



Developing Welfare Assessments at the Columbus Zoo

Kelly Vineyard, Senior Curator ♦ Columbus Zoo and Aquarium

kelly.vineyard@columbuszoo.org



speaker notes in italics

Developing A Welfare Committee and Assessments at the Columbus Zoo



We are good at stealing from others.



Pieces and parts of a program

- Nutrition program
- Animal Health and Preventive Medicine Program
- Enrichment and Training Programs
- Pest Management
- Geriatric and end of life management

But never had a complete formal program.



Zoo Monitor and Excel

- Welfare Trak
- Zoo Monitor
- Excel observation spreadsheet
- ZIMS!

Trial runs in Welfare Trak/Zoo Monitor and observations on excel.

We also had good records now in ZIMS with things like regular weights and feed logs.



Observation Interns

As of 8/29/18 at 3:40pm									
Porcupine		Loris		Guichenot's Geckos		Tawny Frogmouths (with bettong)			
Row Labels	Count of Eating	Row Labels	Count of Behavior	Row Labels	Count of Eating	Row Labels	Count of Walking		
Climbing	18.77%	Climbing	5.80%	Climbing	7.27%	Climbing	0.34%		
Digging	0.68%	Drinking	0.68%	Eating	0.35%	Digging	1.71%		
Eating	13.65%	Eating	10.58%	Grooming	0.69%	Eating	8.22%		
Grooming	1.37%	Grooming	1.37%	Not Viewable	3.81%	Flying	0.68%		
Not Viewable	13.31%	Not Viewable	24.57%	Sleeping/Resting	76.47%	Grooming	1.03%		
Sleeping/Resting	39.25%	Running	0.68%	Walking	11.42%	Not Viewable	4.11%		
Walking	12.97%	Sleeping/Resting	34.47%	Grand Total	100.00%	Running	1.03%		
Grand Total	100.00%	Walking	17.06%			Sleeping/Resting	66.78%		
		Digging	4.78%			Walking	16.10%		
		Grand Total	100.00%			Grand Total	100.00%		
Binturong		Halmahera Geckos		Wombat		Tawny Frogmouths (with kiwi)			
Row Labels	Count of Hopping	Row Labels	Count of Sleeping/Resting	Row Labels	Count of Sleeping/Resting	Row Labels	Count of Behavior		
Climbing	4.78%	Climbing	3.46%	Climbing	6.14%	Eating	2.05%		
Drinking	0.34%	Eating	0.35%	Drinking	0.34%	Flying	0.34%		
Eating	5.12%	Not Viewable	1.38%	Eating	13.31%	Flying	6.48%		
Grooming	2.39%	Sleeping/Resting	92.73%	Grooming	1.71%	Grooming	1.02%		
Hopping	2.73%	Walking	2.08%	Hopping	1.37%	Sleeping/Resting	88.74%		
Not Viewable	11.26%	Grand Total	100.00%	Not Viewable	12.97%	Not Viewable	0.68%		
Sleeping/Resting	64.16%			Running	0.68%	Walking	0.68%		
Walking	9.22%			Sleeping/Resting	56.66%	(blank)	0.00%		
Grand Total	100.00%			Standing	0.34%	Grand Total	100.00%		
				Walking	6.48%				
				Grand Total	100.00%				

Unpaid interns are regularly doing animal observations and projects for us. Most seem to center around stereotypies, yard usage and activity budget. But one thing that I am more focused on is visibility and activity. For instance we are interested in changing our nocturnal building lights to red lights and it would be a nice project to test visibility and activity before and after the change.

Some places we “borrow from”



ANIMAL WELFARE ASSESSMENT PROCESS

★ / [ACCREDITATION](#) / [ACCREDITATION RESOURCE CENTER](#) /
[GUIDELINES & SAMPLE DOCUMENTS, PROGRAMS, AND POLICIES](#) / [ANIMAL WELFARE ASSESSMENT PROCESS](#)

Example Policies:

Calgary Zoo: [Animal Welfare Assessment Program](#)

Denver Zoo: [Animal Welfare Monitoring Program](#)

Greensboro Science Center: [Animal Welfare and Wellness Assessment Process and Protocols](#)

Oklahoma City Zoo: [Animal Welfare Program](#)

Riverbanks Zoo and Garden: [Animal Welfare Program](#)

Sophia M. Sachs Butterfly House: [Animal Welfare Program Overview](#)

Toledo Zoo: [Animal Welfare Assessment Process](#)

Example Forms:

Cincinnati Zoo: [Animal Welfare Assessment Form](#)

Additional Resources:

[Guide to Creating an Animal Welfare Assessment Process Under Standard 1.5.0](#)

[Animal Welfare Program Template](#)

🔍 In this Section

[SEASONAL OPERATIONS PROTOCOL](#)

[ANIMAL TRANSACTION PROTOCOL & FORMS](#)

[OTHER EMERGENCY PROCEDURES](#)

[ANIMAL FOOD NUTRITION, ACQUISITION, & PREPARATION POLICY](#)

[VOLUNTEER PROGRAM](#)

[ENERGY & NATURAL RESOURCE CONSERVATION PROGRAM](#)

[ANIMAL WELFARE ASSESSMENT PROCESS](#)


[SHARED SPACE PROTOCOLS FOR ELEPHANTS](#)


Related Information

AZA Accreditation Resource Center has some amazing documents to steal.

Zoo Animal Welfare: Pioneering Methods & Techniques

THIRD INTERNATIONAL SYMPOSIUM
ZOO ANIMAL WELFARE: PIONEERING NEW METHODS & TECHNIQUES
OCTOBER 8-10, 2017 | BROOKFIELD ZOO

PRESENTED BY THE
Chicago Zoological Society 
Center for the Science of Animal Care and Welfare



SCHEDULE OF EVENTS

SUPPORTED BY
The Grainger Foundation

In 2017 another Curator and I attended the International Symposium on Animal Welfare in Brookfield. We brought back so many ideas on how to manage for a 24 hour period instead of 8-12 hours and things like eliminating routines and the importance of randomness and much, much more!

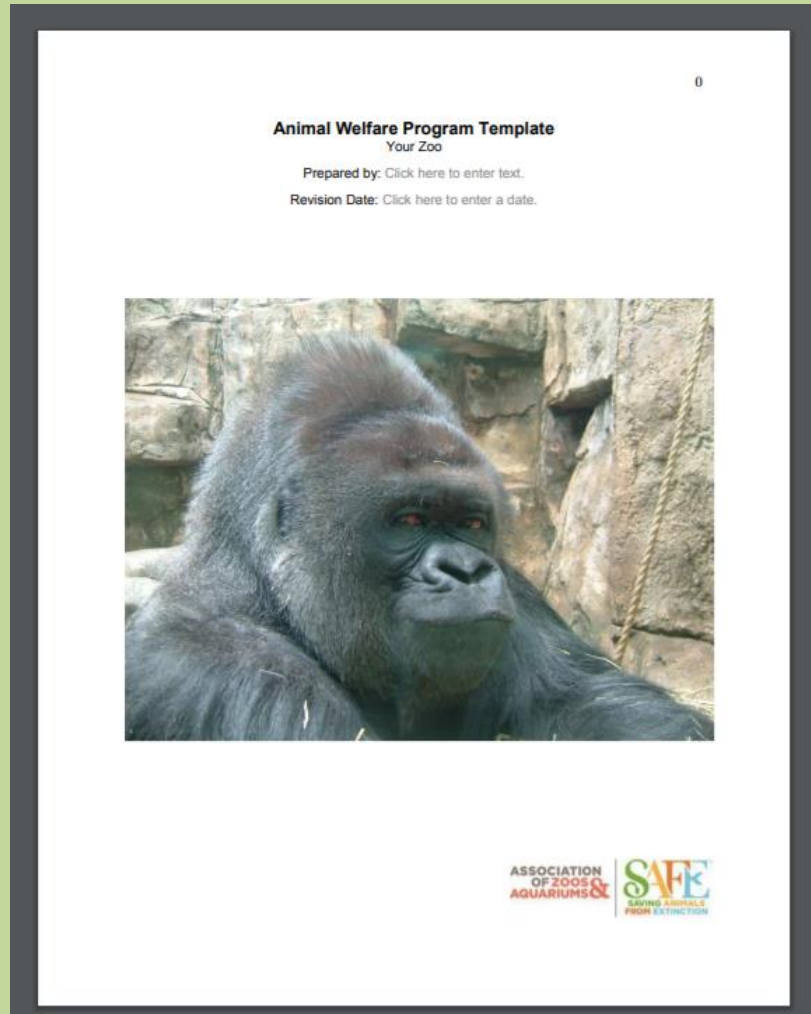


AZA Professional Development Course

Animal Welfare: Evidence - Based Management Brookfield, Illinois: May 6-11, 2018

We started having meetings about developing our Welfare Committee in February 2018. We were making great progress and then Adam and I attended the AZA Welfare Course. As you can imagine this was incredibly helpful and eye opening making our efforts to create a Welfare Committee and Program much easier. We of course brought back mountains of information and ideas.

AZA Animal Welfare Program Template



At the same time as developing our committee and taking the course, AZA's Animal Welfare Program Template came out.



Developing our Committee

Regular Meetings to determine structure and content

This took almost 1 year

- Deciding on Committee members
- Developed our Definition, Mission and Vision statements
- Created Sub-Committees
- Developed Assessment and Quality of Life Tools and Frequencies
- Modified and Updated our Animal Welfare Concern Form
- Received the AZA Animal Welfare Template
- Established Priorities and Objectives
- Required all Keepers and Curators to take the San Diego Global Welfare course
- Partner with an Ohio State Ph. D. and Graduate students
- Interns from other colleges also



The Ohio State University

The Columbus Zoo Animal Welfare Committee decided to add a level of rigor to our animal welfare evaluation process by inviting Dr. Kelly George, Ph. D. to be a member of the committee.

The Columbus Zoo and Aquarium has had a long standing relationship with The Ohio State University for decades.

<https://chaire.osu.edu/people/dr-kelly-george-phd>

CHAIRE

Center for Human-Animal Interactions Research and Education



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AND ENVIRONMENTAL SCIENCES

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Administrative Structure

People

Dr. Kelly George, PhD

Search



CHAIRE Co-Director, Assistant Professor - Professional Practice
george.239@osu.edu

Office:
222F Animal Sciences Building

Phone:
614-688-3224

Degree Information:
PhD Environmental Sciences, The Ohio State University
MA Geography, The Ohio State University
BA International Studies, The Ohio State University

Specialization:
Human-Animal Interactions



Kelly George is the Co-Director, Assistant Professor of Professional Practice. CHAIRE = Center for Human-Animal Interactions Research and Education. Currently she is conducting studies with our elephants, cougars, penguins, macaws and the Animal Programs department as a whole.



Reporting Animal Welfare Concerns



Animal Welfare Concern

Thank-you for taking the time to submit a concern to the Animal Welfare Committee. The Columbus Zoo and Aquarium is committed to ensuring that animal health/welfare is our greatest priority. Please note that the Columbus Zoo and Aquarium has a strict policy regarding retaliation (Employee Handbook 6.19); **in no way will you be retaliated against for submitting a concern.** We ask that you fill out the entire form, leaving only optional information blank if desired, to ensure we have enough information to initiate the Animal Welfare Concern Process.

Animal Welfare Concern Reporting Process

1. Report your question or concern to your supervisor or Animal Care/Programs manager. Supervisors receiving concerns should contact Animal Care area Curator/Manager to seek answers or clarification to be shared with submitting employee.
2. If your concern is not addressed through step number one, please proceed with this form.

Please enter your name and email address in order to be notified when your concern is received by the Animal Welfare Committee, and to allow them to ask you follow-up questions if applicable. Please note that if you wish to receive a response - you must provide your name and contact information.

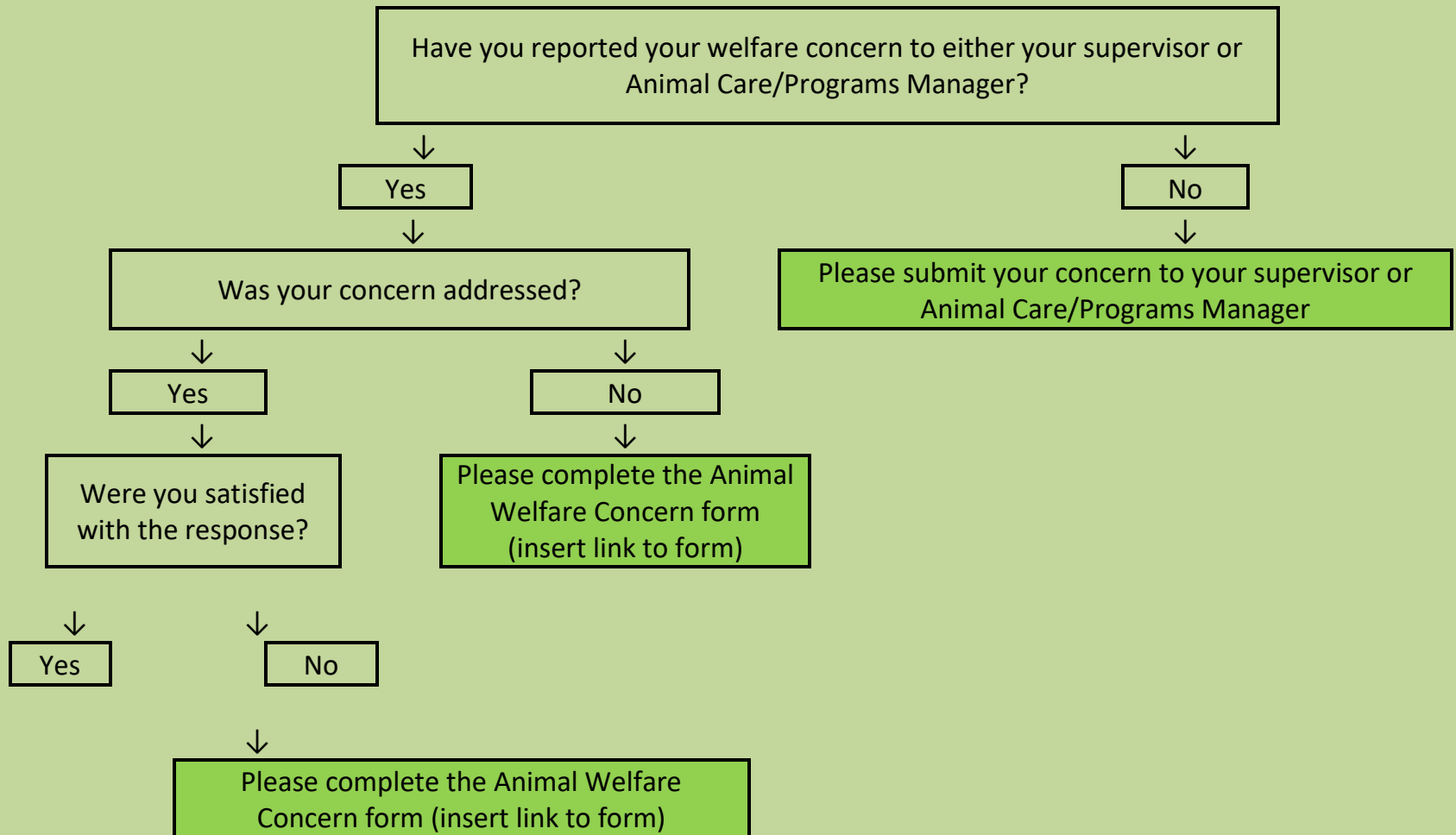
Please answer a few questions below to begin the process.

Have you reported your welfare concern to either your supervisor or Animal Care/Programs Manager?

START OVER

One of the first things we accomplished was updating and revising our Reporting Process. This is available both electronic and hard copy with the ability to be anonymous.

Welfare Concern Flow Chart



More “Borrowing!”



Assessment Tool

- We were originally going to make this grand - all encompassing tool with everything but the kitchen sink
- After attending the AZA course we stole the template that the class had created instead and molded that assessment into our own
- Short and sweet - just 2 pages
- We have modified it several times since we determined it was final
- Even after using for a couple months, we are still making changes
- So maybe it is *never* final!

Proposed AZA Animal Welfare Framework

Proposed AZA Animal welfare framework

Zoos and aquariums accredited by the Association of Zoos and Aquariums (AZA) are committed to promoting positive welfare for the animals in their care by focusing on the following components of animal welfare:

1. **Nutrition** – a suitable, species-appropriate diet will be provided in a way that ensures full health and vigor, both behaviorally and physically.
2. **Environment** – animals will experience an appropriate environment that encourages opportunities to self-maintain and promotes ongoing comfort and safety.
3. **Health** – animals will have the opportunity to experience good physical health including access to a wellness program as well as rapid diagnosis and treatment of injury/disease to ensure ongoing robustness and vitality through all life stages.
4. **Behavior** – quality spaces and appropriate social groupings will be provided that encourage species-appropriate behaviors at natural frequencies and of appropriate diversity while meeting social and developmental needs of each species in the collection.
5. **Choice and control** – animals will have an opportunity for choice and control to seek out and achieve a positive welfare state while able to make choices to avoid suffering and distress.
6. **Affective or mental states** - conditions will be provided in which animals will have the opportunity to experience a predominance of positive emotional states and minimize negative survival-related experiences and emotional states.

The assessment tool is based on AZA's proposed Animal Welfare Framework. For our zoo, while we were forming this committee and creating the program we realized that we do numbers 1-3 very well and need to better develop 4-6.



Animal Assessment

Revised
3.19.19

Species and House Name						
Is this a system, group, or individual?:						
Animal ZIMS#/Group #/Enclosure Code:						
Date of Assessment:						
Who is Assessing:						
Position of Assessor:						
Event Dictating Assessment:						
	YES	NO	Neutral	Unsure	Details	Suggestions
1. NUTRITION						
All animal(s) are offered a diet designed and analyzed according to professional standards.						
There is evidence that all animals are consuming their food in a species-appropriate manner.						
Evidence that all animals are receiving adequate nutrition.						
2. ENVIRONMENT						
Enclosure space, features, structural elements, substrate type, amount, and variety are sufficient to meet the physical and behavioral needs of all animals						
Demonstrated ability to use enclosure space, features, and structural elements allow for animals to exhibit species typical behaviors						
The following environmental parameters are appropriate:						
*Temperature						
*Humidity						
*Lighting						
*Air Quality						
*Water Quality						
*Substrate						
*Bedding /Nesting Materials						
*Acoustical environment						
Space and complexity of off exhibit areas allow for animals to exhibit species typical behaviors						
Is the animal(s) housed in a species-appropriate social setting						
3. HEALTH						
Weight and/or body condition scores are appropriate for all animals						
Evidence of illness, injury, or disease						
Evidence of species typical fecal form and elimination pattern						
Coat/feather/scale/Skin appearance is appropriate for the species and season						
Individual exhibits species appropriate gait/swim/flight/movement pattern						

The Proposed AZA Animal welfare framework is a combination of the 5 Opportunities to Thrive and the 5 Domains.

4. BEHAVIOR						
Is there evidence of species appropriate frequency and diversity of natural behaviors for this individual?						
Are there stereotypic behaviors for this individual?						
Is there abnormal or excessive aggression?						
Is there evidence of self-injury?						
5. CHOICE AND THEN CONTROL						
Is there evidence staff is appropriately trained to identify normal behaviors?						
Are there protocols in place to balance the amount of time the animal is in public contact?						
Do the animals have the ability to regulate its proximity to guests, caregivers or specifics /conspecifics, in its exhibit space?						
Is there evidence the animals have the ability to positively cope with stressors?						
Animal provided with:						
*appropriate environmental change						
*Substantial opportunities for choice and then control within their environment?						
6. AFFECTIVE/ MENTAL STATE						
Do the animals demonstrate the behavioral diversity for the species?						
Is there evidence of detrimental stereotypic behaviors?						
Are there species appropriate indicators of positive welfare? (vocalizations, socialization, facial expressions, body posturing, etc)						
Are there indicators of chronic stress? (i.e. vomiting, facial, vocalizations, separating from the herd, etc)						

If any of the checks are in the blue shaded columns, these statements are recorded on a separate spreadsheet.



“Concern” spreadsheet

	A	B	C	D	E	F	G	H	I	J
1	Date of Assessment	Species	Keeper	Concern	Details	Assessment Committee Review Needed?	Meet with keeper	Suggestions	Action Plan	Date of Implementation
2	april fools day	snake headed cat	Fred Flintstone	The following environmental parameters are appropriate: lighting	Arfie the cat doesn't have any lighting	No	Yes	put in work order to install appropriate lighting and timers	will complete the suggestion by tomorrow	tomorrow
3										
4										
5										
6										
7										
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32										
33										
34										

When trialing with keepers, some were reluctant or hesitant to do the assessments in fear of getting in “trouble” or finding out we are not caring for our animals well. So one of the things we did was change the title from Welfare assessment to Animal Assessment, as well as creating a guide or explanation sheet and we will be having 2 hour training classes to further explain the process and see how they are going so far.



Assessment Calendar - Congo Expedition

	Species	POP	Qualifiers	Individual or Group	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Gorilla	5.1	Temperatures/access outside	Individual							x					x
2	Bonobo	5.1 5.1	Temperatures/access outside	Individual	x					x						
3	Orangutan	1.2	Temperatures/access outside	Individual		x						x				
4	Red River Hog	1.3	Temperatures/access outside	Individual			x								x	
5	Mandrill	3.0	Temperatures/access outside	Individual		x					x					
6	African Leopard	2.1	Temperatures/access outside	Individual				x						x		
7	Okapi	2.2	Temperatures/access outside	Individual	x								x			
8	Black Duiker	1.0	Temperatures/access outside	Individual	x								x			
9	Colobus Monkeys	1.3	Temperatures/access outside	Individual						x						x

Every department has put all animals or groups of animals in an assessment calendar. Most are based on at least annual but many are twice a year since we are temperate climate and their environments change between summer and winter living.

Columbus Zoo Welfare Assessment Process

It is the expectations of the staff at the Columbus Zoo to be well versed and committed to the Columbus Zoo and Aquarium Welfare Program. Each species, exhibit, and/or group of animals' welfare is to be assessed on a regular basis with any concerns addressed to the Curator(s) of the area. The Columbus Zoo and Aquarium welfare assessment calendar can be found on the shared network along with **assigned keepers**. For ungulates in herds, aquariums housing multiple species, or aviaries an assessment of the group or exhibit is acceptable (with the exception of giraffe and elephants). If an individual during the assessment of a heard, aquarium or aviary stand out or needs more attention a separate assessment for that individual will be initiated by the Curator. In addition to the annual welfare assessment below are other life events that may initiate more thorough and/or frequent assessments:

- Social Animal in Quarantine
- Construction events
- Introduction of animal into a new habitat
- Introduction of animal to conspecifics
- If an animal has a chronic illness or injury:
- When an animal is considered geriatric

If during the assessment an alert is identified, this alert will be communicated to the Curator(s) of the area and a plan or response will be created and documented. The animal assessment tool can be found on the zoo shared network. This tool is not the Columbus Zoo's welfare program but a piece of the overall program that can assist with assessing the welfare of each animal. A combination of this assessment, the quality of life assessment and the activity budget program will provide a well-rounded assessment of each animal's welfare.

1. **Curator(s)** identify the frequency of an assessment and tools to be used for that individual or exhibit.
 - a. An assessment should be done a **minimum of once a year**
 - b. **Curator(s)** is responsible for identifying species that require more frequent assessments and will update assessment calendar with assigned keepers
 - c. **Curator(s)** is responsible for communicating issues and the management change to assist with these issues to the welfare committee
 - d. **Curator (s)** will also determine the assessment frequency of ill, injured, or aging animals
 - e. **Curator(s)** is responsible for identifying and initiating welfare assessments during life impacting events.
2. After welfare assessments have been completed:
 - a) Completed assessments should returned to curator(s) of the area and:
 - Reviewed by curator
 - Saved in appropriate file on network drive
 - b) If in the assessment an **alert** was identified (shaded box on template):
 - Curator and animal care staff still will meet to formalize an action plan. The action plan should include:
 - a. Further investigation (observation study, etc)
 - b. Documentation of minutes of the alert with keeper staff
 - c. Possible solution(s) (if there is one)
 - d. Reassessment of animal(s) after implementation of changes
 - c) Curator will alert the animal welfare committee via email, including the assessment
 - The alert/concern will be reviewed and assigned to monitor and follow up
 - Each alert should be followed with updates to the welfare committee after each assessment or until resolved.
 - All alerts will be reviewed by welfare assessment committee to:
 - a. Acknowledge the concern
 - b. Assist in finding a resolution (if needed)
 - c. Save for follow up after concern is identified
 - d. After resolution of welfare concern curator(s) will supply the welfare committee 1-2 sentences explaining the concern and resolution (if there is one) to the welfare committee to be filed in the o drive.

Even more “Borrowing!”





Quality of Life

- Borrowed Cheyenne Mountain Zoo's
- Gathered several other examples
- Some were taxon specific such as reptiles or raptors
- Decided on a format which I believe came from Cheyenne or The Basil Zoo
- Analyzed each question and modified some wording
- Played around with the multipliers
- Test trials
- Now we are in the real trial phase
- This could take months and will more than likely have changes

COLUMBUS ZOO AND AQUARIUM QUALITY OF LIFE ASSESSMENT



Species:		Local ID#:	
Animal house name:		Sex:	
Date completed:		Age:	
Last evaluation:		MLE:	
Completed by:			

Cardinal symptoms	SCORE No = 0 Yes = 1-3	Multiplier	SCORE
Vomiting			
Decreased appetite			
Abnormal appetite/cravings			
Loss of weight			
Lameness			
Diarrhea			
Excessive thirst/urinating			
Shortness of breath			
Coughing			
Bite wounds			
Isolation from group			
Position in hierarchy			
Lethargic			
Apathy			
Pain when standing up			
Reluctance to move			
Weakness			
Muscle atrophy			
Dehydration			
Poor hygiene			
Hyper salivation			
Coat/feather/scale/skin/hoof appearance not appropriate for the species or season			
Inappropriate gait/swimming/flight/movement pattern			
Other:			
Other:			
		Sum	0

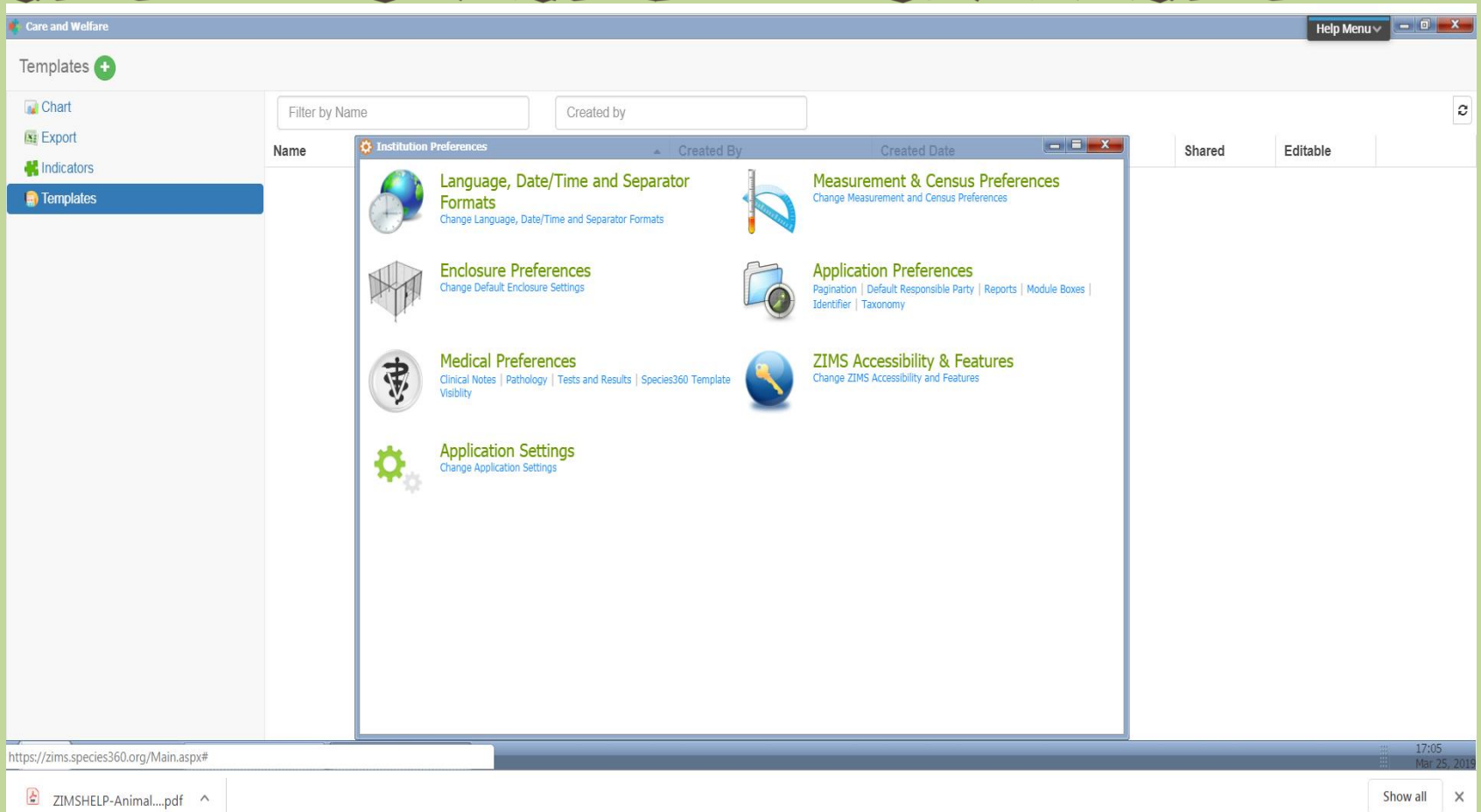
Behavioral concerns	SCORE No = 0 Yes = 1-3	Multiplier	SCORE
Over grooming, feather picking, self-trauma, mutilating			
No longer desires or unable to make behavioral choices			
Anxiety or chronic stereotypes			
Extreme aggression			
		Sum	0

SUBTOTAL 1: 0








Therapy		yes or no	
Is there a specific therapy or treatment available for current condition?			yes - answer 2 questions below no - go to temporary /trial therapy
		SCORE Good/Yes = 0 Bad/No =	Multiplier SCORE
Efficacy of the treatment was			
During/after the treatment, did the symptoms improve?			
Please briefly describe therapy			
Therapy		yes or no	
Is there a temporary or trial therapy for current condition?			yes - answer 2 questions below no - skip
		SCORE Good/Yes = 0 Bad/No = 1→3	Multiplier SCORE
Efficacy of the treatment was			
During/after the treatment, did the symptoms improve?			
Please briefly describe therapy			
		SUBTOTAL 2: 0	
Overall Evaluation		SCORE	
Evaluation of pain/discomfort		None/Good = 0 Severe/Bad = 1→3	Multiplier SCORE
Evaluation of quality of life			
Considerable human and/or monetary resources are needed to provide care			
Treatments are invasive or stressful for the animal			
		SUBTOTAL 3: 0	
Additional assessment questions			
Breeding interest			
yes, shows interest in breeding = -3 (neg 3)			
shows little or no interest in breeding = 1			
no opportunity to breed, unsure if it would breed = 0			
no opportunity to breed, suspect it would breed = 3			
Able to reproduce & recommended to breed			
yes = -3 (neg 3)			
not recommended to breed = 0			
no = 3			
Does this animal hinder the arrival of new breeder			
no = 0			
yes = 3			
		SUBTOTAL 4: 3	

Veterinary Evaluation		yes or no	
Has this animal had a medical exam in the last 2 months?			yes - vet staff to fill out following evaluation
		SCORE Normal = 0 Severe Changes = 1→3	Multiplier SCORE
Visual Exam			
Body Condition			
Blood Values			
Radiographic Exam			
Ultrasound Exam			
CT Exam			
Fecal Exam			
Urine Exam			
Endocrine Values			
Neurologic Exam			
Dental Exam			
Other:			
Other:			
SUBTOTAL 5:			0
Any additional comments from Vet staff?			
Results			
Without veterinary examination:		Sum of the four subtotals	3
From 1 to 30 - treatment & monitoring recommended			
From 31 to 51 - quality of life needs close monitoring; discuss euthanasia			
Over 51 - euthanasia recommended			
Including veterinary examination:		Sum of the five subtotals	3
From 1 to 45 - treatment & monitoring recommended			
From 46 to 66 - quality of life needs close monitoring; discuss euthanasia			
Over 66 - euthanasia recommended			
Any additional comments?			

ZIMS Care and Welfare



The screenshot displays the 'Care and Welfare' section of the ZIMS application. On the left, a sidebar contains navigation options: Chart, Export, Indicators, and Templates (which is currently selected). The main content area features a table of templates with columns for Name, Created By, and Created Date. A modal window is open over the table, displaying a list of institution preference templates:

Name	Created By	Created Date	Shared	Editable
 Language, Date/Time and Separator Formats Change Language, Date/Time and Separator Formats				
 Enclosure Preferences Change Default Enclosure Settings				
 Medical Preferences Clinical Notes Pathology Tests and Results Species360 Template Visibility				
 Application Settings Change Application Settings				
 Measurement & Census Preferences Change Measurement and Census Preferences				
 Application Preferences Pagination Default Responsible Party Reports Module Boxes Identifier Taxonomy				
 ZIMS Accessibility & Features Change ZIMS Accessibility and Features				

The browser's address bar shows the URL: <https://zims.species360.org/Main.aspx#>. The system tray in the bottom right corner displays the time as 17:05 and the date as Mar 25, 2013. A taskbar at the bottom shows an open PDF file named 'ZIMSHelp-Animal....pdf'.

So then, wouldn't it be cool if our assessments were in ZIMS! Well, wouldn't you know it? It is! So at the same time we were developing our committee and tools, ZIMS added the enhancement ZIMS Care and Welfare.



ZIMS Care and Welfare

- We transitioned our animal records a while ago but just recently completed transitioning our Animal Training and Enrichment records to ZIMS
- We are still learning this system and will be learning and trialing the ZIMS Care and Welfare by the end of the year and then deciding if we want to convert our Excel Animal Assessment over to ZIMS



Where we are now

- Finishing our completed Animal Welfare Program Document
- Taking 2019 to be our trial year for the Animal Assessment and Quality of Life Forms
- Utilizing observation interns and The Ohio State University students to gather data utilizing various methods
 - Beginning with animals of concern, stereotypies, visibility issues, habitat usage and activity budgets
- Familiarizing ourselves with ZIMS Animal Care and Welfare



Columbus Zoo Animal Welfare Program

Prepared by Adam Felts, Kelly Vineyard, and Doug Warmolts

Revised: April 3, 2019

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Probably should have 1 bird picture



Or at least 2 bird pictures



O.K! 3 bird pictures!



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Questions?

