

# Developing Avian Welfare Assessments At Denver Zoo

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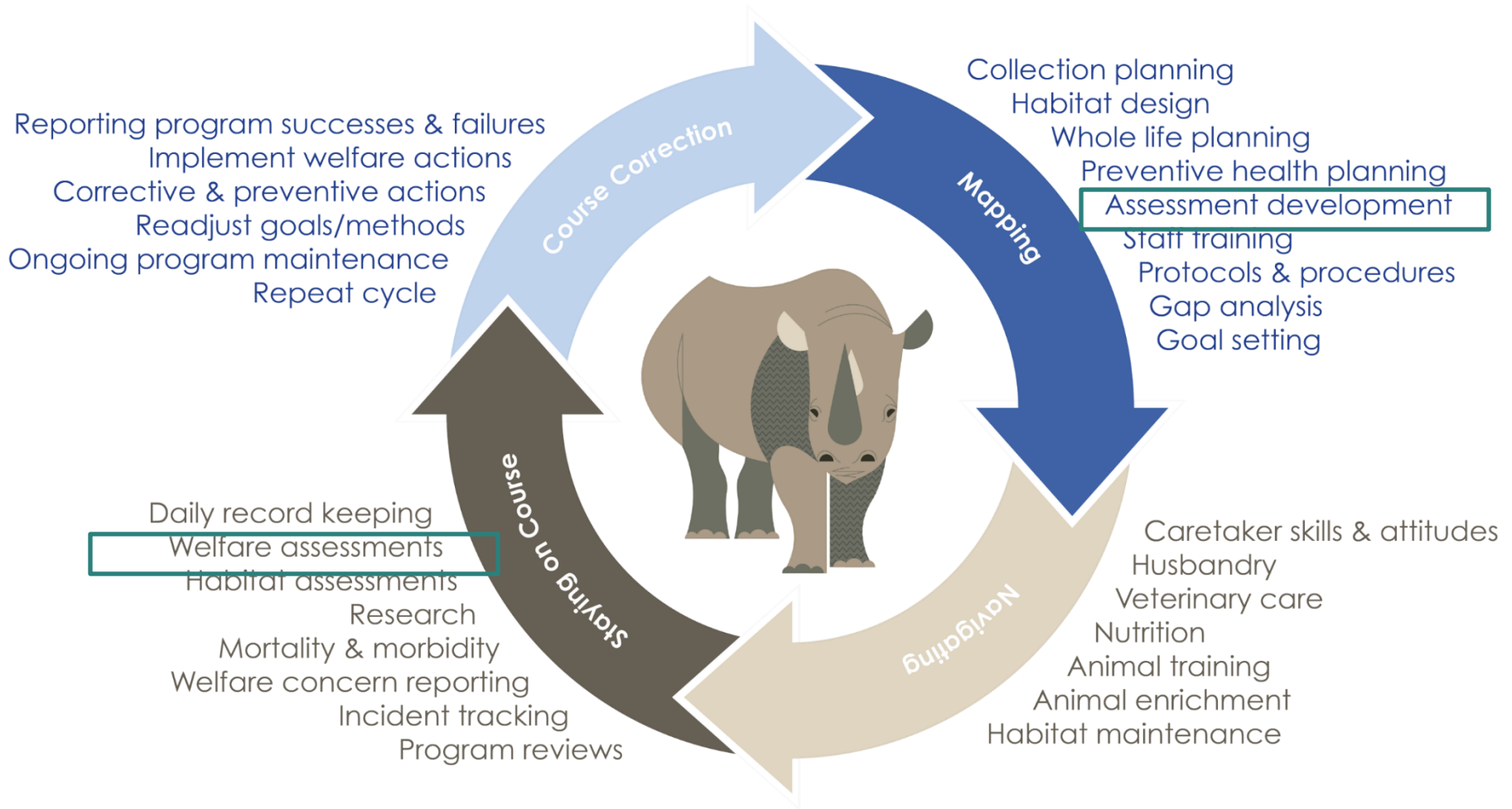
# Developing Animal Welfare Assessments

## Why is this important?

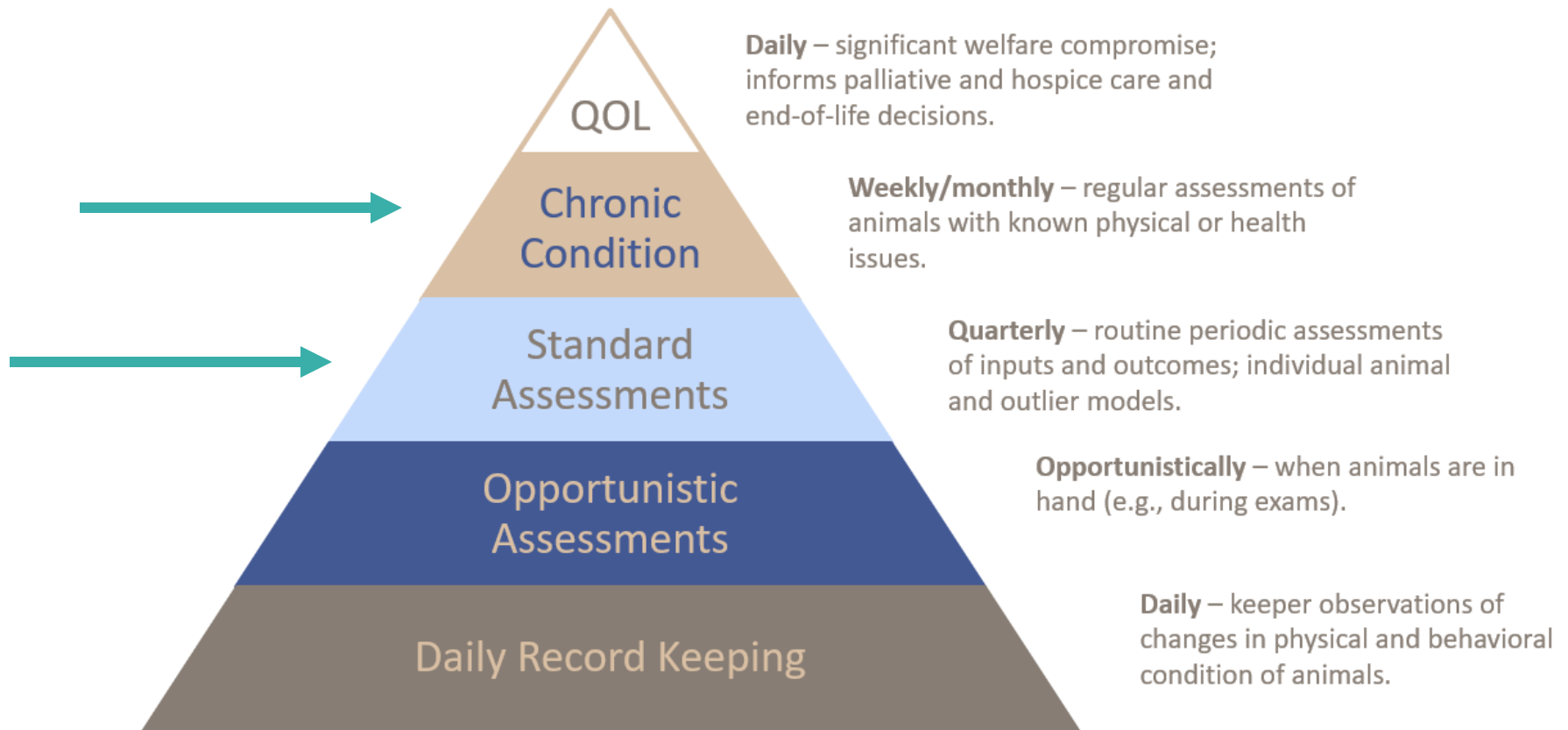
- You already assess the wellness of your animals every day, right?
- Gradual trends over time
- Flags you to look a little harder
- Inform management decisions
- Next-level monitoring
- Palliative, hospice care and end-of-life decisions
- Oh, and meeting AZA Accreditation Standards!



# Denver Zoo Animal Wellness Program



# Developing Animal Welfare Assessments



# Developing Standard Avian Assessments: Steps



1. Develop indicators
2. Develop indicator assessment criteria
3. Determine types of assessments
4. Determine scoring method
5. Perform pilot assessments



# Developing Indicators and Criteria for Avian Assessments

- Getting feedback from stakeholders
- What indicators work for birds on a taxonomic level – not just species level
- Can we accurately assess this?



# Avian Welfare Indicators

- Activity level
- Attitude
- Behavior
- Food consumption
- Location in enclosure
- Mobility
- Physical condition
- Signs of stress
- Social interactions



# Avian Welfare Indicator Criteria



<b>Activity level</b>	1	Activity level is normal for this species/individual
	0	Animal engages in most normal activities
	-1	Lethargic compared to normal activity patterns
<b>Attitude</b>	1	Bright, alert, and responsive; engaged with surroundings, other animals, caretakers
	0	Animal is somewhat slow to engage in daily activities
	-1	Animal may be uncharacteristically disengaged with surroundings, other animals, or caretakers; may be withdrawn
<b>Behavior</b>	1	Animal displays behavioral diversity and complexity representative of the species
	0	Animal displays behavioral diversity that is largely representative of the species, including display of all self-maintenance behaviors
	-1	Animal primarily displays only basic self-maintenance behaviors or abnormal behaviors or behaviors not representative of the species
<b>Food consumption</b>	1	Animal responds to presentation of diet and is observed eating as usual
	0	Animal may be slower to respond to presentation of diet but is observed eating; somewhat less than normal feeding response
	-1	Inappetance or animal only eating treats or specialty items; or not observed to be eating





# Avian Welfare Indicator Criteria

<b>Location in enclosure</b>	1	Animal is using its enclosure as expected
	0	Animal is occasionally observed to be spending its time in locations out of the norm
	-1	Animal is uncharacteristically spending an unusual amount of time in locations out of the norm; may be concealing itself
<b>Mobility</b>	1	No mobility issues; normal locomotion
	0	Some occasional or minor mobility issues; not always locomoting with ease
	-1	Unable to locomote or able to locomote only with significant effort
<b>Physical condition</b>	1	No pathology; general physical condition, body condition, conformation, and condition of wings, feathers, beaks, and feet are optimal
	0	Mild pathology in any of the above; not associated with any health issues
	-1	Significant pathology; may be causing primary or secondary health issues
<b>Signs of stress</b>	1	No signs of stress as measured physiologically or as observed behaviorally
	0	Occasional acute stress (as measured physiologically or observed behaviorally); associated with specific events or situation; short duration
	-1	Chronic stress (as measured physiologically or as observed behaviorally); associated with repeated or prolonged exposure to stressful conditions; more than a few days

# Avian Welfare Indicator Criteria



<b>Social interactions</b>	1	Normal social patterns/interactions for the species/individual; compatible with enclosure mates
	0	Social activity is slightly reduced compared to normal patterns but animal is still able to remain with and interact with social partners; may respond to but does not always initiate social contact
	-1	Social animal is unable or unwilling to engage in normal social activity; may be isolating from or incompatible with enclosure mates



# Determining Type of Standard Assessment: Individual or Outlier model




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- Bird keepers: 30-100 birds
- Elephant keepers: 0.5 elephants average
- Assessments need to accurately reflect state
- Efficiency
- Individual model: single or small groups
- Outlier model: large groups



# Individual model



**A00257 SALEM**    Casuarius casuarius (no subsp) / Double-wattled Cassowary  
**Born:** 5/15/1995 (Y01) at Private Collection (Captive born) **Original Acq:** 9/18/2000 12:00 am  
**Location:** [BW 14](#) (Own) **Sex:** Female **Med Alerts:** [No Alerts](#) **Collection:** Exhibit Collection **Studbook AZA:** G:

Add New Specimen Holistic Assessment

**Animal**   
**Assessment Time**

Observation Type	Weight	No Previous Assessmen	Assessment	Comment
Activity level	10.00		1 Optimal	
Aggression/submission	10.00		NA	
Attitude	10.00		1 Optimal	
Behavioral diversity	10.00		NA	
Body condition	10.00		1 Optimal	
Caretaker-animal interac	10.00		0 Acceptable	
Conformation/gait	10.00		NA	
Coprophagy	10.00		NA	
Defecation	10.00		NA	
Exercise	10.00		NA	
Exploration/manipulation	10.00		NA	
Feeding behavior	10.00		0 Acceptable	
Food consumption	10.00		1 Optimal	

Score: 6.67

**Reason**



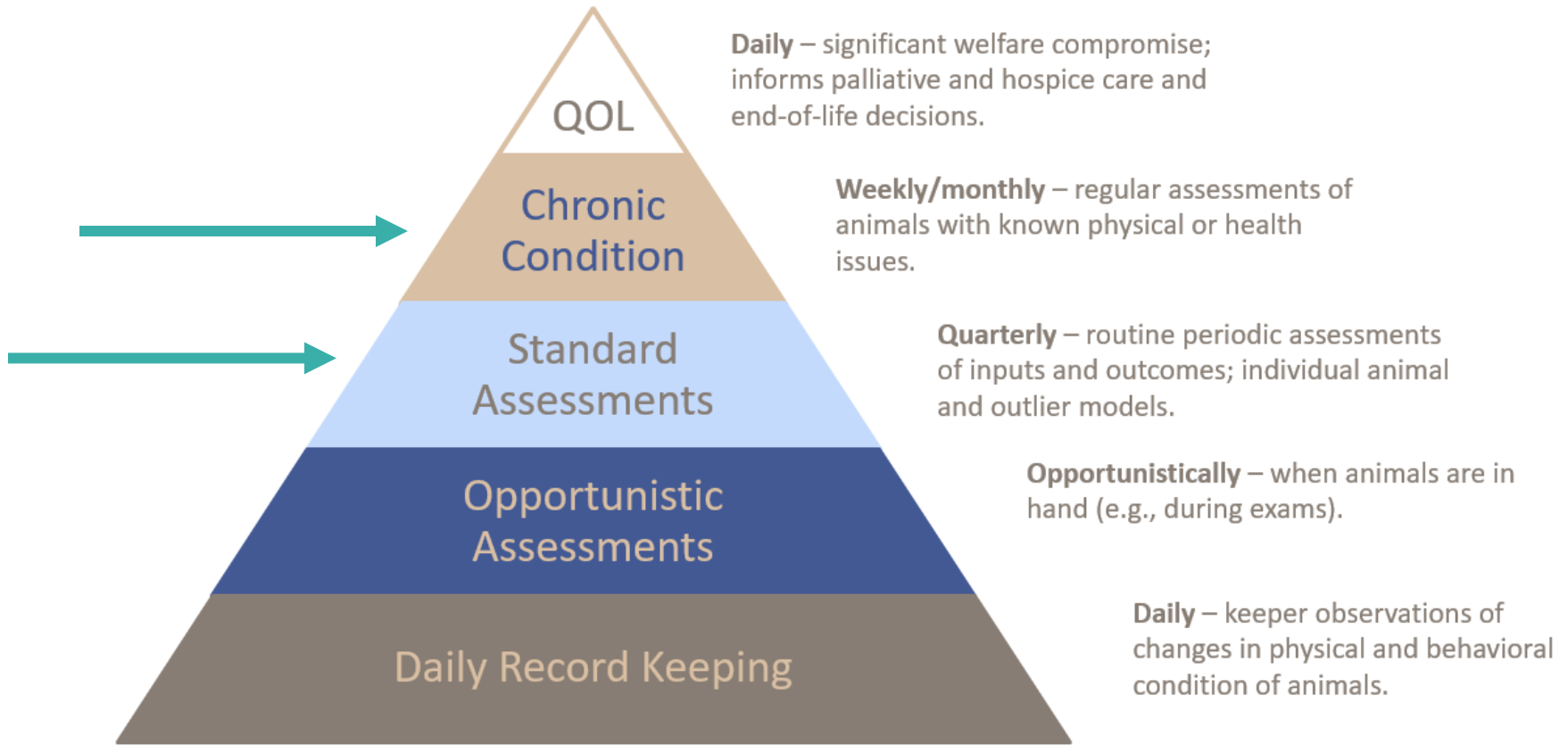
# Outlier model



	Activity level		Attitude		Behavior
Blue-crowned Motmot / <i>Momotus momota</i> (1 Animals)	Expected	Expected	Expected		Expected
Crested Oropendola / <i>Psarocolius decumanus</i> (3 Animals)	Expected	Expected	Expected		Expected
Inca Tern / <i>Larosterna inca</i> (10 Animals)	Expected	Suspect	Expected		Expected
Lady Ross' Turaco / <i>Musophaga rossae</i> (1 Animals)	Expected		Expected		Expected
Linne's Two-toed Sloth / <i>Choloepus didactylus</i> (2 Animals)					
Madagascar Teal / <i>Anas bernieri</i> (1 Animals)	Expected		Expected		Expected
Rothschild's Peacock Pheasant / <i>Polyplectron inopinatum</i> (1 Animals)	Expected				
Storm's Stork / <i>Ciconia stormi</i> (2 Animals)	Expected		Expected		Expected
White-faced Whistling Duck / <i>Dendrocygna viduata</i> (4 Animals)	Expected		Expected		Expected



# Determining Type of Assessment



# Chronic Condition Assessment

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- Formally “broken birds” list
- List of birds with notable conditions that may or may not be assessed on a monthly basis
- Better, same worse model
- Qualitative vs quantitative scoring



# Chronic Condition Assessment



## All Welfare Assessments

Assessments Chronic Conditions

Saved Filters Record Options Export Quick Filter

All conditions, review role Aquatics Refine Filter Customize Columns Save Filter • 15 records

Accession Number	Primary Identifier	Status	Condition Name	Most Recent Rating	Most Recent Review Date
A17143	TSUNAMI	Open	Cracks on feet		
A12202	FESTUS	Open	Hatched without carpal j...		
A11037	ST LOUIS ZOO 6175	Open	Cataract in right eye - mo...		
A11037	ST LOUIS ZOO 6175	Open	"Knuckles" toes on both f...		
A11037	ST LOUIS ZOO 6175	Open	Injured right foot/toes		
A11037	ST LOUIS ZOO 6175	Open	Chronic arthritis on left fo...		
A09138	EDITH	Open	Focal osteoarthritis on lef...		
A09138	EDITH	Open	Cracks on feet that cause ...		
A09138	EDITH	Open	Hyperkeratinosis on feet		
A04088	LADY LAGERTHA	Open	Bumbles on feet		
A04088	LADY LAGERTHA	Open	Missing inner toe on left f...		
A04088	LADY LAGERTHA	Open	Fractured right wing at ca...		
A04088	PLASTIC 09	Open	Bird walks with a slight li...		
A04088	PLASTIC 09	Open	Middle digit on right foo...		
A04088	PLASTIC 09	Open	Outer toe on right foot br...		

Add New Chronic Condition Review

**Review Date**

**Reviewed By**

**Rating**

**Comment**





# Next steps for Assessing Denver Zoo's Avian Welfare Assessments

- Continue piloting the assessments
- Staff input
- Tracks updates
- Accurate reflection?  
Readjust?



# Thank you!

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- Sharon Joseph
- Hollie Colahan
- Denver Zoo Bird Team



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