male calves born in 2006 were still born, the second aborted early into pregnancy. 'Atiya' left the bloat in 2014, and 'Heidi' has been a lone hippopotamus since 2017 when 'Henri' the male died on the 17th of November 2017. Efforts were made to bring in a new companion for 'Heidi' with 'Ernie' arriving early 2024 but he died soon after (see separate Case 4.0) and then 'Imani' arrived late in 2024 on the 2nd of October 2024.

On the 9th of January, 2025 'Heidi' developed a growth on her upper back leg, pictures were taken and sent to the veterinary team. On the 12th of January, 'Heidi' was identified with a second similar lesion, which was initially described as a "*burst blister on the inside of her upper right leg, almost on her body*". Due to concurrent lesions on 'Imani's' skin with bacterial cultures identifying initially *Streptococcus sp.* it was decided to treat them in the same manner with antibiotics. This responded well to treatment and the lesions started to dry up by the 15th of January, however a new lesion had appeared, these being difficult to see in the early stages due to the thickness of the skin. It was not clear whether these were connected or separate lesions. The case was discussed with the dermatology specialist when he came to assess both 'Imani' and 'Heidi'. The dermatology veterinary notes record that the original lesions from the 9th of January had almost fully healed now. Initial culture results from 'Imani' recorded a number of isolates including *Streptococcus pseudoporcinus*, *Pantoe sp.*, *Streptococcus dysgalactiae* (sensitive to trimethoprim-sulphonamides – the antibiotics used in the case), and *Escherichia coli* (resistant to trimethoprim-sulphonamides). A good response to the trimethoprim-sulphonamides was reported. The lesions on 'Heidi' were not dissimilar to those seen on 'Imani' and these culture results identified *Aeromonas hydrophilia* and *E.coli*. *Aeromonas hydrophilia* is common in freshwater and this was hypothesised as being a potential opportunistic pathogen in both cases. It was also hypothesised that the causal pathogen was potentially brought in by 'Imani', noting that she developed initial signs on the 17th of October 2024 and 'Heidi's' lesions did not appear until the 9th of January 2025. This was still being manged and the epidemiology continuing to be assessed at the time of the inspection.

'Heidi' also has a history of corvid (magpies) pecking her skin, this not being uncommon in large species such as rhinoceros and hippopotamus. This was briefly mentioned as an issue starting in 2011 where she had three incidents and then not again until 2017 where it has been regularly consistent annually with considerable variation. There appears to be a seasonal pattern to this with the majority of corvid-peck injuries occurring in December to March, and a smaller period with less frequent cases occurring in June to September, see figure 06-01. Wounds are treated with the use of sudocrem being applied to the lesions and they heal well, albeit slowly.

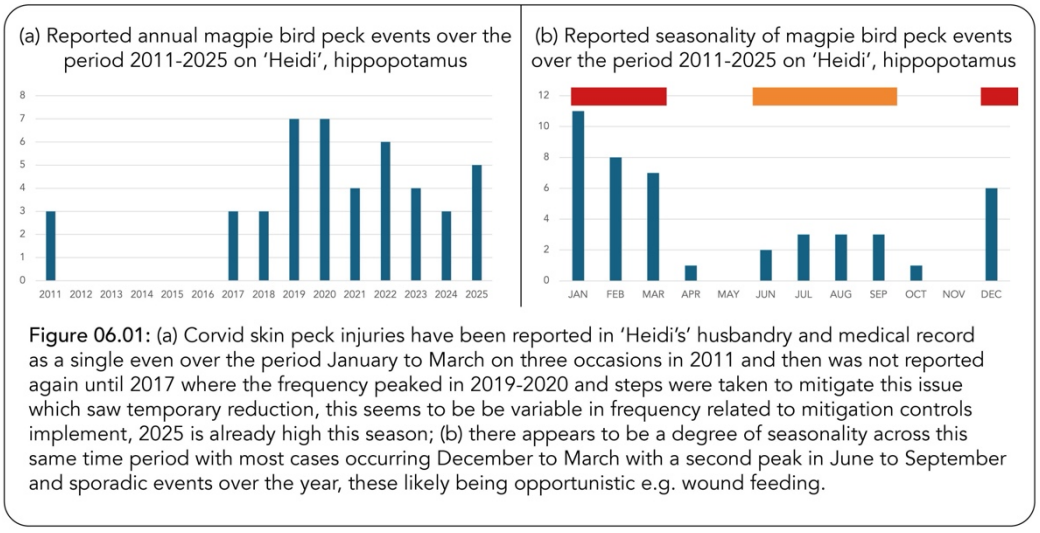

Figure 06.01: (a) Corvid skin peck injuries have been reported in 'Heidi's' husbandry and medical record as a single even over the period January to March on three occasions in 2011 and then was not reported again until 2017 where the frequency peaked in 2019-2020 and steps were taken to mitigate this issue which saw temporary reduction, this seems to be be variable in frequency related to mitigation controls implement, 2025 is already high this season; (b) there appears to be a degree of seasonality across this same time period with most cases occurring December to March with a second peak in June to September and sporadic events over the year, these likely being opportunistic e.g. wound feeding.

Findings of the investigation with regards to the specific case

- 'Heidi' was born on the 16th of August, 2001, arriving at Dublin Zoo on the 13th of December, 2002.
- In her history she has had an unremarkable medical history with the usual skin wounds interacting with the male, a single tusk damage incident, and two skin complaints, one possibly related to the skin lesions seen on 'Imani' and those related to magpie peck injuries.
- The magpie related issues were first reported in 2011, with a hiatus of six years, with lesions starting again in 2017 and continued uninterruptedly until the present day.
- There have been a total number of 45 separate magpie peck injury events in 116 reports of 'bird peck injury' in her husbandry records, the majority of these referring to the treatment of the injuries (i.e. of the 116 records 45 refer to fresh injuries assessed as new incidents and 71+ are with regards to their treatment and healing e.g. 1 fresh wound may have three or more comments on treatment).
- There is a reported average of 2.9 events/year for the period of 2011 to present day, this increasing to 4.6 a year if considering frequency in years where magpies were active (if excluding 2011 and 2015 due to an incomplete data set).
- Seasonal variation demonstrates an average of 3.75 events/month over a year period, with the peak season frequency rising to 8 events/month and the secondary highest season reducing to 2.75 events/month, demonstrating the increased frequency over the winter.
- The wounds are noted quickly and treated with sudocrem and sometimes intrasite gel and flamazine cream, which prevent progression and allow the wounds to heal, albeit slowly in the case of those healing by secondary intention.
- Mitigation is in place but is variable in its effectiveness, however there is a demonstrable reduction when mitigation methods are deployed.
- It was reported that, whilst it does vary, the magpies are able to access the house and wounds have been noted to occur inside as well as outside. Isolating the hippopotami indoors has no impact on wounding reduction.

Interpretation by the investigation team

Reviewed as part of the original protected disclosure 01 the inspectors did not identify any concerns with regard to the care and welfare of 'Imani' nor links to the death of 'Ernie'.

The inspection team cannot comment on the validity of the statement made by protected disclosure 02 "*I recently visited Dublin Zoo and witnessed that Heidi has at least six open sores on her back, which have apparently been treated with sudocrem. I also witnessed a magpie pecking at these open sores causing obvious distress to Heidi who had no place to escape to.*" as no interview was carried out with the individual(s) making the statement nor any images supplied as part of the submitted allegation. However, the inspection team assessed 'Heidi' on the 4th of March 2025, and this was considered likely to be within a month or so of the protected disclosure 02 visit (assumed, not confirmed). At the inspection the inspection team noted that 'Heidi' had a total of nine lesions on her right side and a further 11 on her left. These were classified as 'open', where a wound was

approximately 20mm in size but open with visible epidermis or dermis visible and the wound edges were not in alignment, the wound healing by secondary intention; or 'closed' where the wound edges were in opposition and had effectively sealed, with the wound healing by primary intention. The 'open' wounds were less frequent with seven being classified as 'open' and thirteen classed as the 'closed' type. These were all considered consistent with potential magpie-peck wounds as suggested in the allegation, however no magpies were noted in on the hippopotami nor within the vicinity of the enclosure at the time of the inspection.

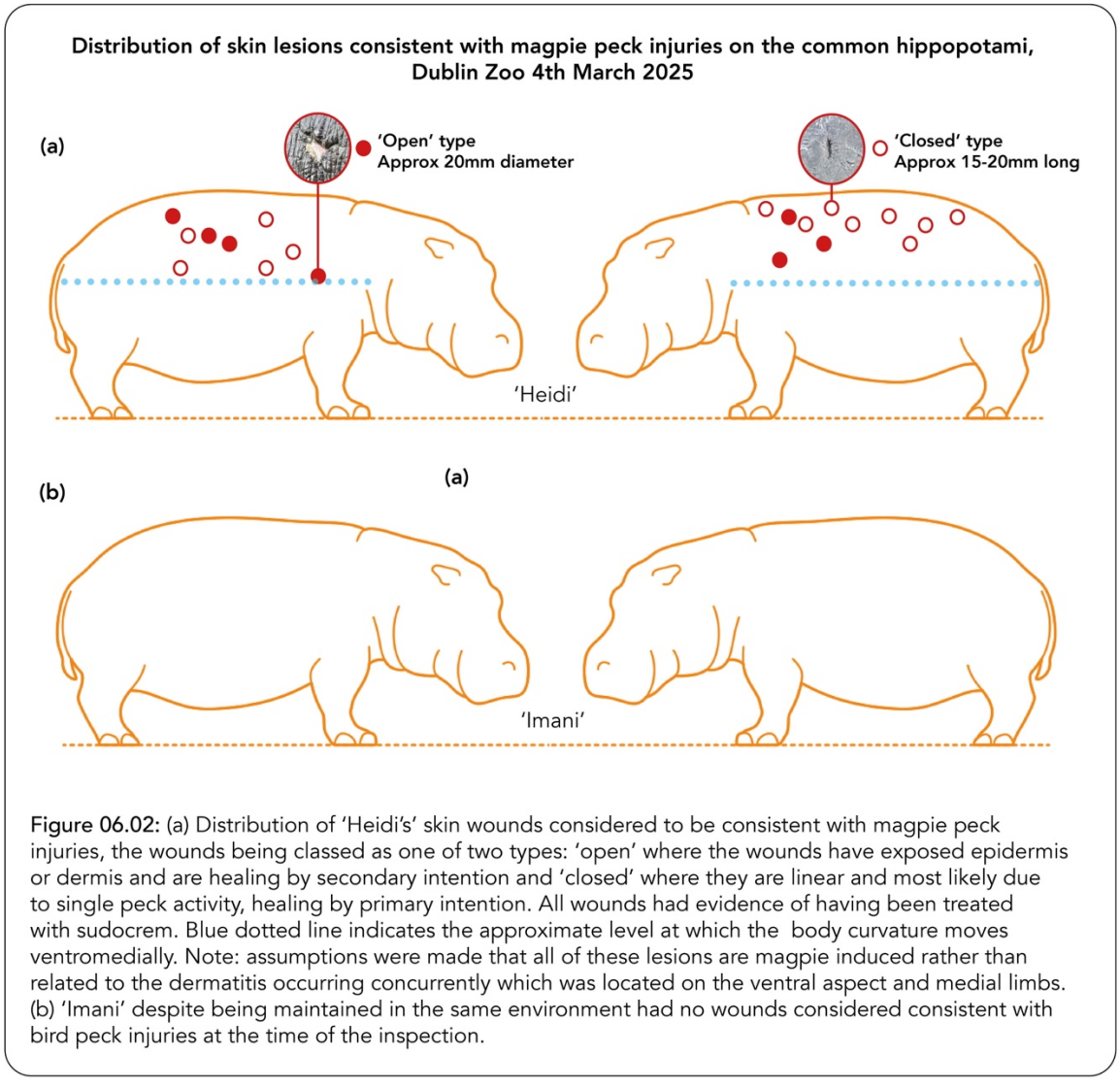

Figure 06.02: (a) Distribution of 'Heidi's' skin wounds considered to be consistent with magpie peck injuries, the wounds being classed as one of two types: 'open' where the wounds have exposed epidermis or dermis and are healing by secondary intention and 'closed' where they are linear and most likely due to single peck activity, healing by primary intention. All wounds had evidence of having been treated with sudocrem. Blue dotted line indicates the approximate level at which the body curvature moves ventromedially. Note: assumptions were made that all of these lesions are magpie induced rather than related to the dermatitis occurring concurrently which was located on the ventral aspect and medial limbs. (b) 'Imani' despite being maintained in the same environment had no wounds considered consistent with bird peck injuries at the time of the inspection.

The number of wounds was consistent with those reported in the allegation, as was the sudocrem. However, knowledge of the product used to treat the wounds appears to infer previous knowledge as sudocrem looks like many other products, including flamazine which has also been used to treat the lesions. As such this was assumed to have been information provided by the whilstleblower or discussion with a keeper rather than by direct observation. The 'closed' type lesions are unlikely to be visible from a distance as they are subtle and only apparent when close and standing next to the animal, hence the

discrepancy with the total number of lesions noted in the allegation and those noted at the investigation.

The wounds were all above the midline of the body, this being consistent with the birds landing on the wide back of the hippopotamus and having easy access with to the skin, more ventrally not being accessible. 'Heidi' was considered overweight and had a much broader body frame than 'Imani' and this may have facilitated the back to act as a perch and provide access for the magpies. 'Imani' had no similar lesions. All of 'Hedi's' wounds noted were superficial, even the open lesions.

The protected disclosure 02 also went on say that "*I also witnessed a magpie pecking at these open sores causing obvious distress to Heidi who had no place to escape to. This is unacceptable."* The inspection team did not witness any magpies present on the wounds but this is consistent with the comments made by the animal care team and the species of corvid that is being addressed by mitigation measures, and whilst not common this would appear to be extremely good timing on the part of the witness. If any images were taken at this time it would be useful to have access to these as part of the follow up reviews of the case. Magpies were determined to be the primary culprit as the cause of the lesions. The inspectors note that in discussion with the animal care team, the magpies are able to access the indoor area through both the rhinoceros and hippopotamus doors and that these peck events occur both in the outside enclosures and the indoor enclosures, therefore there is no way of providing direct protection against the magpies from attacking other than considering prevention of the magpies in the area e.g. culling of local magpie population, the use of bird scarers, or similar

Whilst the inspection team agree that steps must be taken to minimise, or even prevent, such magpie attacks on 'Heidi' there is not a simple solution to overcoming this as Dublin Zoo has been attempting to deal with this for the last fourteen years with variable success. Magpies attacking livestock is considered rare but is well documented in the literature (Schorger, 1921; Berry, 1922, and BBC News, 2019), but is not limited to just magpies as other bird species specifically feed off blood and tissues from live hippopotami in their range countries (Plantan, 2009; Bosque, 2009; Bolivar, 2009; Plantan, 2012; and Ndiovu, 2015). The inspection team are also aware of captive white rhinoceros in the UK having similar lesions on their backs from magpie peck wounds, these other collections having similar challenges in their management. In many cases, as reported in wild hippopotamus observations, the birds initially peck at existing wound edges, these being common in hippopotami, and this leads to the birds opening the lesions to feed on the flesh and fresh blood. However, they have also learnt to instigate initial wound damage where they feed on both the blood and the tissue directly (Pantan, 2009, Pantan, 2012). Interestingly, the larger ungulates tolerated wild birds such as oxpeckers more so than medium-sized ungulates, which was considered to be down to their reduced agility and the more stable perch with a greater feeding area offered by the larger mammals (Ndiovu, 2015). In a case in the UK, where donkeys were actively having flesh removed from their backs by magpies, the affected donkey sanctuary attempted bird scarers which were ineffectual and were advised to consider culling the local magpies. Some of the older reports (Schorger, 1921; Berry, 1922) reported magpies being able to access the kidneys and even having a

preference for these, with intestines being visible through their action not being uncommon, although this has not been reported in more recent examples of such attacks.

Mitigation is primarily aimed at reducing or removing the magpie population. Bird scarers (visual) can be used but often have little to no effect on corvids, with audio distress calls being the more effective but have the unintended consequence to clear the area of other birds and in a zoo-setting will likely have welfare implications for the captive birds that cannot extricate themselves away from the perceived source of distress. Larsen traps have been effectively deployed to capture and cull local magpie populations in other cases. Whilst this is permitted under the Wildlife Act (Approved Traps, Snares and Nets) Regulations (2003) and Section 35(5) of the Wildlife Act, Dublin Zoo recognise that there are ethical and welfare challenges in their use. A combination of mitigation management tools are used by Dublin Zoo and the welfare of the hippopotami are balanced against any concerns for the welfare of the local native and captive bird population as a result of mitigation measures taken. The efficacy and the steps taken vary proportional to the risk and welfare concerns for the hippopotami, the current situation being a surge and steps implemented proportional to the welfare need of 'Heidi'. This is a difficult case as to do nothing has potential to compromise 'Heidi' and to act may have inadvertent welfare impacts on native and captive birds depending on what methods are undertaken. In discussion with Dublin Zoo this has been carefully considered and is reviewed regularly.

Finally, the protected disclosure 02 statement stated, "***The pool which only Heidi has access to is filthy and according to whistleblowers has high e-coli contamination***". Firstly, 'Heidi' has access to two pools, one inside and one out. The outside area is shared with 'Imani' and so there is not constant access to the pool area until 'Imani' has undergone, and recovered from, cataract surgery, but 'Heidi' has constant access to a pool either inside or out, except when it is being drained for cleaning and refilled which takes approximately two hours. The pools are dumped between 1-3 days, more when there are skin issues, less when there are not. Faecal contamination of the water is rapid as they prefer to defecate directly into the water and this is normal. Build-up of waste is not possible due to the frequency of cleaning. This has been discussed in detail in Case 4.0 for 'Ernie' and there is no evidence to suggest that the *E.coli* or *intestinal enterococci* parameters in the hippo pools are any worse than that of inland bathing fresh water in Ireland that is suitable for human use and are considered either 'excellent' or 'good'. These are considered more than adequate for a hippopotamus.

It is also noted that whilst there is *E.coli* in the hippopotami water (they prefer to defecate into the water, so intestinal bacteria will therefore be in the water), and the skin lesion bacterial cultures did include the presence of *E.coli,* the inspectors noted that the *E.coli* from the skin lesions was resistant to the antibiotics used to treat the wounds. As the wounds responded quickly to the antibiotics it is highly unlikely that these resistant intestinal bacteria were causative pathogens for the lesions, but were simply secondary contaminants from 'Heidi' entering the water.

Why 'Imani' has no visible peck injuries is not clear, possibly there is a factor of 'Heidi's' weight that plays a part in the epidemiology, but this is speculative. However, whilst there

must be a reason why the magpies are proactively selecting against 'Heidi' and not 'Imani', the inspectors do not know what the reason for this is.

Zoo Inspection process reflective of addressing the welfare concerns

The zoo inspection for 2024 was carried out on the 8th of April, prior to the January 2025 skin lesions noted and outside of the period where there was a high incidence of magpie – peck injury. Previous concerns were noted that 'Heidi' was a lone hippo and that focal welfare assessments were being maintained alongside active efforts to find her a herd mate, 'Imani's' arrival was in part a response to 'Heidi' being a lone animal. Mention was made in the 2022 inspection report that "*the zoo must undertake a review of pests, and subsequent impacts of such pests, at the African Savannah and must action steps to ensure effective control"*, whilst this is vague in its scope this may, or may not, refer to the magpie issue on the African Savannah.

Outcome of the investigation with regard to the specific case

The inspection team recognise that there is a moderate number of peck-injuries made by magpies on 'Heidi' but also recognise that there are proactive mitigation strategies in place that are evidenced to reduce the numbers of cases that occur annually. The inspectors also note that the Dublin Zoo team have an effective treatment and training programme that allow the wounds to be treated rapidly when they do occur, with most healing quickly unless they fall into the 'open' category. However, the inspectors do believe that this is an area that needs annual review and strategies put in place to take seasonal action where peaks are noted, as well as robust documentation of the effectiveness of the actions taken. These should be combined with more detailed formal processes that identify new wounds and more effectively differentiate them form the recording of existing wounds, including the wounds that are being treated.

As is the case for wild hippopotami, the inspectors note that whilst 'Heidi' does tolerate the presence of the birds on her back, the situation management must focus on prevention rather than cure to mitigate or remove the impact of the magpies on the hippopotami's welfare at the point the wounds are made. Equally, the focal welfare assessments should be increased to monthly audits during the height of the primary and secondary high-risk seasons to ensure the impact and mitigation of the magpies is accurately and formally documented. It is also advised to increase the frequency of water testing and use bathing water metrics for comparison to understand the biological loading of the water systems used in the hippopotamus facility, that is not to say there is an issue with the water, simply that more data would be useful to understand and clarify the effectiveness of the water quality maintenance in the facility.

Considering whether the case is supported or unfounded is not black and white. On the grounds as to whether 'Heidi' has magpie-peck injuries or not, the case is supported. However, the allegation itself states that they are being treated and are under veterinary care. The question is whether Dublin Zoo is actively managing and trying to prevent the issue of the magpies attacking the hipopotami? To that the inspection team are confident

that mitigation steps are taken, however could these be better documented and the mitigation better demonstrated and assessed as to their effectiveness, the answer to that is yes when assessed by the inspection team. A lack of documentation to works carried out though is not a lack of action being taken, this is clear in talking to multiple staff and looking at the annual trends over the 14-year assessment period. As such, the inference that 'Heidi' is being neglected when it comes to the magpie-injuries is not supported.

In addition, the inspection team are of the opinion that the comment in reference to the *E.coli* levels in the water are high is not considered to be the case as the original parameters provided to the individual's making the allegation were considered against parameters for potable water, not bathing water for which the values for the inside and the outside pool are considered good to excellent, depending on which pool and the individual parameters assessed against legislative controls (see Case 4.0 for details).

Taking this all into consideration the inspection team have made the decision to consider this allegation as unfounded due to the discrepancy between the actions taken by Dublin Zoo and those inferred by the allegation. Recommendations have been made to improve how the ongoing management of the magpies is documented, rather than a need to change the mitigation processes already in place.

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NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION
APPENDIX 02

WELFARE ALLEGATIONS – INDIVIDUAL SUMMARY CASE ASSESSMENTS

DATE:	21st JANUARY 2025– 4th MARCH 2025	

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
01	Austin & Bossou, Chimpanzee Males 'Austin' 34 years 'Bossou' 21 years Alive	Two male chimpanzees, one of which is severely disabled, have been kept indoors for several years with no natural light. What are the plans for these chimpanzees? Why are they not on show to the public?	• Bossou has had a number of digits amputated following another chimp attack, see Dublin Zoo Special Report Case 08, 2022. He is far from disabled and leaves a relatively normal life. • Austin, Bossou and Betty lived together until she died in July 2024. • Austin and Bossou have 24-hour access to the outdoors and have done since they arrived in the Old Gorilla House on the 17th of February 2022, other than when the house is being serviced or the weather is inclement. • The main indoor pen has a large skylight and the smaller, side nursery pen has windows to the outside – natural light is present. • Robust evidence to demonstrate that these areas are used regularly (daily) and allegations lack any credibility. • Plan to reintegrate the two troops back into one to be realised later in 2025-2026 which requires house modifications and export of one male, details reviewed and acceptable process. Unfounded	• Bossou visually assessed and moves, walks, climbs, feeds, etc as a normal chimp – not noticeable from distance that he has lost digits, not considered disabled. • Welfare Officer has Zoo Monitor maps demonstrating indoor and outdoor usage of the enclosures. • Credible witness statements from animal care team, veterinarian, and animal welfare officers, • Inspection team visited the site on both days and witnessed chimpanzees used to going in and out, not representative of animals only allowed out on the day of the investigation – both were coming in and out regularly during the period they were assessed. • Long interviews with staff and assessment of documentation, well considered plan currently being implemented. CONDITIONS & RECOMMENDATIONS RECOMMENDED

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
02	Mujur, Bornean orangutan Female 18 years Alive	The female orangutan has had three failed attempts at raising offspring, despite the zoos efforts to teach her to breast feed. Will this animal be bred from again	• Mujur is the last orangutan born at Dublin Zoo, back in 2005. • She has had three infants, the first was stillborn, the second died from mismothering despite vet interventions, and the third was pulled after she lost interest, and hand-reared. • She has had no experience watching other dam's rear young and there is a need for this. • Long-term plans in place to address this and several options discussed. Al consider both her needs and the likelihood of success. Primary plan is to build her experience with proven breeding females, either at Dublin or at another facility. Unfounded	• Well documented reviews and interviews with animal care, curatorial and veterinary team. • No concerns with the plan and assured welfare provision for Mujur, potential unborn infants in the future, and the well-being of the animal care team all priorities. • Multi-stakeholder discussions with individuals from various relevant fields. CONDITIONS & RECOMMENDATIONS RECOMMENDED

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
03	Asian elephant herd Mixed Alive	*Why was an established family group, including two sisters and their calves, separated? This is a well-known stressor to elephants. How was this seen as an appropriate time to increase this stress by bringing a breeding bull into a herd with juveniles?"*	• The elephant management programme created innovative ways in which to manage elephants in captivity, this being demonstrated with the breeding success over the last 10-15 years. • This led to a population that was close to exceeding the capacity and for a short 6 month period came close to doing that, until the bull elephants were moved out (3.0.0). • Therefore a move had to be actioned and the obvious choice was one of the two herds that had naturally formed • This herd was moved to USA Nov 2023. • Seven and a half months later a new bull was brought into the zoo, July 2024. • Seven days later Avani showed mild clinical signs of illness and 3 days later deteriorated and died of EEHV (Elephant endotheliotropic herpes virus), six days later Zinda also succumbed to the same disease. • None of them had indirect nor direct contact with the new bull, the virus is assumed to have come from within the existing herd – this is highly likely and the older animals in the herd came from known positive sources. • Others were infected but had sufficient antibody to fight the disease and were	• Well documented process that started seven years ago, with the discussion to move to Cincinnati first formally discussed in 2020 at the Dublin Zoo Ethics Committee • Formally agreed by the Elephant EEP programme managers in February 2021 • Cincinnati agreed and worked with Dublin Zoo to build a facility that was to their specifications and satisfaction, this was larger than Dublin Zoo and built at a cost of $50million USD • Lengthy decision-making process with multiple stakeholders, carefully thought out and carefully implemented, inspectors recognise well managed decision pathways • EEHV not uncommon, the fact that not had any previously is likely down to the excellent programme over the years, however any stressor could have caused recrudescence and whilst it could have been anything, the most likely hypothesis was the male import's presence. This is not a poor judgement, just an unfortunate outcome for what had been a well-considered breeding management programme that was required to

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
			treated with antivirals and plasma transfusions – commendable effort. • No issues have occurred since. • To have not undertaken either move would have led to criticism for overstocking which is a major welfare issue and for keeping animals for non-conservation purposes, either way elephants are controversial and complaints would have been made – see previous allegations 2022 to 2024. Unfounded	address known and real welfare issues rather than potential risks of EEHV or stress to the herd.
04	Ernie, common hippopotamus Male 20 years and 9 months Died 13th May 2024	…includes a review of the passing Ernie the hippo that passed away on earlier this year. We are also concerned about the death of another hippo (20 year-old Ernie) at Dublin Zoo in May 2024, just two weeks after being transferred from West Midlands safari park in England. No cause of death has been made public	• Ernie arrived on the 25th April 2024. • Eighteen days later he died of acute septicaemia, the causal pathogen unknown but most likely differentials from the pathologist was *Pasteurella sp., Satphylococcus sp., or Trueperella sp.* All considered ubiquitous bacteria found on the body as normal microbiota of the body • Hypothesised that the stress of the transport and exposure to novel bacteria led to infection and acute death, this is not uncommon with *Pasteurella sp.* for instance which causes 'shipping fever' and 'haemorrhagic septicaemia' Unfounded	• Gross pathology very clear as to the cause. • No evidence to suggest any failure to provide husbandry needs and appropriate care, had been doing extremely well up until he suddenly died overnight with no prior clinical signs • Water quality mentioned as possible causal factor, no evidence to suggest it was as parameters are considered consistent with good to excellent for Ireland fresh water swimming for humans

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
05	Imani, common hippopotamus Female 17 years and 9 months Alive	Imani arrived at Dublin Zoo in September 2024 from Antwerp Zoo and has been kept indoors ever since his arrival. He has not been introduced to Heidi and has no access to the outdoor enclosure. Imani has cataracts and will go blind if these are not operated on. It is now six months since Imani arrived at Dublin Zoo but the cataracts have not yet been treated	• Imani arrived on the 2nd of October, not September 2024 • 'He' is a female • Imani has had demonstrable access to the outdoors from the 4th of October 2024, 2 days after she arrived. • Imani was noted on arrival to have bilateral mature cataracts, these were not noted on her medical history, and she is partially/fully blind • Cataract surgery was discussed with relevant specialists as early as November but is an elective procedure and is delayed for a number of reasons to optimise the surgery, its after care and so she is fit and comfortable in her surroundings in the recovery phase = this is normal and reasonable with no welfare impacts for her. • She is already 'blind' and needed time to create her mind map of the enclosure which she has now managed to do, delaying the cataract is extremely unlikely to cause blindness, whereas rushing into it would. • In addition, she developed a dermatitis which she had had previously at the previous zoo (presumed seasonal dermatitis), treated and first noted in October at Dublin Zoo **Unfounded**	• Well documented case, agreement from all stakeholders including the specialist surgeons. • Welfare focus has been on Imani and what is best for her. • Able to interact with Heidi through the bars, postponed mixing until after surgery to minimise any risk. • Commended on the care provided and the careful planning. • Typical half information with several facts actually misinformation, simple things such as sex, date of arrival, no access to outside, and cataracts occurred since she arrived are all incorrect

No.	SPECIES	ALLEGATION	FINDINGS	JUSTIFICATION
06	Heidi, common hippopotamus Female 23 years and 6 months Alive	I recently visited Dublin Zoo and witnessed that Heidi has at least six open sores on her back, which have apparently been treated with sudocrem. I also witnessed a magpie pecking at these open sores causing obvious distress to Heidi who had no place to escape to. This is unacceptable. The pool which only Heidi has access to is filthy and according to whistleblowers has high e-coli contamination	• Arrived at Dublin Zoo on the 13th of December, 2002. • She developed a pustular dermatitis January 2025, thought to be linked to Imani. Ongoing work up and diagnostics • Pool water secondary contaminants but unrelated to the E.coli levels which are compatible with good to excellent cleanliness for bathing fresh water in Ireland standards • Magpie peck injuries sporadic over a period from 2011 to present with a hiatus from 2012 to 2016 • Well managed and treated quickly and effectively • Mitigation processes in place minimise the number of events but challenging to manage the magpie population, response considered appropriate and proportionate but could be better documented Unfounded	• Animal assessed by inspection team and lesions can be seen and are responding well to treatment • Mitigation processes in place and can see when look at historical patterns that mitigation reduces numbers of events by 40-60% when not employed • Wounding occurs indoors and outside, more likely in perido Decemebr to March with a smaller peak mid summer • Need to review actions and response CONDITIONS & RECOMMENDATIONS RECOMMENDED

NPWS ZOO INSPECTORATE SPECIAL ZOO INSPECTION
APPENDIX 03

INVESTIGATION TEAM RECOMMENDATIONS AND CONDITIONS

DATE:	6th APRIL 2025

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 highly recommended that the Zoo Licence Holder ensures that the 'Dublin Zoo Mid- and Long-term Management Chimpanzee Plan', version 2 July 2024 is updated to reflect the current plans and that it includes removal of redundant elements and clearly captures where action plans have been started what has been implemented, completed, or not yet undertaken. This document should be reviewed on a quarterly basis with the current developments planned for the next 18 months.

2. It is highly recommended that the 'Old Gorilla House' chimpanzee outdoor exhibit have the boarding removed from the glass windows that look into the off-show woodland to enable the chimpanzees an area that they can view in addition to the existing enrichment they have already.

3. It is recommended that all diet sheets are dated as to the date of creation and the date of review, the author is added, and the version number of the document to ensure that when reviewing the diet sheets it is clear who produced them and when.

4. It is highly recommended that in addition to the mid- and long-term management plans for Mujur, the Bornean orangutan, that the specific breeding management options for her are discussed at the Ethics Committee, considering (i) non=breeding option for her, (ii) temporary non-breeding contraception to allow her to learn through observation rearing by another breeding female(s) at Dublin Zoo, (iii) temporary non-breeding contraception to allow her to learn through observation rearing by another breeding female(s) at another facility, and (iv) options for continuing breeding with her, assuming she will understand the situation at this time.

5. It is highly recommended that regular water testing for E.coli, intestinal enterococci and other parameters to be agreed with the veterinarians, are undertaken for the the two indoor and the outdoor hippoptamus pools. It is recommended that either a laboratory familiar with testing fresh inland water for bathing is used or the current laboratory is used but re-adjusted the reference ranges away from potable water to bathing water standards with the aim that they report results over 300cfu/100ml rather than limited to a cut off reported as >300cfu/100ml. The frequency is recommended to be monthly for all three pools for a period of a year to ascertain whether seasonal variation is present, with frequency after that to be dropped down to a frequency determined to be representative of a useful metric as part of the welfare programmes for the hippopotami. It would also be useful to undertake a single test of the same parameters every day between filling and just prior to emptying of the pools to demonstrate the speed of change of the quality of water with the presence of the hippopotami living in them for the indoor pools.

6. It is recommended that focal welfare assessments are carried out at least monthly during the peak seasons of the magpie-peck injury events.

END RECOMMENDATIONS

CONDITIONS

1. In order to comply with Sections 2.1, 2.2, 4.1 and 4.2 of the ISMZP (2016), the Zoo Licence Holder must ensure that additional usable height, and associated infrastructure for both staff and animals, is provided for the chimpanzees inside the 'Old Gorilla House' on 'Far Side' to allow them additional enrichment and fitness activity through the use of roof feeding and other enrichment. The Zoo Licence Holder must ensure this change has been completed within six months from the date on which this condition takes effect.

2. In order to comply with Sections 2.1, 2.2, 4.1, and 4.2 of the ISMZP (2016), the Zoo Licence Holder must ensure that additional usable height, and associated infrastructure for both staff and animals, is provided for the chimpanzee island on the 'African Savanna' to allow them three-dimensional access when outside. The Zoo Licence Holder must ensure this change has been completed within eighteen months from the date on which this condition takes effect.

3. In order to comply with Section 3.2 of the ISMZP (2016), the Zoo Licence Holder must ensure that the weighing scales in the chimpanzee house are fixed or that they are replaced with working scales robust enough for the species to facilitate weight monitoring and management. The Zoo Licence Holder must ensure this change has been completed within one month from the date on which this condition takes effect.

4. In order to comply with Section 4.1, 5.1, and 5.3 of the ISMZP (2016), the Zoo Licence Holder must ensure that a 'Dublin Zoo Mid- and Long-term Management Orangutan Plan'

or similar is produced for the Bornean orangutans in a similar format to the one produced for the chimpanzees. This must consider the future husbandry, reproductive, physical and behavioural health care management, and amalgamate all of the separate programmes and policies that already exist into a single master document. The Zoo Licence Holder must ensure this change has been completed within three months from the date on which this condition takes effect.

5. In order to comply with Section 3.2 of the ISMZP (2016), the Zoo Licence Holder must ensure that either fixed or mobile weighing scales are installed in the hippopotamus house to allow accurate measurement of weight as part of general weight management but also prior to any surgical procedures to allow accurate weighing for anaesthesia and other treatments as may be needed. The Zoo Licence Holder must ensure this change has been completed within one month from the date on which this condition takes effect. It is noted that whilst scales may be provided, the animals may not become accustomed to them in time prior to any surgeries planned for early 2025, if this is the case, any elective surgeries must not be delayed.

6. In order to comply with Sections 2.1, 2.4, 2.5, and 9.4 of the ISMZP (2016), the Zoo Licence Holder must ensure that a formal and regularly updated record must be maintained of magpie-peck injuries to the hippopotami. This must include: (i) a record of fresh peck injuries which are clearly differentiated from existing lesions or those being treated, (ii) the distribution of the lesions, noting the location of new or fresh lesions, (iii) a classification system to differentiate between open and closed type peck injuries, and any other categories as the veterinary team think fit, (iv) any other relevant details taken at the time of assessment e.g. treatments, diagnostic testing or water quality testing, (v) whether magpie-peck injuries were witnessed or not, and if they were whether they occurred indoors or outdoors, and (vi) documentation of any mitigation measures implemented and measurement or documentation of their effectiveness. These records must be assessed as part of focal welfare assessments, and the overall management programme must be annually reviewed as to its effectiveness and whether changes are required. The Zoo Licence Holder must ensure this change has been completed within one month from the date on which this condition takes effect.

END CONDITIONS

APPENDIX 04: DUBLIN ZOO ALLEGATION SUMMARIES 2022-2025

Case Allegation Assessment Score - The Development of a Standardised Method of Case Classification for Categorising Welfare Case Reviews

In response to complaints made at the Seanad Éireann with regard to animal welfare concerns at Dublin Zoo in July 2022, the then investigation team identified a need to clearly delineate beyond a simple 'yes' or 'no' assessment with regard to the allegations made at that time. The majority of the allegations were complex cases, with elements of truth and varying degrees of perceived interpretation of the facts of the case which varied, either due to the quality of the source, the quality of the information, or whether the whistleblower was present or was reflecting on documents or observations made by other members of staff. As such the investigation team assigned each case to a finding of unfounded or supported, with sub-categorisation to one of five categories which would demonstrate the justification behind the assigned decision.

ACTUAL EVENT OR NO EVIDENCE TO SUGGEST THE EVENT OR ANIMAL EXISTED

In the first instance, a case was assessed as to whether the allegation was made with regard to an actual animal or event. The case was then assigned to either **Category 1** (no such animal or event existed) or **Category 2** (the allegation referred to a real animal or event).

CASE ASSESSMENT SUMMARY

The second categorisation of an allegation fell into one of three categories:

- **Category 3** (there was robust evidence to demonstrate that narrative of the allegation did not support the factual evidence identified by the inspection team, or the individual making the allegation failed to provide any evidence to support their allegation or the allegation lacked any credibility),
- **Category 4** (the allegation was reflective of the events that occurred, however Dublin Zoo identified the issue at the time and took steps to ensure it did not occur again in the future), and
- **Category 5** (the allegation was reflective of the events that occurred and Dublin Zoo had not taken action to resolve the active or potential welfare event at the time and there is a current risk of it repeating in the future).

An allegation may have been accurate in part (e.g. the animal had existed), however following assessment of the narrative or welfare allegation the investigation team could consider an allegation as either supported or 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, or whether the perception of the witnesses were poorly reflective of the events as they transpired. Assignment to a category by the inspection team was made based on the evidence available, either that provided by the whistleblower, Dublin Zoo or contemporaneous sources independent of both the whistleblower and Dublin Zoo available from the time of the alleged event.

SUB-CATEGORISATION OF CATEGORY 3 TO DEMONSTRATE CREDIBILITY AND ROBUSTNESS OF EVIDENCE

Category 3 has since been re-evaluated and the decision made to highlight the evidence-base behind assigning a case to Category 3. These new sub-categories were implied in the original definition but have been formalised in this newprocess, they are:

- **Category 3(a)** identifying where there is robust and credible evidence to support that the alleged event did not occur as the narrative of the allegation suggested, with the evidence assessed demonstrating that the welfare provision met the needs of the animals concerned; or
- **Category 3(b)** where there is insufficient evidence to support the allegation but also a lack of evidence to suggest that it did not occur, such cases where a lack of evidence of poor welfare occurring was equally considered not to be evidence of good welfare having been provided, and the inspectors were unable to identify whether there was a failure of welfare provision or not. Such cases were not considered able to be taken further due to the lack of credible evidence either way. At the time of writing none of the Category 3 cases fall in sub-category 3(b), including those from 10-20 years previously.

The categories are outlined below:

CASE ALLEGATION ASSESSMENT SCORE (CAAS) CATEGORIES

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

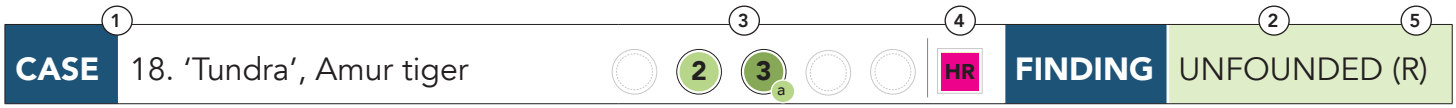
4 Evidence supports the historical allegation, Dublin Zoo have resolved

(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

CASE ALLEGATION ASSESSMENT SCORE SUMMARY



Case Allegation Assessment Score Summary: each summary card has the same layout: (1) a brief case summary to provide identifiers to allow identification of the case, (2) the final opinion of the investigation team as to whether the allegation was supported or unfounded, (3) the assignment of a Case Allegation Assessment Score to demonstrate the rationale behind whether an allegation was supported or unfounded, (4) an additional categorisation of HR where an allegation was primarily one of personal issues between staff or employer and not one of animal welfare, and (5) an indicator where further action has been taken, with 'R' identifying that a recommendation has been made for Dublin Zoo to consider and 'C' a condition has been made that Dublin Zoo must adhere to enforcement action taken by NPWS. In this summary document an additional case number has been included demonstrating the total number of allegations made or re-made, these do not typically appear in standard investigations.

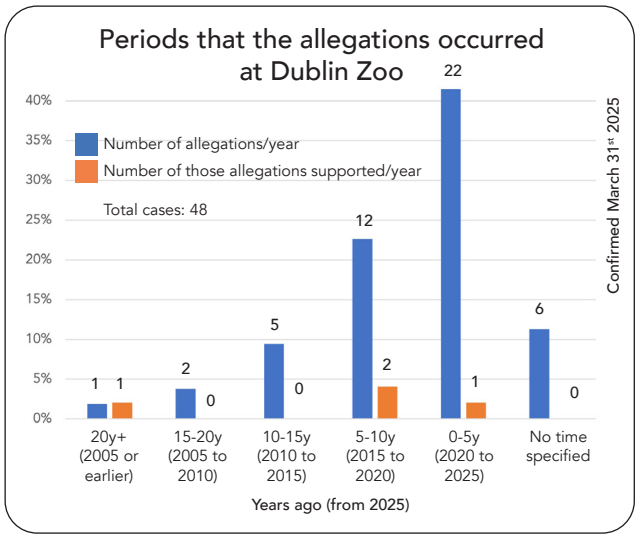
Each case has been assigned a summary that provides a snap-shot of the allegation, the decision made by the investigation team, the justification for that decision and whether additional recommendations have been made following assessment of the case. An example summary card can be seen above.

This process has since been adopted in response to ongoing welfare concerns since the original Dublin Zoo complaint in 2022 to ensure that there is a consistent and standard methodology to assign a case assessment and final decision for each separate case. In December 2023 an additional criteria was added: Human Resources (HR). This has been used to demonstrate that allegations referencing welfare concerns were considered by the inspection team to reflect differences of opinion or conflict between staff and management, the case itself not being a welfare issue in itself. In March 2025, Category 3 was sub-categorised as outlined above and this was retrospectively applied as part of a complete welfare case retrospective review of all of the allegations since 2022.

Dublin Zoo Welfare Allegations Overview for the period July 2022 to March 2025

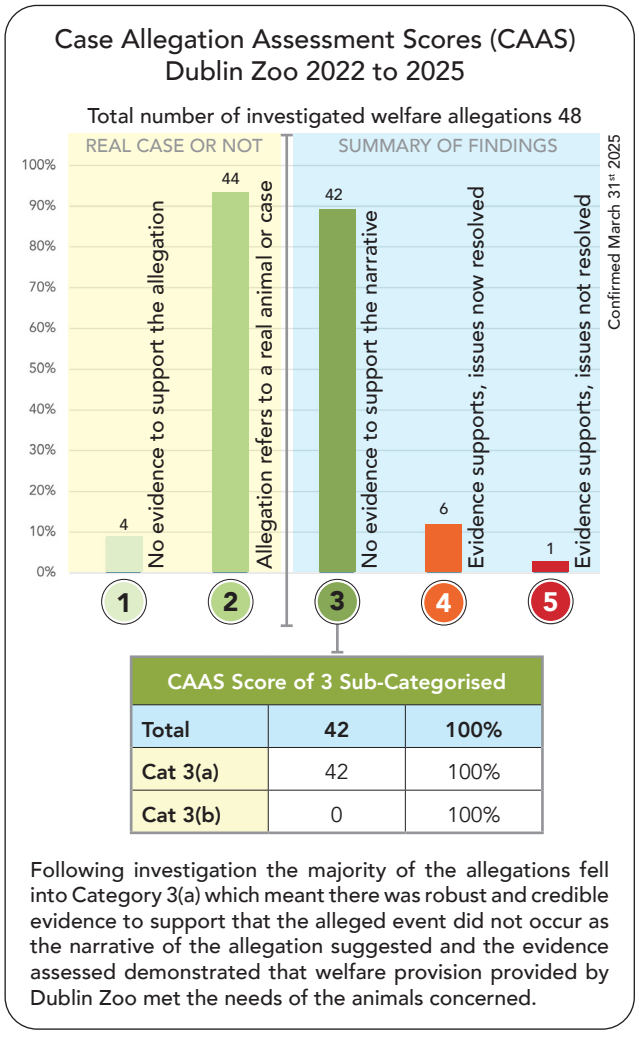
A total of 53 welfare allegations made against Dublin Zoo during the period July 2022 to December 2024. Of these 53 cases 49 were investigated between July 2022 and March 2025, the remaining four were simply cases that had previously been investigated and were re-alleged through a different route but the fresh allegations did not provide any new information not already considered. Of the 49 cases one was not considered a welfare allegation as it solely referred to the reduction in avian species within the zoo population, this pertaining to animal collection planning with no links to welfare allegations, simply a response to future proof the zoo against avian influenza concerns. The remaining 48 were considered as potential welfare cases.

The welfare allegations made covered a period of 20 years, with the earliest case reported to have occurred in June 2004 with the most recent alleged to be ongoing in 2025. Seven of the allegations had no specific time or event associated with them.



ASSESSMENT AS TO REAL EVENTS OR NOT

The 48 potential welfare cases were assessed as whether they pertained to real animals or not: (1) 8% (4 cases) having no evidence that the case or issue existed at all (e.g. allegation 15, 2022 referenced a scimitar horned oryx calf death and despite reviewing all of the husbandry records for the period January 1980 to August 2022 no such animal or case was found with no evidence provided by the complainant to demonstrate that it had existed); with (2) 92% (44 cases) evidencing real animals or events that existed (this being assigned independent of whether the allegation narrative was considered to be reflective of the case or not).



CAAS Score of 3 Sub-Categorised		
Total	**42**	**100%**
Cat 3(a)	42	100%
Cat 3(b)	0	100%

Following investigation the majority of the allegations fell into Category 3(a) which meant there was robust and credible evidence to support that the alleged event did not occur as the narrative of the allegation suggested and the evidence assessed demonstrated that welfare provision provided by Dublin Zoo met the needs of the animals concerned.

EVENTS CATEGORISED USING CAAS

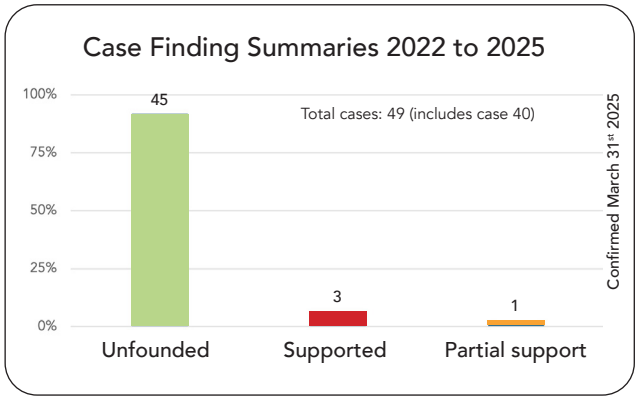
The Category 2 demonstrable cases were then assigned to one of three categories following assessment:

- (3) where there was no evidence to support the narrative or events as alleged in the complaint, or the evidence was overwhelming in opposition to the allegation (this being the case in the majority of the cases assigned to this category), 88% (42 cases);
- (4) there was evidence to support the allegation made, however the incident had been recognised at the time and appropriate actions taken, 13% (6 cases); and
- (5) there was evidence to support the allegation made, however Dublin Zoo had taken no action, 2% (1 case).

The last category, Category (5) was assigned to only one case: that of the location of the red panda enclosure adjacent to the snow leopard enclosure, however the inspection team were satisfied that this was not unusual practice in zoos and there was no evidence of this being a welfare issue for the red pandas, simply a non-compliance with recommendations from the husbandry guidelines.

Category (3) was retrospectively sub-categorised in response to statements made that the allegations had been dismissed due to lack of credible evidence to support the allegation(s). This was already present in the original definition for Category 3 and was simply formalised and each case explicitly audited against the information assessed in the investigation. Category 3(a), which meant that there was robust and credible evidence to support that the alleged event did not occur as the narrative of the allegation suggested and the evidence assessed demonstrated that welfare provision met

the needs of the animals concerned, was assigned in all of the 42 case assessments. This demonstrates that no Category 3 cases were dismissed due to lack of evidence in the cases but solely on the merit of the investigations findings refuting the allegation as presented.



The individual investigation reports contain the full details of the investigations undertaken and the evidence utilised to assess each individual case. The findings for each case were assigned to one of two categories: unfounded (where the allegation was found to be unsupported or the evidence demonstrated that the allegation was factually incorrect e.g. allegation 22, 2022 which advised that a female African wild dog was injured and did not receive veterinary attention for four days, where in fact the animal was male and underwent veterinary assessment and treatment within less than 24 hours), or supported (where the allegation was found to be reflective of the events that occurred). **In summary, of the 49 cases 92% (45) were unfounded and 8% (4) supported or partially supported, with only one of these not resolved by Dublin Zoo at the time of the event (see Case 19, the red panda comments above). A sub-set of the cases were considered as human resources issue and not a welfare issue, of the 24 allegations assessed with this new criteria 46% (11) fell into this category.**

Dublin Zoo Welfare Allegations Summary, July 2022

01	CASE	01.'Kildare', Grant's zebra	FINDING	UNFOUNDED (R)
02	CASE	02.'Maeve', Baringo giraffe	FINDING	UNFOUNDED (R)
03	CASE	03.'Harry', lowland gorilla	FINDING	UNFOUNDED (R)
04	CASE	04. Escaped SC macaques	FINDING	UNFOUNDED (C)
05	CASE	05. 'Eline', mangabey escape	FINDING	UNFOUNDED
06	CASE	06. 'AL6B03' cockatoo escape	FINDING	UNFOUNDED
07	CASE	07. General welfare issues	FINDING	UNFOUNDED (R)
08	CASE	08.'Bossou', chimpanzee	FINDING	UNFOUNDED (C)
09	CASE	09.'Niamh', Amur tiger	FINDING	UNFOUNDED (R)
10	CASE	10. Lack of time for enrichment	FINDING	UNFOUNDED (R)
11	CASE	11.'Shea', Humboldt penguin	FINDING	UNFOUNDED (R)
12	CASE	12. Fish quality, 'Seanna'	FINDING	SUPPORTED (C)
13	CASE	13. Refuse to euthanase animals	FINDING	UNFOUNDED
14	CASE	14.'Niko', California sea lion	FINDING	SUPPORTED (C)

15	CASE	15. Scimitar-horned oryx death	1					FINDING	UNFOUNDED
16	CASE	16. Orangutan & siamang deaths		2	3a			FINDING	UNFOUNDED (R)
17	CASE	17. Ozone leakage		2	3a			FINDING	UNFOUNDED
18	CASE	18. 'Tundra', Amur tiger		2	3a			FINDING	UNFOUNDED (R)
19	CASE	19. Red panda facility		2			5	FINDING	SUPPORTED (R)
20	CASE	20. Inbreeding common		2	3a			FINDING	UNFOUNDED
21	CASE	21. Goeldi's monkeys mortalities		2	3a			FINDING	UNFOUNDED
22	CASE	22.'Tafara', African wild dog		2	3a			FINDING	UNFOUNDED
23	CASE	23.'Trouble', ostrich pelvis		2	3a			FINDING	UNFOUNDED

Dublin Zoo Welfare Allegations Summary, August 2023

24	CASE	01. Elephant no fresh water		2	3a			FINDING	UNFOUNDED
25	CASE	02. 'Tundra', Amur tiger		2	3a			FINDING	UNFOUNDED

Dublin Zoo Welfare Allegations Summary, December 2023

HR introduced where the primary complaint was considered an HR issue and not a welfare one. Where a case is marked HR it was considered to be an HR or communication issue e.g. perceived conflict between the complainant and other staff involved in the specific allegation.

26	CASE	01. 'Kilarney', Grant's zebra		2	3a			FINDING	UNFOUNDED
27	CASE	02. 'Danny', chimpanzee		2	3a			FINDING	UNFOUNDED
28	CASE	03. 'Kipper', California sea lion*		2	3a	4		FINDING	PARTIAL SUPPORT (R)
29	CASE	04. 'Hailey', Baringo giraffe		2	3a			FINDING	UNFOUNDED

**Footnote:* *Case 03 (new annotation Case 28) is marked as a Category (4) in addition to Category (2) and Category (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 in 2004 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 'Partially Supported' as per the allegation made, but does not require action at the case was assessed (2023) 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 original report for details.*

30	CASE	05. 'Kamba', okapi		2	3a			HR	FINDING	UNFOUNDED
31	CASE	06. 'No name', Baringo giraffe		2	3a			HR	FINDING	UNFOUNDED (R)
32	CASE	07. 'Blake', Grant's zebra		2	3a				FINDING	UNFOUNDED
33	CASE	08. 'Roisin', Kerry cow calf		2	3a			HR	FINDING	UNFOUNDED
34	CASE	09. 'No name', bongo calf		2	3a			HR	FINDING	UNFOUNDED
35	CASE	10. 'Trouble', ostrich pelvis	Previously reviewed						FINDING	UNFOUNDED
36	CASE	11. 'Neema', Baringo giraffe		2	3a			HR	FINDING	UNFOUNDED
37	CASE	12. 'Isiro', okapi		2	3a				FINDING	UNFOUNDED
38	CASE	13. Sloth house temperatures	1		3a			HR	FINDING	UNFOUNDED (C)
39	CASE	14a.Citron-crested cockatoos		2	3a			HR	FINDING	UNFOUNDED (R)
40	CASE	14b. Reduction in bird species	No specific welfare case					HR	FINDING	UNFOUNDED
41	CASE	15. Goeldi's monkeys mortalities	Previously reviewed						FINDING	UNFOUNDED
42	CASE	16. 'Marmaduke', S. Amer. tapir		2	3a			HR	FINDING	UNFOUNDED

Dublin Zoo Welfare Allegations Summary, June 2024

43	CASE	01. 'Striker', euthanasia concerns		2	3a			HR	FINDING	UNFOUNDED

Dublin Zoo Welfare Allegations Summary, August 2024

A heavily redacted protected disclosure was received on the 6th of August 2024 by the NPWS Zoo Licensing Department. This had a single sentence pertaining to possible welfare allegations. The statement was generic and non-specific and was assumed to relate to the cases listed below. A response was made asking for specific case details and no further response was made to the Department. The case was not investigated further due to these being assumed to be existing cases.

44	CASE	01.'Trouble', ostrich pelvis	1	Previously reviewed					FINDING	UNFOUNDED (R)
45	CASE	02. 'Tundra', Amur tiger		Previously reviewed					FINDING	UNFOUNDED (R)
46	CASE	03. Elephant no fresh water		Previously reviewed					FINDING	UNFOUNDED (R)
47	CASE	05. Fish quality, 'Seanna'		Previously reviewed					FINDING	SUPPORTED (C)

Dublin Zoo Welfare Allegations Summary, March 2025

48	CASE	01. 'Old Gorilla House' chimps	1		3a				FINDING	UNFOUNDED (C)
49	CASE	02.'Mujur', orangutan		2	3a			HR	FINDING	UNFOUNDED (C)
50	CASE	03. Asian elephant transports		2	3a			HR	FINDING	UNFOUNDED
51	CASE	04.'Ernie', common hippo		2	3a				FINDING	UNFOUNDED
52	CASE	05.''Imani', common hippo		2	3a				FINDING	UNFOUNDED
53	CASE	06.'Heidi', common hippo		2	3a	4			FINDING	UNFOUNDED (C)

END ALLEGATIONS (CURRENT AS OF 31st MARCH 2025)

NOTE: Only Case 19 (2022 Investigation) scored a Category 5 for the red pandas as discussed. Calls have been made for an independent welfare review to be carried out of Dublin Zoo and this was undertaken in 2024 by the Global Humane Society with a detailed report entitled 'Dublin Zoo's Corrective Action Plan' which the inspection team had sight of during the 2025 investigation (but do not retain a copy). In this document recommendations and actions required to meet the Humane Society's accreditation standards are outlined. The red panda facility was considered "appropriate for the species. It is dynamic and enriching", no concerns were noted with regard to the proximity of other carnivores, which was the basis of Case 19's welfare allegation. The viewpoint of the independent Global Humane Society inspection team in 2024 was shared by the independent National Parks and Wildlife Service inspection team in 2022, that whilst the red panda situation was not consistent with the husbandry guidelines, the proximity to the snow leopards demonstrated no evidence of their being welfare concerns for the red pandas. This position continues to remain the same three years after the original 2022 inspection, demonstrating that this individual case is not considered a significant welfare case as per the grounds of the original allegation.