



**The Lonely Rhino: Analyzing
Anthropomorphism Toward Solitary Animals**

By: Selenia Murillo



Introduction



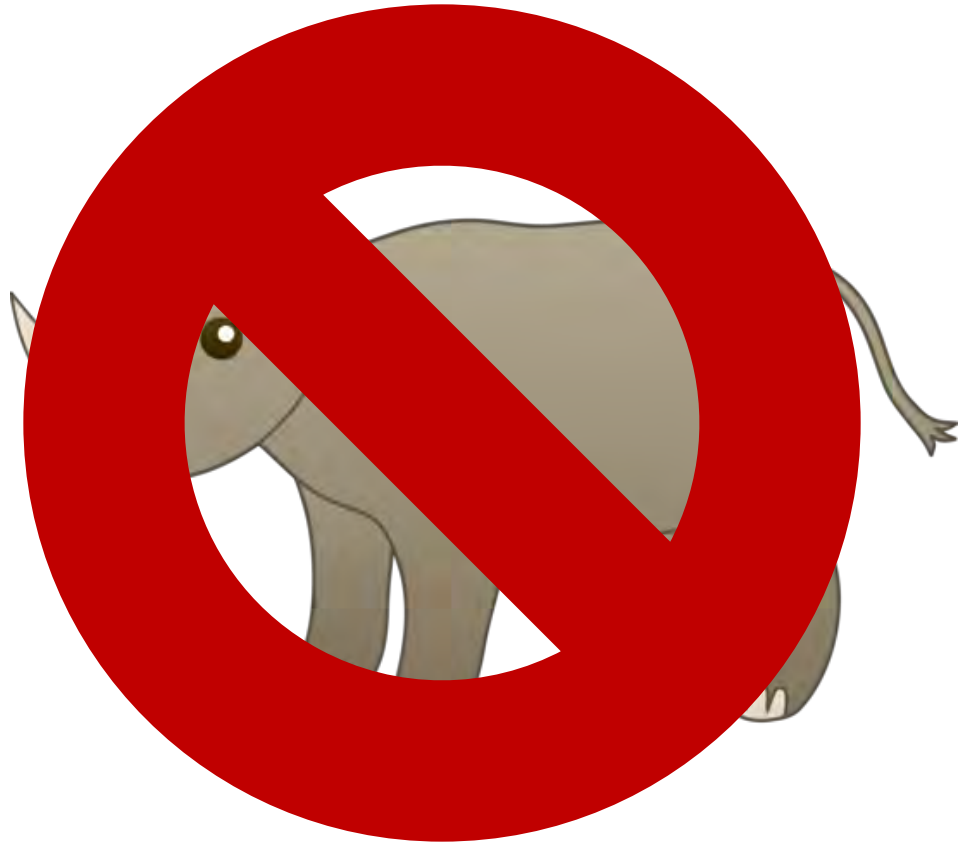
Mission

To inspire conservation leadership by *connecting people with wildlife* and nature

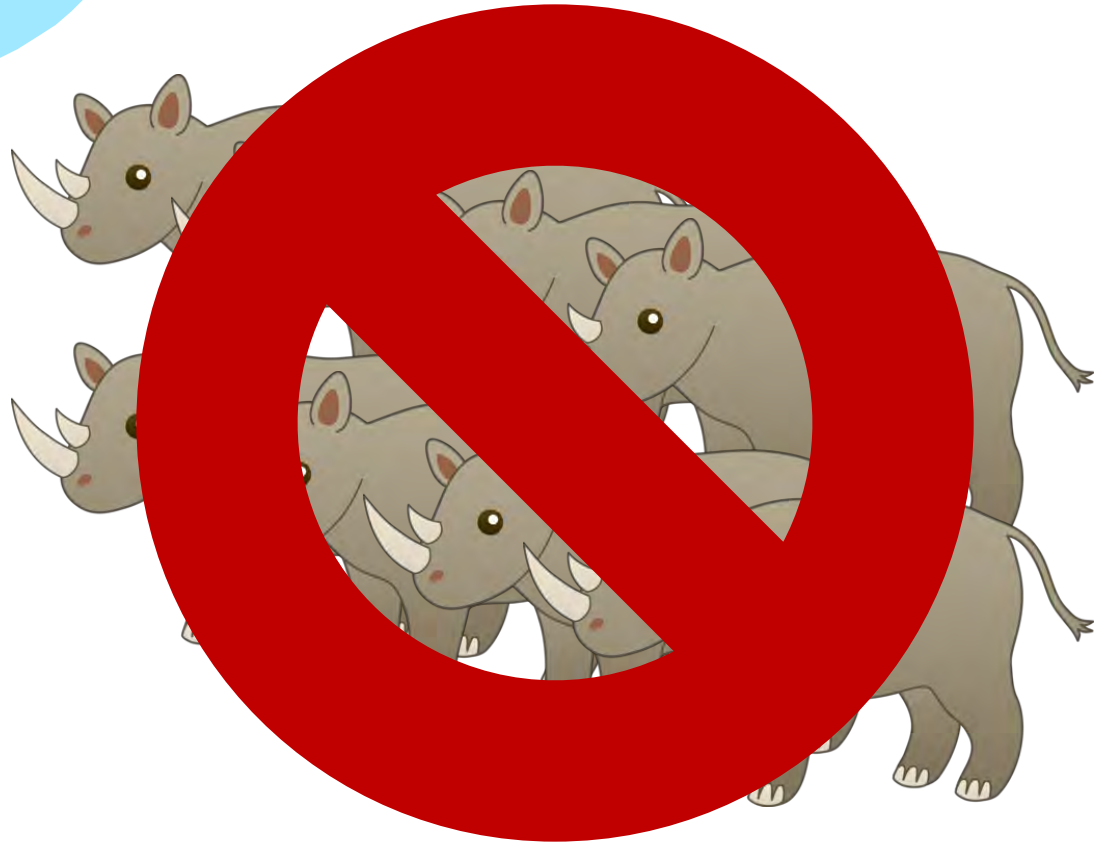
Top 5 Favorite Animals



I *prefer* to see animals in *group* settings.



I *prefer* to see animals in *group* settings.





**Are we effectively
fulfilling our mission?**



Methods

2. Using the scale below, please indicate how much you agree or disagree with the following statements about the black rhino.

	1	2	3	4	5	6	7				
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree				
					1	2	3	4	5	6	7
a. The black rhino appears lonely.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. The black rhino appears healthy and well-fed.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. The black rhino seems stressed by the presence of visitors.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. The black rhino has a dequate space.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. The black rhino's behavior differs within a zoo setting.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The black rhino has enough toys and interactive features in its exhibit.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. The black rhino doesn't need a companion.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. The black rhino appears sickly and malnourished.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. The black rhino's environment lacks engaging and enriching stimuli.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. The black rhino's behaviors are similar to those of wild rhinos					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. The black rhino needs more room.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. The black rhino was unaffected by the presence of visitors.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Select the number 5 for this item.					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Based on the behaviors you observed, how would you describe:

a) the black rhino's mood or emotional state _____

b) your mood or emotional state _____

4. Which best describes the natural social structure of black rhinos?

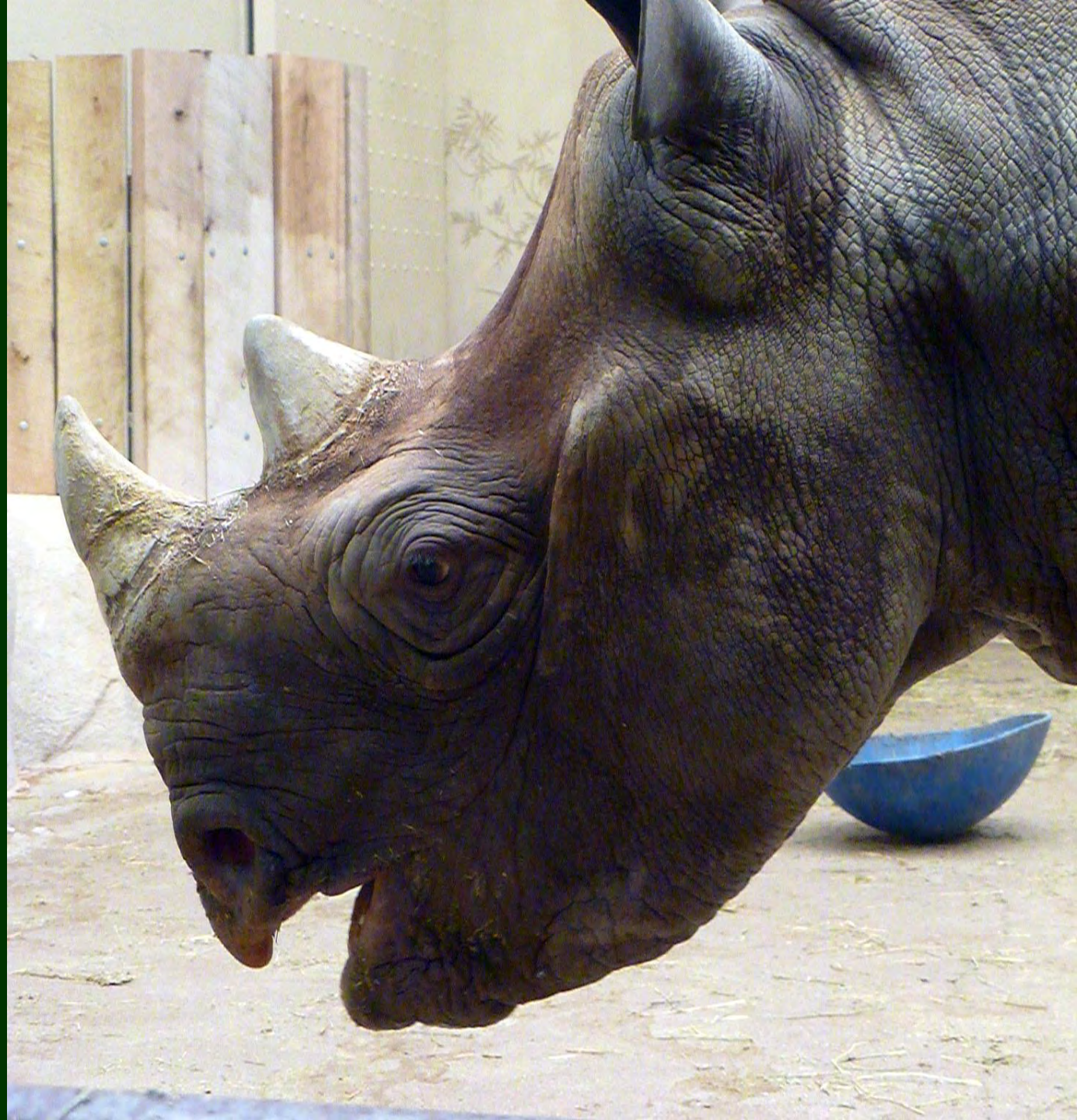
Solitary Pair Bond Small group Herd Fission-fusion community Other _____



Pachyderm House



Results



Visitor Demographics

Membership

- 54% Members

n=191

Gender

- 56% Female

n=200

Age

- 39% within 30-39 range
- 27% within 40-49 range

n=171

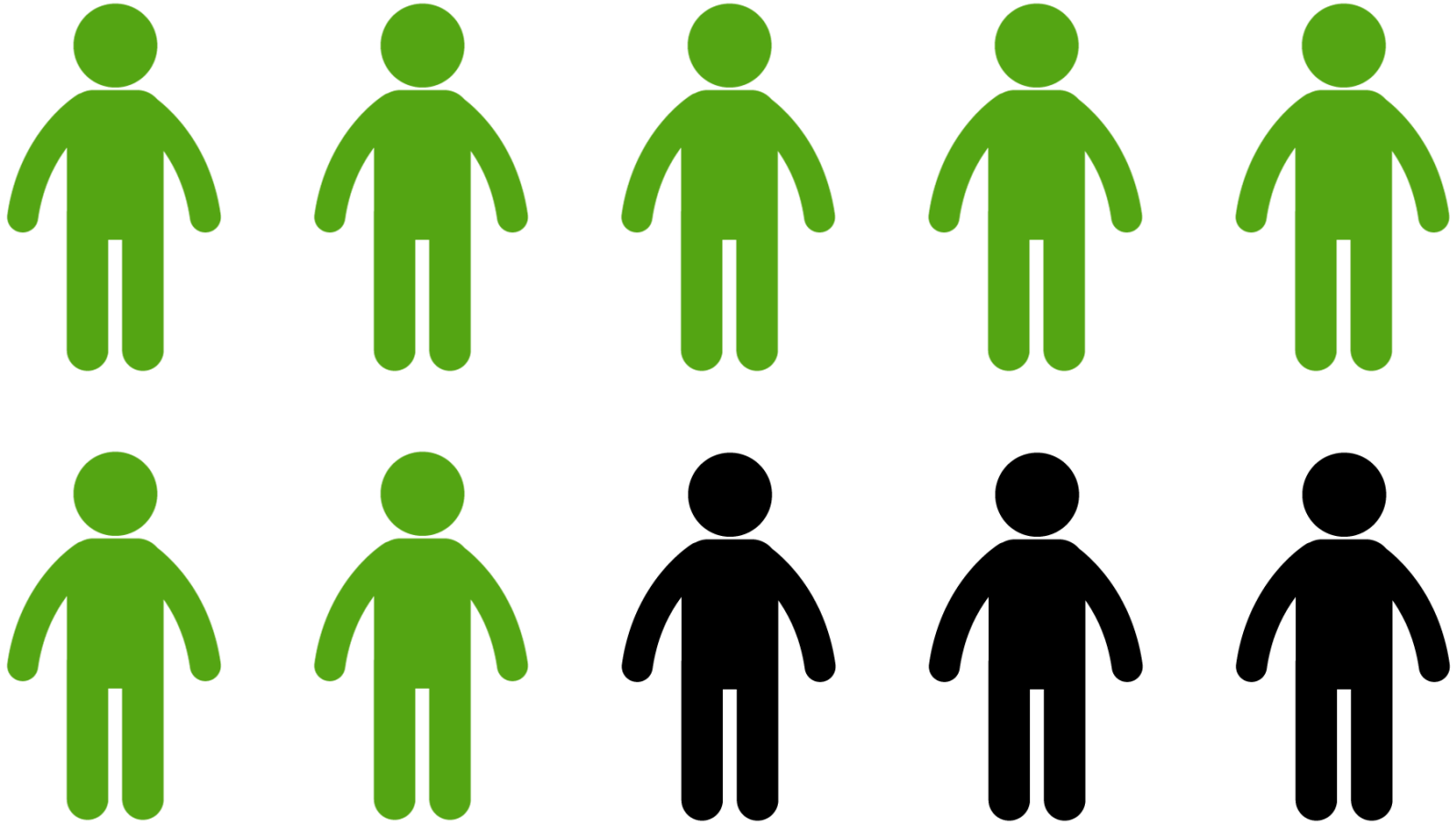
Ethnicity

- 83% Caucasian

n=171

86% completed most or all of the survey

70% of visitors think that black rhinoceros are social!



n=181

Black Rhino Activity

16% Inactive

- Not alert
- Alert

84% Active

- Moving around
- Eating
- Interacting
- Pacing
- Manipulating objects

Animal Concern: Solitude

The black rhino appears lonely.

47%
Agree

32%
Neutral

22%
Disagree

The black rhino doesn't need a companion.

63%
Disagree

27%
Neutral

10%
Agree

Animal Concern: Health

The black rhino appears healthy and well-fed.

87%
Agree

6%
Neutral

6%
Disagree

The black rhino appears sickly and malnourished.

87%
Disagree

5%
Neutral

7%
Agree

Animal Concern: Stress

The black rhino seems stressed by the presence of visitors.

10%
Agree

8%
Neutral

82%
Disagree

The black rhino seems unaffected by the presence of guests.

11%
Disagree

8%
Neutral

81%
Agree

Animal Concern: Space

The black rhino has adequate space.

44%
Agree

15%
Neutral

41%
Disagree

The black rhino needs more room.

18%
Disagree

19%
Neutral

63%
Agree

Animal Concern: Behavior

The black rhino's behavior differs within a zoo setting.

29%
Agree

55%
Neutral

16%
Disagree

The black rhino's behaviors are similar to those of wild rhinos.

26%
Disagree

62%
Neutral

12%
Agree

Animal Concern: Enrichment

The black rhino has enough toys and interactive features in its exhibit.

37%
Agree

20%
Neutral

43%
Disagree

The black rhino's environment lacks engaging and enriching stimuli.

28%
Disagree

17%
Neutral

55%
Agree

Emotional Responses

Rhino's Mood or Emotional State

20%
Negative
Descriptors

54% Bored

32% Lonely

19% Sad

n=185

Visitor's Mood or Emotional State

3%
Negative
Descriptors

**Sad for the
rhino**

**Concerned
about
space**

**Content,
but worried
he's sad**

n=179

How much did visiting the black rhinos influence your decision to come to the zoo today?



73%
Not at all

17%
Somewhat

10%
Very much so

n=174

Did you have an up-close encounter with a black rhino today?

30%
Not at all

23%
Somewhat

48%
Very much so

n=172

Did you make eye contact with a black rhino today?

39%
Not at all

16%
Somewhat

46%
Very much so

n=176

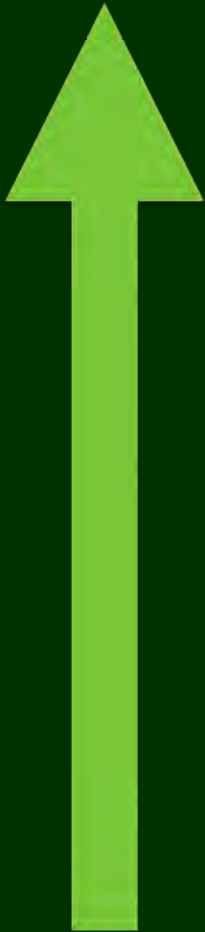
Visitor Comments

33% noted animal concerns

- Improve exhibits
 - More indoor space
 - Naturalistic
 - Increase outdoor access
 - Provide hiding places
- More animals

29% mentioned elephants

Social



Social Structure

The black rhino doesn't need a companion.

$$r_s(145) = -0.345, p = 0.000^{**}$$

The black rhino appears lonely.

$$r_s(144) = 0.186, p = 0.026^*$$

The black rhino seems stressed by the presence of visitors.

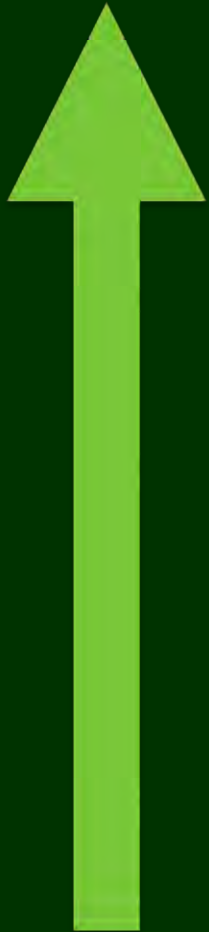
$$r_s(145) = 0.166, p = 0.046^*$$

Solitary

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Active



Inactive

Behavior

The black rhino appears lonely.

$$r(194) = -0.198, p = 0.006^{**}$$

The black rhino appears healthy and well-fed.

$$r(200) = 0.159, p = 0.024^*$$

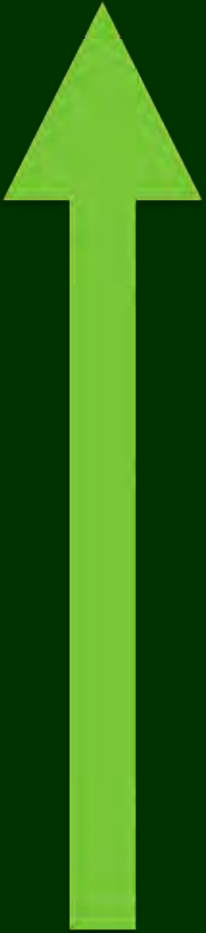
The black rhino is unaffected by the presence of visitors.

$$r(196) = -0.164, p = 0.022^*$$

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Very much
so



Not at all

Up-close Encounter

The black rhino appears healthy
and well-fed.

$$r(126) = 0.232, p = 0.009^{**}$$

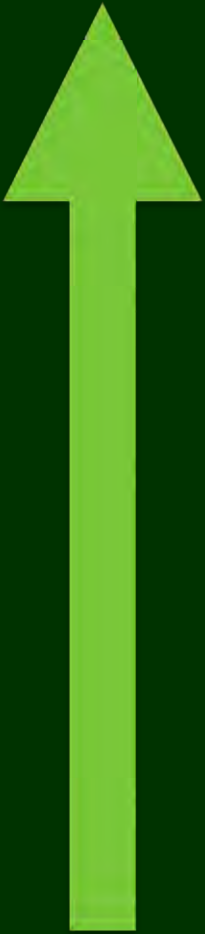
The black rhino's environment
lacks engaging and enriching
stimuli.

$$r(125) = -0.185, p = 0.039^*$$

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Very much
so



Not at all

Eye Contact

The black rhino appears healthy
and well-fed.

$$r(125) = 0.237, p = 0.008^{**}$$

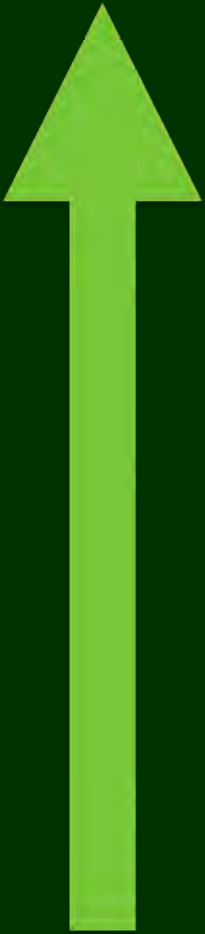
The black rhino has enough toys
and interactive features in its
exhibit.

$$r(122) = 0.272, p = 0.002^{**}$$

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Very much
so



Not at all

Eye Contact

The black rhino's environment lacks engaging and enriching stimuli.

$$r(124) = -0.259, p = 0.004^{**}$$

The black rhino doesn't need a companion.

$$r(123) = 0.180, p = 0.046^*$$

The black rhino has adequate space.

$$r(122) = 0.179, p = 0.049^*$$

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level



Conclusion



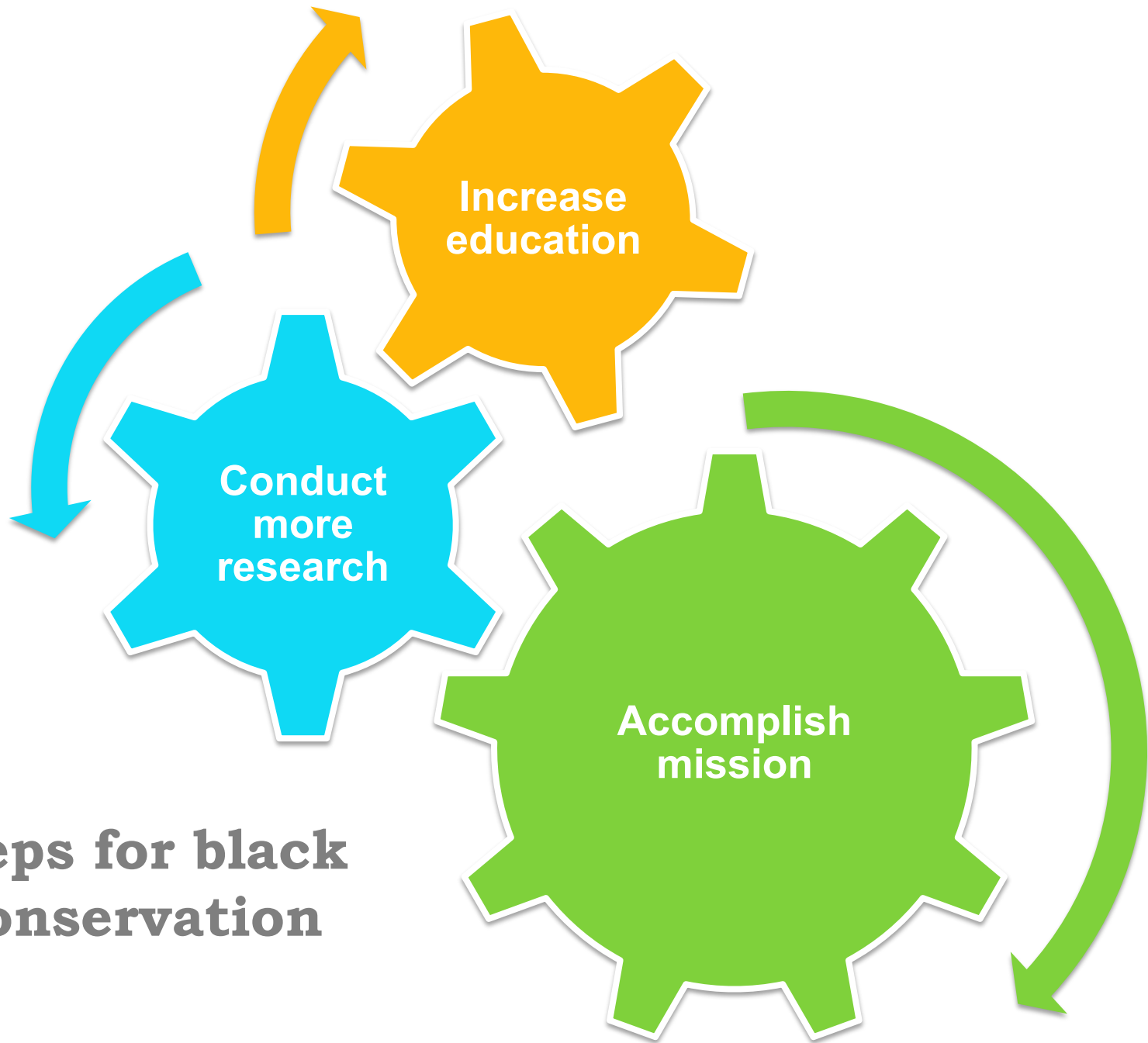
Summary

- Majority of guests are unaware of the black rhino's solitary social structure
 - More inclined to think black rhino is lonely and stressed



Summary

- Active black rhinos are seen as less lonely, less stressed, and healthier
- Up-close encounters and eye contact improve perception of the black rhino's welfare from the visitor's perspective



Next steps for black rhino conservation

Acknowledgements



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Questions?

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