HOW TO DEVELOP YOUR ANIMAL WELFARE ASSESSMENT PROGRAMME

EAZA

EUROPEAN ASSOCIATION OF ZOOS AND AQUARIA

EAZA
ANIMAL WELFARE WORKING GROUP

How to develop your Animal Welfare Assessment Programme

Introduction

In recent years, there has been notable progress in animal welfare within EAZA, as evidenced by its increasing importance in EAZA's Standards and Accreditation procedures, which includes that of Members having an **Animal Welfare Policy which includes commitment to having an Animal Welfare Assessment Programme**, to further enhance animal welfare practices. Getting started may seem overwhelming and confusing. Therefore, to support Members the EAZA Executive Office and the EAZA Animal Welfare Working Group have created this guidance document. This step-by-step guide aims to help Members establish and evolve their Animal Welfare Assessment Programme by providing resources to streamline the development process.

The document will not offer in-depth details on animal welfare, specific assessments, or predefined protocols or templates. These elements should be determined and crafted by the institutions to ensure relevance to their specific requirements and the welfare of the animals. Instead, the guide will assist Members in navigating decision-making procedures, considerations, and accessing resources to aid in this process. This will enable them to tailor their Animal Welfare Assessment Programme to effectively address the requirements of their institution and animals.

Remember, this is a guideline, and you may choose to explore alternative approaches to suit your organisation, and set goals which are acheiveable for you. As long as your Animal Welfare Assessment Programme is effective, we encourage innovative ideas (feel free to share them with us to pass on to the EAZA Community!).

What is an Animal Welfare Assessment Programme?	**Why** do we need one?	**How** do I create my Animal Welfare Assessment Programme?	**Where** do I start?

What is an Animal Welfare Assessment Programme?

An Animal Welfare Assessment Programme encompasses various actions and procedures, focusing on conducting animal welfare assessments as its central process. This involves assessments for different animals (or groups of animals) and includes tasks such as data collection and analysis, setting priorities, troubleshooting, forming working groups, and developing assessment templates tailored to specific individuals, species or situations.

To facilitate this process, we have provided a set of questions and discussions for you to address within your organisation. These inquiries will ensure that the programme aligns with your organisation's needs and leads to tangible advancements in animal welfare.

> An Animal Welfare Assessment Programme is a series of processes, repeated across a range of animals, with the overall aim of promoting positive animal welfare, with animal welfare assessment at its core.

Hence, an Animal Welfare Assessment Programme goes beyond just conducting assessments. When establishing your programme, it is essential to have multiple processes in place to ensure that the assessment is suitable, results are accurately understood, and priorities translate into actions for welfare advancement. This is an ongoing process as every zoological institution varies in how extensively they embrace welfare improvement and stay current with the latest welfare science. A crucial aspect of a modern zoological institution is the ability to reflect on practices, to question and evaluate the impact of those practices on animal welfare, and continuously strive for better animal welfare.

This is a simple example of how you may choose to organise and schedule the different elements of your Animal Welfare Assessment Programme. Each row can be considered a 'project' and the programme is a collection of the projects, each with their own series of actions and outcomes; contributing to the common goal of welfare progression within your institution.

Ultimately, just choose a system that works for your institution and ensures that all the animals at the zoo are part of the programme.

Animal Welfare Assessment Programme

Assessment Project number	Animal/ Species	Assessment template used	Assessment done	Results analysed	Action proposal form submitted	Actions implemented	Follow-up assessment done
1	Lion	General	Jan 2024 ✓	Feb 2024 ✓	March 2024 ✓	March 2024 ✓	May 2024 ✓
2	Pupfishes	General – aquatics add on	Jan 2024 ✓	Feb 2024 ✓	March 2024 ✓	April 2024 ✓	
3	Snowy Owl	General	Feb 2024 ✓	Feb 2024 ✓	April 2024 ✓		
4	Mountain chicken frogs	General – aquatics add on	Feb 2024 ✓	March 2024 ✓			
5	Elephant	Elephant specific assessment	Feb 2024 ✓	March 2024 ✓			
6	Desertas wolf spiders	General	Feb 2024 ✓	March 2024 ✓	April 2024 ✓	April 2024 ✓	
7	Henkel's lead-tailed geckos	General	March 2024 ✓	April 2024 ✓	May 2024 ✓		
8	Siamang	General	April 2024 ✓	May 2024 ✓	✓		
9	Toothcarps	General – aquatics add on					
10	White-winged duck	General					
11	Great hornbill						
12	Seychelles giant millipede						

An integral part of the programme is the **Animal Welfare Assessment**. This involves formally evaluating the welfare of the animals under your care through systematic data collection and analysis to gauge their welfare. To comprehensively assess the animals' welfare, it is essential to gather data from various aspects like environmental conditions (e.g., light levels, temperature), nutrition, physical health, and behaviour. It is also very important to consider the animal's welfare outside of working hours, or whilst the teams are not present, for example, nocturnal species. This holistic approach aids in gaining a

complete understanding of the animals' welfare. The assessment process is structured around a set of measures that shape your animal welfare assessment template or form.

ANIMAL WELFARE....

....ASSESSMENT

OFTEN MEANS A scientifically validated series of measures using output measures as animal welfare indicators, to give a comprehensive understanding of animal welfare.

....AUDIT

OFTEN MEANS A series of measures which can be conducted rapidly with the aim of providing an overview of animal welfare. May be used to indicate areas for more detailed assessments to be conducted.

The terms "Animal Welfare Assessment" and "Animal Welfare Audit" are commonly used interchangeably. In literature and discussions, both terms might be used. An assessment *typically* involves a higher level of scientific validation with a large number of validated animal welfare indicators. It is scientifically robust and reflective of the animal's welfare. On the other hand, an audit *typically* offers a quicker, more generalized insight into animal welfare, which is less scientifically rigorous than an assessment. Despite this, an audit is a valuable tool to provide an overview of the welfare of your animals. The results can help identify and prioritise animals in need of more attention, allowing for more detailed assessments to gain a more precise understanding of the animals' welfare.

However, please note, whilst the use of the two terms is often interchangeable, 'assessment' is more commonly and broadly used to describe any set of measures aimed at enhancing our comprehension of an animal's welfare - a 'catch all' term. Regardless of the term you opt for, what matters is understanding the scientific validity and limitations of your assessment.

EAZA employs the term 'assessment' to encompass various welfare evaluation types, ranging from rapid, broad, overview assessments to determine priorities, to in-depth, scientifically rigorous, species-specific assessments.

What is an Animal Welfare Policy?

An Animal Welfare Policy consists of **fundamental principles and declarations that direct the institution's behaviour and influence decision-making, procedures, and practices related to animal welfare**. The policy should detail the institution's dedication to animal welfare, aligning with EAZA Standards. It is important for the policy to acknowledge the significance of upholding welfare standards across all species and throughout various animal management activities within the institution, promoting a comprehensive approach to animal welfare.
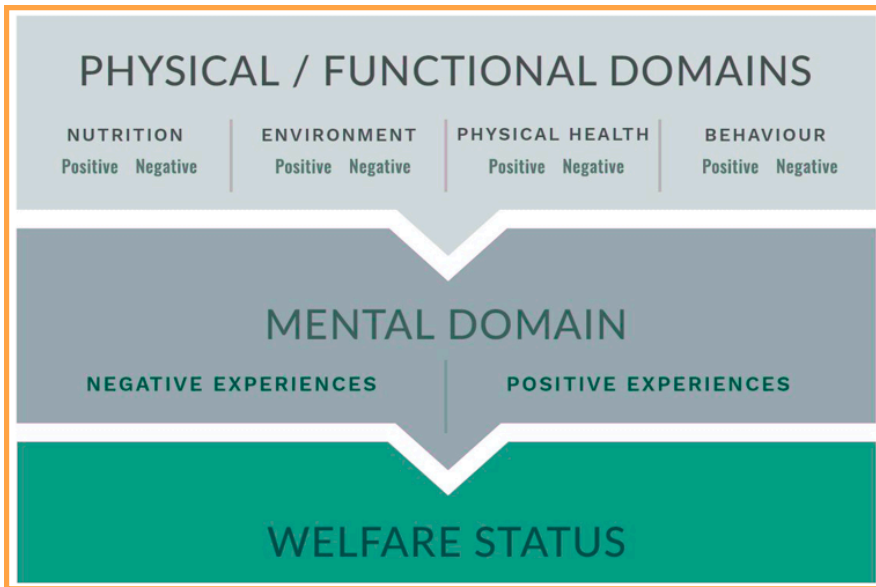
A comprehensive approach to animal welfare involves considering all aspects that influence welfare, encompassing physical, physiological, and psychological factors. The widely adopted '5 Domains' by Mellor et al (updated 2020), has been developed to offer a structured framework for this purpose. The 5 Domains model includes four 'Physical Domains' - Environmental, Nutritional, Behavioural, and Physical - that contribute to the singular 'Mental Domain' reflecting the animal's welfare state.

Image modified by WAZA from Mellor and Beausoleil 2015

The Mental Domain

The Mental Domain (also known as The 5th Domain) is the most important of the 5 Domains. It is the experience of the animal; what they are likely feeling as a result of the conditions within the four Physical/Domains, and how they are coping.

**The Mental Domain represents the welfare status of the animal.**

However, this presents a huge challenge! We can never truely know how an animal is feeling and what their experience is. Feelings and 'affective states' are a subjective experience which we can only make assumptions on based on the information that we have. This information is gathered as part of the four Physical Domains and then we can make an informed judgement on the animal's welfare status.

The more accurate output-based information that we have, combined with species knowledge, the more accurate our judgement is likely to be.

Research scientists and animal management practitioners are increasingly discovering more ways that we can gather information on the animal's feelings. For example, use of thermography to measure changes in peripheral blood flow associated with different affective states, and research into cognitive bias testing as a reflection of whether an animal has a opptimistic or pesimistic outlook.

However, we must be realistic about the extent that zoo teams can conduct welfare assessments which 'measure' the Mental Domain for all the animals.

This does not mean that we cannot make some very informed assumptions about the Mental Domain with information that we can gather. Scientifically validated animals welfare indicators give us the most accurate information for this.
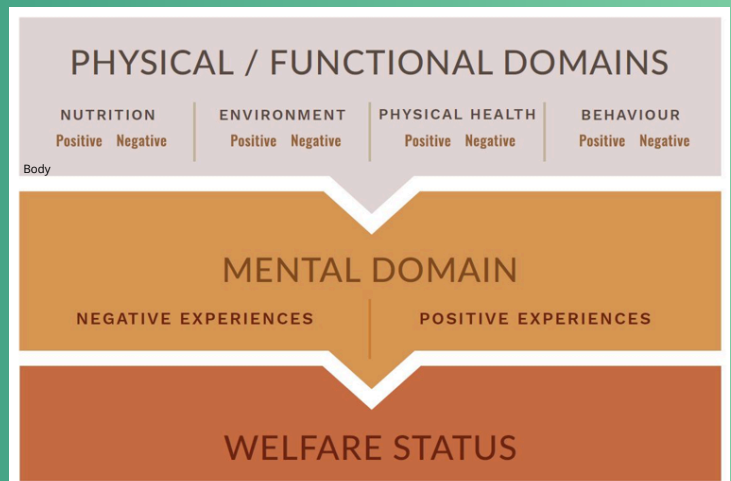
We can identify behaviours, measure physiological parameters and look at physical health, which will indicate the animal's experience. For example, we know from our own experience that arthritic joints will be painful, therefore is fair to assume that this will be painful for other animals too. We know that social isolation of a social species is likely to cause loneliness and feelings of insecurity, an animal moving playing is likely to be joyful and an animal expressing species appropriate feeding behaviours is likely to be experiencing feelings of satisfaction and contentment.

Combining our own experience of subjective feelings, with our knowledge of species-specific behaviours and parameters is called **Critical Anthrpomorphism.** It is important to avoid **Classical Anthropomorphism**, which is where we attribute human characteristics to non-human animals or objects. For example, a 'smiling' dolphin, or assuming that non-human animals are 'lonely' when they are a solitary species.

Using Critical Anthropomorphism with the data we collect and a good understanding of the animals natural history, can provide us with a good understanding of the Mental Domain and therefore the animal's welfare status.

To explore detailed examples within each domain for welfare assessment and understand their impact on the Mental domain, refer to the provided link for the paper. The 5 Domains model is a valuable tool for ensuring a holistic assessment, covering all aspects of an animal's welfare, both positive and negative. More information on the 5 Domains model, can be found on the EAZA website's Animal Welfare Webinars page, including a webinar by co-author of the 5 Domains model, Associate Professor Ngaio Beausoleil.

You may choose to create an **Animal Welfare Vision** and **Mission Statement** to support and guide your policy. The following is an example, kindly shared by Jerusalem Zoo and Aquarium:

Vision

The Jerusalem Zoo and Aquarium commits to providing the best quality of life for the animals in our care, by prioritising the highest quality environment, health care, nutrition, and behavioural husbandry for all animals across all taxa. We want all our staff and visitors to join us in being partners in providing best welfare.

Mission

We will commit to a positive welfare approach by:

- Engaging and empowering our staff to be leaders who are proactive in improving and managing the welfare of the animals in the zoo.
- Conducting evidence-based welfare assessments, and using the data to make decisions core to improving animal welfare.
- Initiating and conducting research on animal welfare across all taxa, working together with the zoo community to share our learnings.
- Provide systems of continuous monitoring and evaluation to make sure we are constantly improving.
- Building a strong welfare focus so that it becomes a key factor in all decision-making processes and integrating this into future developments.
- Providing training and professional opportunities for staff development in animal welfare.
- Ensuring that the zoo serves as a forum for animal welfare, care, and well-being discussions.

Here is an example outline for your Animal Welfare Policy, which also highlights how your Animal Welfare Assessment Programme can be incorporated into the policy:

SECTION 1

General statement of your institutions committment to animal welfare. For example:

Recognition of the importance of welfare for all taxa within the zoo, including those lesser recognised taxa such as the invertebrates;

Adoption of an animal welfare framework or model that supports a holistic approach to welfare (EAZA reccommends the '5 Domains');

Highlighting how animal welfare is included within other institutional policies and values.

Recognition of committment to follow EAZA Standards and Policies to promote positive wefare.

SECTION 2

Animal welfare actions that your institution commits to, in support of Section 1. For example, this may include the following subheadings and statements:

PROFESSIONAL KNOWLEDGE - Our staff engage with animal welfare training as part of continued professional development (CPD) and our organisation supports them in doing so. We play an active role in animal welfare research and strive to incorporate the most up-to-date welfare science in our processes. Staff are encouraged and supported to attend relavant events and courses.

ANIMAL MANAGEMENT - Animal management practices are regularly reviewed to ensure that they are up-to-date with the latest animal welfare science. Staff are committed to updating their species knowledge and implement species-approriate positive welfare opportunties for the animals. The animals in our care receive regular veterinary checks and care to safeguard their welfare. Animal diets follow the latest nutritional recommendations. EAZA Best Practice Guidelines (where available) and other documentation such as EAZA Accommodation and Care Standards are followed.

ANIMAL WELFARE ASSESSMENT PROGRAMME - Our Animal Welfare Assessment Programme will be completed across the full institution on a regular basis, and the programme is reviewed on an annual bases to ensure that it stays up-to-date with the latest science.

Additional components to consider for your Animal Welfare Policy include educating visitors on welfare, euthanasia procedures, transportation protocols, animal demonstrations, and visitor-animal interactions. These can be reinforced by referencing EAZA documents. You can explore examples of animal welfare policies on the EAZA animal welfare page, which includes the BIAZA Animal Welfare Toolkit document and offers further guidance on crafting your animal welfare policy and conducting welfare assessments.

Why do we need an Animal Welfare Assessment Programme?

In recent years, there has been a significant growth in the development and utilisation of animal welfare assessment programmes. These programmes are now considered essential for enhancing animal welfare in zoos and aquariums. They can:

- Be implemented in various situations to assess the welfare of animals under our care, identifying both challenges and effective practices,
- Serve as a valuable resource to identify areas for improvement and prioritising actions,
- Create a strategic approach for enhancing welfare that can be used by all team members,
- Help to prioritise and increase transparency around funding for welfare actions,

- Support moving away from subjective impressions on the welfare of the animals, and allows for a more objective approach to be implemented through gathering supporting evidence,
- Be considered as an opportunity for structured welfare progression.

The newly endorsed **EAZA Welfare, Accommodation and Management Standards** require EAZA Members to have an Animal Welfare Assessments Programme in place, as part of their Animal Welfare Policy:

1. Members must have an institutional welfare policy based on the Five Domains Model that includes:
1. A programme for carrying out animal welfare assessments;
2. A system in place that is able to act on the outcomes of welfare assessments to enact positive change where needed.

2. Guidance for animal welfare assessments
1. Animal welfare assessments should focus on using output based measures;
2. Animal welfare assessments should be carried out on every individual or group at least one time per year, unless special needs (end-of-life issues, changes in social group, health concerns including pregnancy or illness, major changes to enclosure, etc) indicate the need for additional evaluation;
3. If it is not possible to individually identify individuals, group welfare assessments can be carried out;
4. Where available, use a species/taxon specific assessments against species/taxon specific metrics of welfare. When not available, use an output based assessment that best fits the situation and species;
5. Assessments should be maintained for longitudinal evaluation preferably in a digital version to allow for data extraction and transfer;
6. Welfare assessments must be available for viewing by an EAZA Accreditation Team or by the EEO for the reasons of accreditation.

EAZA undestands the challenges of establishing your animal welfare assessment programme. Therefore we hope that this guide will support and advise you in development of your programme.

How & Where do I start?

Plan

Decide on your objectives, what you want to achieve and how you are going **to** do it

☐ **What are the primary objectives of the programme?**
- ☐ Is it to learn more about the welfare of a particular species in your care?
- ☐ Is it to understand where priority welfare actions need to be taken across the zoo?
- ☐ Is it to understand if welfare is being improved for a particular animal/species after previous actions have been taken?
- ☐ Is it to understand the welfare of an animal(s) in a specific situation or life stage, for example, during quarantine, geriatric animals, pregnancy, enclosure changes?
- ☐ Other?
- ☐ We're not sure!

As your programme expands, it will likely encompass various aspects that can all contribute to its development. To start, it can be beneficial to concentrate on one or two objectives to refine the process.

Once you have successfully achieved this, you can then broaden the objectives to enhance your Animal Welfare Programme. Depending on your programme's goals, you might consider selecting a different welfare assessment template for data collection or establishing a realistic timeline. Therefore, it is crucial to define your objectives from the beginning. For a comprehensive overview, refer to the resource "Assessment of Animal Welfare in Zoos" by Dr. Heather J. Bacon.

Photo (c) Irene Bayer

☐ Who are the stakeholders?

- ☐ Who needs to be involved and who needs to be informed?
- ☐ Who is going to be conducting the assessments?
- ☐ Who is going to be analysing the data?
- ☐ Who is going to coordinate and make decisions?
- ☐ Which animals are involved or impacted?

By identifying all stakeholders, defining their level of engagement, and outlining roles and responsibilities, clarity is established regarding task accountability. Early engagement with teams through information sharing, discussions, and active participation proves to be highly beneficial. This approach helps address concerns about evaluations being seen as personal criticisms and assures teams that it is an opportunity for growth and welfare enhancement. It is important to emphasise to all those involved that the care that they provide an animal, and the animal's welfare are different things, and therefore welfare assessments are not a critique of a persons effectiveness in their role or the care that they provide. The assessment process acts as a formal means to identify potential changes, including evaluating previously suggested ideas by the team and assessing their effectiveness. An animal welfare assessment programme creates a platform for team members to share their species knowledge constructively. Starting discussions early with relevant parties, seeking team input, and testing assessment tools can foster a sense of team ownership and show appreciation for their expertise.

Setting up an Animal Welfare Committee or Working Group is a beneficial step to oversee and enhance the program. It is crucial to have a diverse range of expertise and professions involved, including zoo keepers, veterinarians, vet nurses, and biologists. This team will manage assessments, determine priorities, and potentially organise problem-solving sessions or proposals for management changes. They may also analyse results, but tasks can be delegated for efficiency.

Ensuring engagement of the zoo team in the process is a key element to success.

When planning assessments, consider who will be responsible for conducting them, analysing data, prioritising tasks, and creating action plans. These individuals could be part of the working group or other team members. The choice of assessors will depend on the type of assessment needed.

- For specific animal assessments before enclosure changes, zookeepers, veterinarians, biologists, and research coordinators may be involved.
- In a comprehensive zoo welfare assessment, representatives from each keeper team, the veterinary team, biologists, and welfare coordinators might participate.
- Due to busy schedules, it is recommended to have a diverse team per species for assessments, with three to five members per animal to provide varied expertise without overwhelming data collection.

Conducting pilot tests and feedback sessions with teams on assessment forms helps tailor them to meet specific requirements. Combining preferred elements from different forms can create the most suitable assessment form for the zoo, fostering team engagement and ownership. To ensure sustainability, it is crucial to involve the zoo team in the process, welcome their feedback, and incorporate it into the assessment procedures.

☐ What are the timeframes?
   ☐ When is the assessment going to be completed?
   ☐ How are you going to make time for those involved to complete their responsibilities associated with the programme?

The timeframe for assessments depends on the assessment type and its purpose. For instance:

- A welfare assessment for animals near a zoo event might require daily evaluation before, during, and after the event.
- If it is a zoo-wide assessment, it could follow a rotational system, where each quarter is assessed over a three-month period, completing the full zoo in a year.
- Assessing animal welfare during and after an enclosure change, or other challenging situations such as transportation or during times of high visitor numbers, might necessitate daily or weekly evaluations.

It is crucial to discuss time expectations with involved parties to ensure their availability. In the zoo profession, spare time is rare, so accounting for time is vital to sustain the programme and encourage participation. Assessments can be integrated into keepers' routine animal observations, speeding up the process as the team becomes more familiar with it.

☐ What assessment are you going to use?
   ☐ What is the objective of your assessment?
   ☐ What is the experience, welfare science and taxa knowledge of those involved?
   ☐ How can we ensure that knowledge and experience necessary is within our capacity to remain a positive process?

The big question! "One size doesn't fit all" in welfare assessments, as there is a wide array of assessment templates available in literature, zoos, and aquariums – ranging from paper forms to software programs, each serving different purposes. It might seem overwhelming to determine where to begin, but remember, there is no flawless animal welfare assessment; they are typically evolving documents reflecting our evolving understanding of animal welfare. The EAZA Academy offers a free Introduction to Animal Welfare Assessments e-learning course for Members and those in the Candidate for Membership Programme. This course provides a solid foundation in animal welfare assessment principles.

Photo (c) Marina Salas

Various assessments are suitable for different contexts, purposes, and the experience levels of those conducting them. While a scientific animal welfare assessment undergoes rigorous testing to ensure its representation of an animal's welfare, includes validated welfare indicators, and undergoes multiple rounds of pilot testing for reliability, these assessments may not be available for most species. Hence, the term 'welfare assessment' is commonly used to refer to a variety of tools used to gather data and help us understand an animal's welfare. These tools vary in complexity, but when analysed with an understanding of welfare science and the species, most assessments can guide welfare improvement effectively.
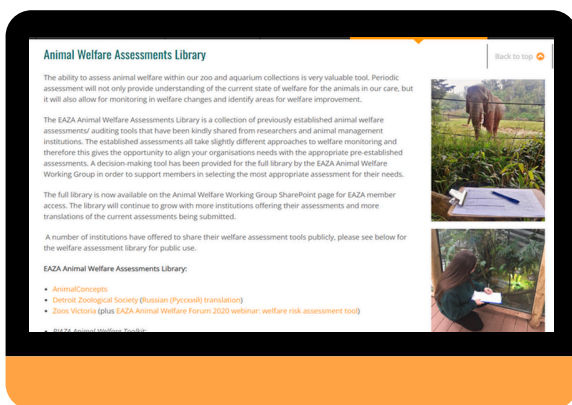
EAZA has developed the EAZA Animal Welfare Assessments Library, accessible on our website. It offers a variety of assessments sourced from published literature or generously shared among our community members. These assessments, including one assessment which is available in 18 different languages, are available for download and can be adapted and utilised in your own institutions. They cover species-specific welfare assessments and broader assessments suitable for a wide range of taxa. The EAZA Animal Welfare Working Group will continue to add to the library, so please do keep an eye on the webpage for updates!

Some assessments may be more in-depth than others, varying in the number and type of measures included. Output measures, also known as animal-based measures, are likely to offer a more precise evaluation of the animal's welfare status compared to input measures, also known as resource-based measures. However, collecting data on output measures can be more time-consuming. Input measures involve our actions, the resources provided, and the opportunities and environments available to the animal. On the other hand, output measures directly pertain to the animal, such as its behaviour and interactions with resources. While observing animals for output measures may require more time, it

enables a more accurate assessment of the animal's welfare by capturing data that reflects the animal's perspective and experience, rather than our own.

Input Measure	Output Measure
Does the animal have access to an appropriate social group?	Does the animal engage in appropriate social interactions?
Is the diet provided appropriately nutritionally balanced?	Does the animal consume an appropriately nutritionally balanced diet?
Is the animal assessed daily for any injuries or signs of illness?	Does the animal have any injuries or signs of illness?
Are arboreal areas available for the animal to rest?	Does the animal use arboreal areas for resting?

However, input measures can be beneficial, provided their limitations are acknowledged. Input measures offer insight into the available opportunities for the animal. Identifying missing opportunities enables adjustments in the animal's environment or management practices. Subsequent assessment can gauge the positive outcomes. Consider what opportunities the animal has (input) and how it utilises them (output). The Zoo Animal Welfare Education Centre (ZAWEC) has created informative fact sheets, including those on output indicators.

Output measures - are measures directly related to the animal.

Input measures - are measures relating to opportunties/environment provided.

In summary:

Does the assessment tell us about the welfare of the animal(s)?	Is it practically applicable and understood by the teams?	Can we use the information to improve welfare?

How is the community making this happen?

In 2022 the Italian Association of Zoos and Aquaria (UIZA - Unione Italiana Zoo e Acquari) developed a questionnaire-based welfare assessment adapted from Wild Planet Trust Welfare Audit Report, also a modified version of Detroit Zoological Society's Audit Template. The questionnaire-based welfare assessment consists of 28 items belonging to four different areas (health, environment, behaviour, and stress) to obtain information on the welfare of individual animals/groups housed at Italian zoological institutions.

In December 2022 the questionnaire with the glossary was distributed to the UIZA zoos and aquaria, and over several meetings and drafts we gathered feedback to make adjustments.

In February 2023 we delivered the first webinar to UIZA Members to illustrate the final questionnaire, glossary and the method. Then in 2023, over a 4-month period, UIZA zoos and aquaria ran the first trial to provide feedback of the practical application of the assessment. 10 out of 18 UIZA members tested the questionnaire and the method. Each institution needed to allocate resources, staff and time! In July 2023, a virtual meeting was organised to gather feedback on the method and to solve the remaining doubts.

An annual plan for welfare assessment has been suggested following the need to assess animal welfare on a continual basis.

STEPS:

- Selected the auditing method through the EAZA Animal Welfare Library,
- Translated the questionnaire, the report and the guidelines of the Wild Planet Trust
- Determined question content and wording the question by working in subgroups
- Sequenced the questions
- Checked questionnaire length and pre-testing the questionnaire
- Developed the final questionnaire
- Created a glossary

Caterina Spiezio
Parco Natura Viva, Italy
Member of the EAZA Animal Welfare Working Group

What are you going to do with the results?

- How are you going to analyse the data from the forms?
- How are you going to prioritise actions?
- How are you going to use the results?

After completing your assessments, it is crucial to understand the information and determine how to utilise the results in your programme. During the planning phase, you can strategise on how to analyse the data, involving the working group or committee, and prioritise actions based on the results. Interpretation of the results may be necessary depending on the type of measurement taken. For instance, if an input measure suggests a geriatric bear needs a lower bed area, then the subsequent action is obvious, and the output measure would be to observe if the bear uses the new accessible bed. However, some results may require problem-solving discussions if no clear action is apparent. For instance, if a bear has the lowered beds but resting on the hard ground instead, further investigation is needed. This might involve relocating the beds, assessing if another bear is occupying the area, or considering if the beds are still too high. In such cases, insights from the zookeeper team are valuable, making it a great opportunity to engage them in the problem-solving process.
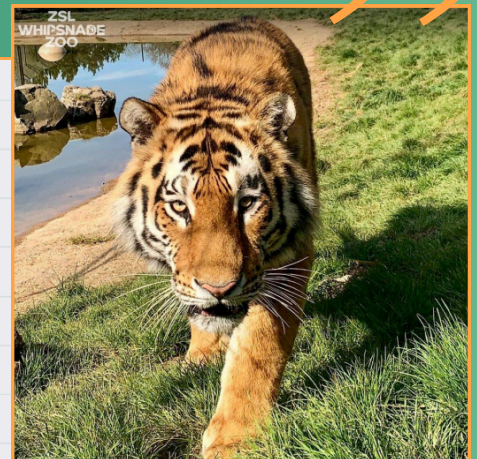
Utilising the outcomes and setting priorities can be straightforward. For instance, one approach is to use the results to establish a Welfare Action List. This list can cover various areas requiring welfare enhancements, starting from quick solutions like adjusting the temperature in a vivarium, to more

complex actions such as implementing a training programme to train the meerkats, to those demanding thorough planning and budgeting like installing an upgraded water filtration system. It is beneficial to prioritise actions within these categories. Certain tasks might necessitate immediate attention regardless of their scale, and some outcomes may take longer than others before they are implemented. This can be demotivating for the teams, if they do not see results from the time that they have given to the process up to this point. Therefore, it is important to establish and maintain good communication, so that team members understand when they can expect to see changes implemented.

How is the community making this happen?

As part of ZSL's welfare assessment programme, our Amur tigers underwent a full audit review in January 2023. The audit highlighted some climbing and shelter structures within the enclosure that were deteriorating and needed to be removed. Through our behaviour assessment conducted for the audit, we were able to evidence that these resources were highly utilised by both tigers and put forward a request for their replacement as part of the audit action plan. Our managers reviewed the audit and supporting evidence and allocated a portion of our annual welfare budget to renovate the tiger enclosure.

Work focused on those key areas highlighted as important in the audit, and were completed by February 2024. We are pleased to say that the shelter and climbing structures were replaced, and were increased in size and complexity. We reviewed the tiger audit in Spring 2024 and repeated our behaviour assessment, and we were able to evidence significant improvements in scores. Not only were the new structures being fully utilised, we also saw a decrease in pacing, down to one third of the amount previously observed.

Lisa Clifforde
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Member of the EAZA Animal Welfare Working Group

☐ How are you going to train those involved in the process?

This includes individuals responsible for conducting assessments, as well as analysing and interpreting the findings. Creating a guidance document, like the Wild Planet Trust Welfare Auditing Guidance

[Document](#), can be beneficial in outlining the process, along with utilising e-learning courses mentioned earlier and in the Further Resources below. Assessors must grasp the assessment's objectives to prevent bias and subjective input arising from fear of criticism. It is crucial to clarify the process to participants, explain each question thoroughly, and encourage questions to avoid any confusion or misinterpretations. Group practice assessments and feedback sessions can also be valuable, along with highlighting the importance of not comparing departments or teams with regards to welfare.

Assessors must possess a solid understanding of the species under study and a general grasp of animal management. This includes knowledge of animal behaviour, distinguishing between normal and abnormal behaviours, recognising positive and negative social and feeding behaviours. Assessors should be able to accurately observe and interpret behaviours. When utilising environmental monitoring tools like UV meters or sound monitors, individuals will need training to ensure accurate data collection. It is important to convey to assessors that it is acceptable not to know everything, and acknowledging the limits of their knowledge is more beneficial than providing incorrect information. The EAZA strongly advocates and facilitates the sharing of knowledge, expertise and support, therefore it may be that answers can be found from the community.

How is the community making this happen?

"This example describes the collaboration between several zoos and aquariums in Spain and the Zoo Animal Welfare Education Center (ZAWEC) to design and implement a training program on animal welfare assessment for zoo staff. ZAWEC is a group of researchers in animal welfare based at the Vet School of the Autonomous University of Barcelona. The training program is divided into two phases. Phase I includes a set of lectures and workshops addressed to veterinarians, curators, keepers and zoo staff involved in educational activities. The lectures and workshops cover the fundamental principles of animal welfare assessment. Phase II is addressed to a sub-group of keepers and curators and deals mainly with welfare assessment before and after an environmental enrichment plan is implemented.

As part of phase II, several animals or groups of animals with welfare problems that are likely to be ameliorated through environmental enrichment are identified by ZAWEC instructors and zoo staff. An environmental enrichment program is then designed and implemented following the [SPIDER](#) approach. Emphasis is given to the importance of identifying specific objectives and monitoring the effects of environmental enrichment by assessing welfare both before and after environmental enrichment. Additionally, keepers and curators are trained in behavioural recording methodology. This training program has contributed to improve animal welfare and to set up an animal welfare assessment program run by zoo staff with the collaboration of independent researchers."

Xavier Manteca
ZAWEC, School of Veterinary Science, Autonomous University of Barcelona, Spain
Official Advisor to the EAZA Animal Welfare Working Group

☐ How are you going to communicate the plans and results?

It is crucial for the entire zoo team to understand that the Animal Welfare Assessment Programme serves as an opportunity to highlight areas of positive welfare, not just the negative aspects. It provides a formal chance for enhancement, often focusing on areas that the teams have identified and welcome improvements. Documenting proposed enhancements offers clarity and establishes a formal process. Involving relevant zookeeper teams in problem-solving sessions, seeking their advice and input before taking action, is essential to ensure the best decisions are made by utilising their expertise and

encouraging their engagement. Hosting monthly question and answer sessions instead of relying solely on emails encourages effective dialogue and discussion. Sharing assessment outcomes, generating ideas and actions based on the results, and distributing the Welfare Action List help the zoo team understand how their efforts in completing assessments contribute to positive progress. Sharing "success stories" from the programme and active involvement of the team is vital to inspires ongoing engagement and ownership of the programme by the team.

Do

Do the welfare assessment by collecting the data
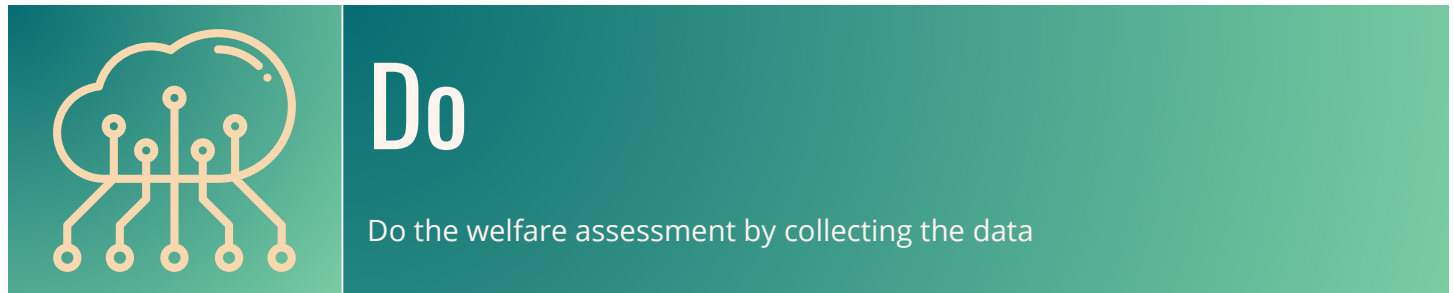
☐ How are you going to monitor progress?
☐ Who is going to be ensuring that it keeps to schedule?
☐ Have you implemented a system for keeping the teams up-to-date with progress, and for questions and feedback?

Once you have planned your assessment process, executing it should align with the plan. Start with a pilot test, then adjust the plan accordingly. Designate someone to coordinate the 'who, what, and when', acting as a point of contact and ensuring resources are available for the assessments.

Different assessments may be used for different taxa or species, be conducting an indepth species-specific assessment on an animal(s), or you may choose to use a more generalised assessment if you would like to conduct a large number of assessments, across a large number of animals.

Maintain regular communication with the teams throughout the process. This helps them see the assessments as part of the entire programme rather than just a task. Keep the teams informed about the number of assessments completed, the next steps, and actively seek feedback to enhance improve the process and to promote team engagement. Viewing the programme as an ongoing process is key and reassuring that it is an opportunity for positive change, and not a personally critical process.

Downloadable copies of both these assessments and more, can be found on in the EAZA Animal Welfare Assessments Library.
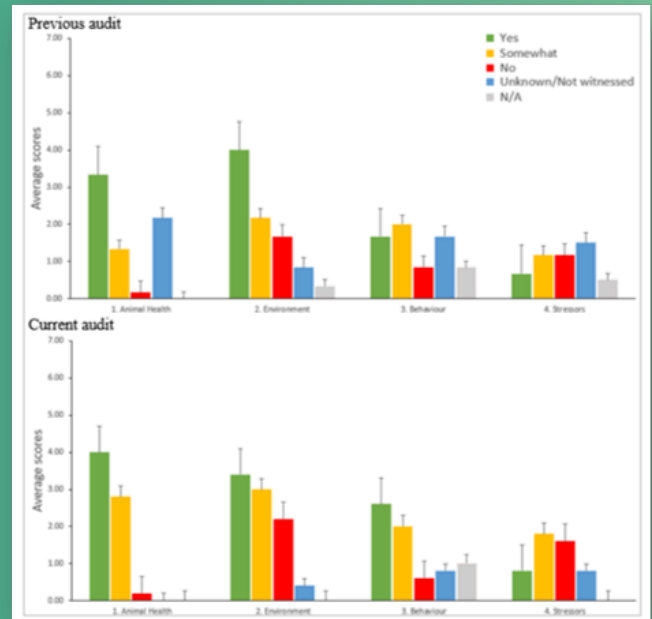
ANALYSE

Understand what the data is telling you about the welfare of the animal

☐ What are the data telling you?

- ☐ What are the data suggesting about the welfare of the animal(s)?
- ☐ Are there suggestions of good welfare and areas of welfare that need to be improved?
- ☐ Do all the assessors agree or are some of the assessment results different? Why?
- ☐ What does this mean?
- ☐ What do we not know and what are we lacking research/understanding on?
- ☐ Do you feel that there is sufficient welfare science and taxa knowledge applied to the data analysis to have confidence in the outcome? Is there the need for more scientific training?
- ☐ Have you considered the limitations of the assessment you used, for example, output measures verses input measures, and any important data missing?

Wild Planet Trust's Welfare Audit Guidance provides examples of result presentation. The process of compiling assessment results into a clear format should be simple to enhance efficiency in discussions and decision-making. Summarising using graphs may not be necessary, as forms may be detailed enough for the group to pinpoint areas needing improvement. In some cases, discrepancies in assessment results for the same animal/species may arise due to reasons like ambiguous questions or varied interpretations of behaviours. These variations can be addressed through discussions to understand the discrepancies and resolve any issues.

This example (right) shows data from the first assessment, and then the second assessment after actions have been implemented. Results are grouped into the different assessment catagories, therefore presenting the data visually to easily show changes in welfare.

When analysing the assessment data, it is crucial to grasp what it does and does not imply about the animal's welfare. Every assessment has its constraints; our ability to collect comprehensive data for each species is limited, and welfare requirements for all species are not universally understood. Hence, the insights gained from an assessment may vary. Remember that no assessment is flawless, and acquiring more information may help clarify our understanding of animal welfare. If there is no data available in the assessment, this should not be disregarded as an absence of welfare issues; rather, it indicates a need for further investigation. For instance, exploring the nutritional needs of the species at different life stages may be necessary. Consulting a zoo nutritionist, referring to the EAZA Best Practice Guidelines, or reviewing scientific literature can aid in this process.

Understanding the animal's needs and behaviours is essential when interpreting data to prevent misinterpretations that could lead to overlooking welfare issues, applying incorrect actions, or attempting to alter positive welfare behaviours based on misunderstandings. Team training may be necessary in

areas where misinterpretations are common, such as behaviour, to enhance knowledge levels. However, utilising a suitable welfare assessment template/form, a knowledgeable assessment team about the animal and the process, and an informed approach to analysing and acknowledging limitations are likely to pinpoint areas where animal welfare can be enhanced significantly.

PROGRESS

Identify areas of good welfare and areas where welfare needs to be improved. Prioritise, problem solve and action

☐ **How are you going to use the assessment results to progress welfare and progress your Animal Welfare Assessment Programme?**
  - ☐ What are the areas that have been identified as suggesting good welfare? Can this be used as an example?
  - ☐ How are you going to prioritise those areas that need welfare improvement?
  - ☐ Could a brainstorming session with the relevant teams be beneficial to share knowledge and ideas?
  - ☐ Have you created a process for proposing changes which can be proposed to management?
  - ☐ Have you checked back on changes actioned to see if they have improved welfare?
  - ☐ Evaluate your Animal Welfare Assessment Programme - did it work as a tool to improve welfare and how can it be improved?

It is important to remember and reinforce with all those involved in the programme, that the welfare assessments are an opportunity for both identifying areas that require welfare progression, and those areas that are welfare progressive. Areas that are identified as already progressive can be used as an example which may be followed within other areas. It may also be something that should be shared with the wider zoological community as positive welfare practice. The EAZA Executive Office communications team always welcomes best practice examples from the community which we can share on our social media channels and meetings.

Where areas have been identified for improvement, a Welfare Priority List may be created to help you to organise actions. This can be developed in conjunction with working with the zoo teams to understand the information captured within the assessments and brainstorm ideas. The zoo keeper team should be central to conversations for problem solving, which may also include other team members such as veterinary and welfare specialists.

Generated ideas can be formally presented for approval to implement changes and maintain a record of actions and outcomes. This process involves requesting proposed changes to be documented on a **Welfare Proposal Form**. Proposals can range from simple requests like adding three more water sources in the enclosure, to more complex ones like doubling the size of the wading birds' wallow to prevent overcrowding and aggression. Additionally, this form can double as a budget request when necessary. Not all proposed actions may result in improved welfare, so conducting a follow-up assessment is crucial. Further brainstorming sessions and completion of Welfare Proposal Forms may be necessary.

WELFARE PROPOSAL FORM

Proposer:...
Date:..

Animal:..
Area:..

Welfare issue identified:.......................................

Proposed change:...

Curator approval:...
Veterinary approval..
Further comments:..

WELFARE PRIORITY LIST

PRIORITY GROUP	EASE OF CHANGE 1=easy 5=hard	ANIMAL ID / TAXA	BUDGET APPROVAL NEEDED?	WELFARE PROPSAL FORM REFERENCE	RESPONSIBLE PERSON
High	1				
High	3				
High	5				
Medium	1				
Medium	3				
Medium	2				
Medium	2				
Low	4				
Low	1				
Low	1				
Low	5				

High priority welfare changes needed. Some easier than others but all treated as high priority

Low priorty welfare changes needed, however some easy 'quick wins' which could be implemented straight away

Using the analysis of your assessment results to promote change is crucial for advancing welfare in your institution through the Animal Welfare Assessment Programme. Creating a **Welfare Priority List** can be extremely useful to organise and prioritise actions. Some solutions may be quick fixes, like adding more drinking points to address territorial behavior. However, some improvements may require further consideration and discussion with the zookeeper team and other experts. Implementing these quick fixes can lead to immediate positive impacts on welfare and boost team morale. Balancing quick wins and larger projects is essential to maintain motivation and highlight the programme's success. A further example of a Priority/Action List in the **BIAZA Animal Welfare Toolkit**, which can be found on the EAZA Animal Welfare Page.

Welfare Action Lists can be designed in many different ways to suit your organisation. The essential elements to include are the species, the action(s) required, priorities and time frames set, and monitoring of completion dates and ongoing actions. More information on this example from the Wild Planet Trust, can be found on the EAZA Animal Welfare Page.

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

Recording changes in accordance with institutional procedures is recommended to track progress over time. After identifying areas for improvement, prioritising, developing, and implementing solutions, reassessment is essential to evaluate the effectiveness of the changes. The timing of reassessment depends on the action taken – for instance, addressing social aggression may require prompt follow-up, while introducing new enclosure structures may take time to observe behavioural changes.

Listing your welfare requirements, prioritising actions and outcomes, is also a useful tool to quantify how sucessful your Animal Welfare Assessments Programme is at promoting change. This can provide opportunities for evaluation (see Evaluate section below) and can be highly motivating for those inolved. It is useful to showcase the progressiveness of the zoo team to trustees and communications team.

How is the community making this happen?

Following the completion of a welfare assessment for a specific animal, species or exhibit the assessment is forwarded to the zoo's welfare coordinator. The coordinator then analyses and summarizes the findings into a Welfare Report and Action Plan. The welfare report includes details such as the animal/species/exhibit assessed, the assessment date, and the assessor's information. It also provides a summary of scores for each section, covering the five welfare domains. These scores serve as benchmarks for comparing welfare across different areas and subsequent assessments. Graphical representations of the scores help identify areas requiring intervention, such as instances where an animal scores well in health but lower in choice and control.

These results inform the development of the Welfare Action Plan. The Welfare Action Plan, stemming from the report, guides head sections in prioritising interventions and tracking necessary improvements for specific animals. It outlines identified and potential welfare issues, proposed solutions, corrective actions, responsible personnel, and intervention deadlines. Additionally, the reports highlight any missing information essential for future assessments and suggests research projects to address these gaps. Every three months, the welfare committee convenes to review recent welfare action plans, identifying any outstanding corrective actions and ensuring interventions are appropriately prioritized and escalated when necessary. Annual comparisons of data are conducted to assess improvement in welfare indicators over time.

Elly Neumann
Jerusalem Zoo and Aquarium, Israel
Member of the EAZA Animal Welfare Working Group

Evaluate

Decide on your objectives, what you want to achieve and how you are going **to** do it

☐ **Is your Animal Welfare Assessment Programme fit-for-purpose?**
☐ What quality criteria are you going to use?
☐ What is the quality of your programme?
☐ How can it it be improved?

It is important to evaluate your Animal Welfare Assessment Programme to comprehend its value, steer quality enhancements, and guide improvements effectively. To evaluate the programme and foster quality outcomes, follow these straightforward steps. Keep in mind that this evaluation focuses on the Animal Welfare Assessment Programme itself, not on any particular assessment.

1 Planning	2 Framing
How to decide the type and timing of evaluation, who to involve and what will be required	How to clarify what is being evaluated about a programme and how the evaluation should be structured
4 Designing	**3 Focusing**
How the methods of collecting and analysing information are developed	How priority questions are set that the evaluation will be designed to answer
5 Collecting & Analysing	**6 Synthesising & Reporting**
How information is collected and interpreted	How the evaluation questions are answered and the findings shared

Adapted from Healthcare Improvement Scotland's Evidence and Evaluation for Improvement Team (EEvIT)

These steps can serve as a helpful guide for a straightforward process. To evaluate your programme effectively, assess its performance, quality, and areas for enhancement. For instance, a quality criteria question could be, "Are the animal management teams actively engaged in the process?". This can be answered through online surveys or discussions. Other questions to consider are: "Have we met our planned targets for the number of animals/species within the set timeframe?", "Can we pinpoint welfare enhancements resulting from the programme?" and "Are there unexpected obstacles slowing down progress, and how can we address them?".

The frequency of formal programme evaluations can differ depending on the programme's level of development. A newly established programme may need monthly evaluations to track its progress effectively. In contrast, a well-established programme may undergo annual evaluations. Nevertheless, ongoing informal evaluations are likely to swiftly address any quality issues that may arise.

How is the community making this happen?

> At Lincoln Park Zoo, we began our welfare assessment process with a species-general welfare assessment tool. After 2.5 years of using this tool zoo-wide, we examined whether there was evidence of systematic differences in welfare scores across taxa, as this could be indicative that our tool was not equally serving all the species in our care. We analyzed tools completed for 174 different species including mammals, birds, reptiles, amphibians, fish and invertebrates, and found that mammals scored higher than all other groups. We also found that raters were more likely to choose "not applicable" for non-mammals. These findings sparked a careful review of items and discussions with scientists, care staff, veterinary staff and behavioral husbandry experts, resulting in a modified tool intended to broaden the taxonomic relevance. We also removed the option to choose "not applicable" for items that we judged to be relevant for all species. In this open-access publication, you can view the findings of our evaluation, the original tool, and the modified tool in use now. We've also launched tailored tools for some species and roles. In the future, we will again assess and adjust our program as needed to continually try to have the most effective program for evaluating and enhancing welfare for all animals in our care.

Katherine A. Cronin
Director, Animal Welfare Science Program, Lincoln Park Zoo
Official Advisor to the EAZA Animal Welfare Working Group

O'Brien, S. L., & Cronin, K. A. (2023). Doing better for understudied species: Evaluation and improvement of a species-general animal welfare assessment tool for zoos. Applied Animal Behaviour Science, 264, 105965.

Summary

The Animal Welfare Assessment Programme involves a series of processes aimed at enhancing positive animal welfare, with animal welfare assessment as its core focus. It is crucial to recognise that a one-size-fits-all approach doesn't apply to welfare assessments. Your Animal Welfare Policy will describe your organisations overarching approach to animal welfare, and should include reference to your Animal Welfare Assessment Programme as part of key actions to promote welfare. Your programme should be tailor-made to meet both the needs of your organisations, and provide relevant animal welfare information, is comprehensible to your teams, and enables a process for enhancements in welfare. To ensure the programme's effectiveness and continuity, involve your teams through positive communication and view the process as an opportunity for advancement. Thorough planning, conducting assessments, analysing results, implementing improvements and evaluating the effectiveness of your programme, in a continuous cycle are essential for the sustained success of your Animal Welfare Assessment Programme.

EAZA recognises that establishing your Animal Welfare Assessment Programme will take time, and will be an evolving process as new science and institutional experience develops. The EAZA Executive Office and EAZA Animal Welfare Working Group hope that this guide, and the linked resources, will support you in the process.

PLAN

- [ ] What are the primary objectives of the programme?
- [ ] Who are the stakeholders?
- [ ] What are the timeframes?
- [ ] What assessment form are you going to use?
- [ ] How are you going to use the results?
- [ ] How are you going to train those involved in the process?
- [ ] How are you going to communicate the plans and results?

DO

- [ ] Does everyone understand the plan?
- [ ] How are you going to monitor progress?

ANALYSE

- [ ] What are the data telling you?

PROGRESS

- [ ] How are you going to use the assessment results to progress welfare?

EVALUATE

- [ ] Is your Animal Welfare Assessment Programme fit for purpose?
- [ ] What quality criteria are you going to use?
- [ ] How can it it be improved?
- [ ] What is the quality of your programme?

RESOURCES TO DEVELOP

- [ ] Animal Welfare Policy
- [ ] Animal Welfare Asssessment Proceedure
- [ ] Animal Welfare Assessment Forms/Templates
- [ ] Guidance resources for assessors
- [ ] Your assessment schedule
- [ ] Welfare Action List (prioritising)
- [ ] Welfare Proposal Form
- [ ] Programme Evaluation quality process

Further resources

Scientific Publications

- Benn AL, McLelland DJ, Whittaker AL. **A Review of Welfare Assessment Methods in Reptiles, and Preliminary Application of the Welfare Quality® Protocol to the Pygmy Blue-Tongue Skink, Tiliqua adelaidensis, Using Animal-Based Measures.** Animals (Basel). 2019 Jan 17;9(1):27. doi: 10.3390/ani9010027. PMID: 30658490; PMCID: PMC6356264.
- Hawkins P, Morton DB, Burman O, et al. **A guide to defining and implementing protocols for the welfare assessment of laboratory animals: eleventh report of the BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement. Laboratory Animals.** 2011;45(1):1-13. doi:10.1258/la.2010.010031
- Jones N, Sherwen SL, Robbins R, McLelland DJ, Whittaker AL. **Welfare Assessment Tools in Zoos: From Theory to Practice**. Vet Sci. 2022 Apr 1;9(4):170. doi: 10.3390/vetsci9040170. PMID: 35448668; PMCID: PMC9025157.
- Kagan R, Carter S, Allard S. **A Universal Animal Welfare Framework for Zoos**. J Appl Anim Welf Sci. 2015;18 Suppl 1(sup1):S1-10. doi: 10.1080/10888705.2015.1075830. PMID: 26440493; PMCID: PMC4673521.
- Low, P. **The Cambridge Declaration on Consciousness.** Proceedings of the Francis Crick Memorial Conference, Churchill College, Cambridge University, July 7 2012, pp 1-2
- Wolfensohn S, Shotton J, Bowley H, Davies S, Thompson S, Justice WSM. **Assessment of Welfare in Zoo Animals: Towards Optimum Quality of Life.** Animals (Basel). 2018 Jul 4;8(7):110. doi: 10.3390/ani8070110. PMID: 29973560; PMCID: PMC6071229.

Websites & E-courses

- Caring For Wildlife - The World Zoo and Aquarium Animal Welfare Strategy - Translated into multiple languages, and includes excellent practical examples
- Wild Welfare - free e-course, online resources
- Coursera - free e-courses (search 'Animal Welfare'. *Animal Behaviour & Welfare* by The University of Edinburgh is recommended)
- ZooMonitor - Free behavioural monitoring tool developed by Lincoln Park Zoo's Animal Welfare Science Programme
- Species 360 - Care and Welfare Webinars - open access
- Royal Veterinary College, University of London - Development of welfare assessments
- Four Paws International - Animal welfare assessment framework
- Evidence and Evaluation Improvement, Healthcare Improvement Scotland

Acknowledgements