

Local attitudes toward Amur tiger (*Panthera tigris altaica*) conservation in the Russian Far East

Anna. S. Mukhacheva, Eugenia V. Bragina, Dale G. Miquelle, Heidi E. Kretser, Vasilissa V. Derugina

Supplementary material

I. Table 2. Sample population parameters.

	Settlements			
	Vladivostok	Spassk-Dalnii	Kavalerovo	Terney + Plastun
Population size ¹	593034	44137	15381	8940
Sample size (# respondents)	386	131	201	317
Respondents' age				
18-25	5	15	38	53
26-35	110	23	39	77
36-45	96	43	35	73
46-55	65	35	34	55
>56	110	15	55	59
Gender				
F	168	71	102	152
M	218	60	99	165
Activity identifies with most				
Hunters	46	14	7	29
Not hunter	340	110	193	288

If a respondent ever saw a wild tiger				
Yes	65	18	43	128
No	319	112	158	189
Income size				
We do not have enough money for food	0	9	0	6
We have enough money to buy food but not for clothes and footwear	35	24	12	53
We have enough money for clothes and footwear but cannot buy major household appliances	148	39	153	187
We have enough money for major household appliances but we cannot buy a new car	164	39	36	58
We have enough money to buy a new car but cannot afford new apartments or house	37	13	0	11
We have enough money, could afford new housing if necessary	0	2	0	2
Income stability				
My income is stable and does not change much during a year	374	121	201	296
My income is not stable and depends on a season	10	10	0	12
Perceived socio-economic conditions, scaled 1 (low) to 5 (high), mean±SD				
Health care availability	3.25±0.99	3.42±1.08	2.37±0.98	1.94±0.91
Opportunities for recreation	3.8±0.95	2.8±1.09	3.03±0.95	2.39±1.17

Public transportation quality	3.3±0.93	3.82±0.93	3.25±1.07	2.73±1.16
Employment opportunities	3.24±0.91	2.1±0.93	1.6±0.8	2.07±0.99
Quality of pre-college education	3.25±0.91	4.11±0.73	3.1±0.93	2.99±0.99
Life prospects for young people	3.5±0.99	2.08±1.01	1.5±0.75	1.38±0.7

1 The Russian Census of 2010

II. Table 3. Model selection results for general linear models of opinion on tiger conservation in rural communities (n = 467) and trophy hunting of tigers if they pose a threat to people (n = 825) using BIC weights. The best 15 models are shown.

Model rank	Variables included in the model	Log likelihood	BIC	BIC weights	ΔBIC
Attitude toward tiger conservation in rural communities					
Global model	Gender, age, health care availability, opportunities for recreation, public transportation quality, quality of pre-college education, employment opportunities, opportunities for youth, respondent enjoys outdoor leisure time (Y/N), duration of current residency, income size, income stability, hunter/not hunter, respondent ever saw a wild tiger (Y/N)	-98.56	295.52	0.00	70.74
1	Gender, life prospects for young people	-102.00	224.78	0.69	0
2	Gender, age, life prospects for young people	-100.10	222.44	0.21	-2.34
3	Gender, age, life prospects for young people, public transportation quality	-99.76	230.26	0.01	5.48
4	Gender, age, life prospects for young people, health care availability	-99.95	230.62	0.01	5.84
5	Gender, age, life prospects for young people, income stability	-99.95	230.64	0.01	5.86
6	Gender, age, life prospects for young people, income size	-99.99	230.70	0.01	5.92
7	Gender, age, life prospects for young people, duration of current residency	-99.99	230.71	0.01	5.93
8	Gender, age, life prospects for young people, hunter/not hunter	-100.06	230.85	0.01	6.07

9	Gender, age, life prospects for young people, opportunities for recreation	-100.06	230.85	0.01	6.07
10	Gender, age, life prospects for young people, employment opportunities	-100.08	230.90	0.01	6.12
11	Gender, age, life prospects for young people, respondent enjoys outdoor leisure time	-100.09	230.90	0.01	6.12
12	Gender, age, life prospects for young people, quality of pre-college education	-100.09	230.92	0.01	6.14
13	Gender, age, public transportation quality, life prospects for young people, income size	-99.49		0.00	
			235.86		11.08
14	Gender, public transportation quality, life prospects for young people	-101.58	227.75	0.05	2.97
15	Gender, age, opportunities for recreation, public transportation quality, life prospects for young people	-99.63		0.00	
			236.13		11.35
Support for trophy hunting of dangerous for people tigers					
Global model	Attitude t/tiger conservation, urban/rural, gender, age, health care availability, opportunities for recreation, public transportation quality, quality of pre-college education, employment opportunities, opportunities for youth, if a respondent enjoys outdoor leisure time (Y/N), duration of current residency, income size, income stability, hunter/not hunter, if a respondent ever saw a wild tiger (Y/N)	-402.68		0.00	
			926.24		82.10
1	Quality of pre-college education, income size, hunter/not hunter	-408.64	844.14	0.67	0.00
2	Attitude t/tiger conservation, quality of pre-college education, income size, hunter/not hunter	-407.24		0.10	
			848.06		3.92

3	Opportunities for recreation, quality of pre-college education, income size, hunter/not hunter	-407.50	848.57	0.07	4.43
4	Attitude t/tiger conservation, opportunities for recreation, income size, hunter/not hunter	-407.61	848.80	0.07	4.65
5	Urban/rural, opportunities for recreation, income size, hunter/not hunter	-407.69	848.96	0.06	4.81
6	Attitude t/tiger conservation, urban/rural, opportunities for recreation, income size, hunter/not hunter	-406.08	852.46	0.01	8.32
7	Attitude t/tiger conservation, opportunities for recreation, quality of pre-college education, income size, hunter/not hunter	-406.25	852.79	0.01	8.65
8	Urban/rural, opportunities for recreation, employment opportunities, income size, hunter/not hunter	-406.63	853.56	0.01	9.42
9	Urban/rural, opportunities for recreation, quality of pre-college education, income size, hunter/not hunter	-406.64	853.57	0.01	9.43
10	Attitude t/tiger conservation, urban/rural, opportunities for recreation, quality of pre-college education, income size, hunter/not hunter	-405.13	857.27	0.00	13.12
11	Attitude t/tiger conservation, urban/rural, employment opportunities, opportunities for recreation, income size, hunter/not hunter	-405.14	857.29	0.00	13.14
12	Attitude t/tiger conservation, urban/rural, gender, opportunities for recreation, income size, hunter/not hunter	-405.37	857.76	0.00	13.61

13	Attitude t/tiger conservation, urban/rural, gender, opportunities for recreation, employment opportunities, income size, hunter/ not hunter	-404.38	862.48	0.00	18.34
14	Attitude t/tiger conservation, urban/rural, gender, quality of pre-college education, opportunities for recreation, income size, hunter/ not hunter	-404.59	862.90	0.00	18.75
15	Attitude t/tiger conservation, urban/rural, opportunities for recreation, quality of pre- college education, employment opportunities, income size, hunter/ not hunter	-404.61	862.94	0.00	18.80

II. Survey Instrument

**The study is supported by the Wildlife Conservation Society
(New York, USA)**

Autonomous Non-governmental Organization Wildlife Conservation Society
Address: 17a Aleutskaya Street, Apt 31, Vladivostok, Russia, 690061

Respondent #	Surveyrer #	Date	Month
Settlement		Survey Location	

Recruitment script: *Hello, my name is _____. I am conducting a survey on public attitudes on tiger conservation. This survey is anonymous. Would you consider answering a few questions? It should take no more than five minutes.*

1. How do you prefer to spend your leisure time (weekends, vacation, days off)?

1. Prefer to stay at home
2. Prefer to get out of the house and go to the city
3. Prefer to relax outside of town (e.g. forests, rivers or beaches)
4. Other _____

(RECORD THE ANSWER VERBATIM)

99. *(DO NOT READ OUTLOUD!!!)* Not sure

2. What is your assessment of your settlement's living conditions:

*(circle **one** answer per row):*

	Very bad	Bad	Satisfactory	Good	Excellent
2.1. Healthcare	1	2	3	4	5
2.2. Opportunities for leisure time	1	2	3	4	5
2.3. Transportation	1	2	3	4	5
2.4. K-12 education quality	1	2	3	4	5
2.5. Job opportunities	1	2	3	4	5
2.6. Life prospects for young people	1	2	3	4	5
	Very bad	Bad	Satisfactory	Good	Excellent

3. Which of the following best describes how you make use of nature when you spend time outdoors?

(circle up to three answers from the following choices):

1. Hiking, 'nature watching'
2. Fishing
3. Hunting
4. Collecting mushrooms, berries, edible/medicinal plants
5. I don't do any of the above – I rarely spend time in nature

6. Other _____

(RECORD THE ANSWER VERBATIM)

99. *(DO NOT READ OUTLOUD!!!)* Not sure

4. Wildlife conservation is receiving a lot of attention in Russia. In your opinion, which species should be protected?

(RECORD THE ANSWER VERBATIM)

5. Have you seen a live tiger?

1. No, never
2. Yes, in a zoo
3. Yes, in the wild
4. Other _____

(RECORD THE ANSWER VERBATIM)

99. *(DO NOT READ OUTLOUD!!!)* Not sure

6. How would you characterize a tiger?

(RECORD THE ANSWER VERBATIM)

If people don't know what to say, you can provide an example: "How would you characterize today? – Sunny... So then how would you characterize a tiger?"

7. In your opinion, is the Amur tiger in need of protection?

- | | | |
|------------------------------------|---------------|----------------------|
| 1. Yes, definitely |>>>..... | Go to question 7 (a) |
| 2. Probably |>>>..... | Go to question 7 (a) |
| 3. Probably not |>>>..... | Go to question 8 |
| 4. Definitely not |>>>..... | Go to question 8 |
| 99. Not sure (do not read outloud) |>>>..... | Go to question 8 |

7 (a). In your opinion, where should tigers be protected?

1. Throughout their entire range

2. Within protected areas (zapovedniks, national parks)

3. Other _____

(RECORD THE ANSWER VERBATIM)

99. (DO NOT READ OUTLOUD!!!) Not sure

8. Sometimes a hunter kills a tiger. In your opinion, what would be a hunter's reason(s) for doing so?

(circle up to two answers from the following choices):

1. For financial gain
2. A tiger makes an outstanding addition to any trophy hunter's collection
3. Tigers harm livestock and damage property
4. In the wild, tigers are dangerous to humans
5. Tigers compete with human hunters by eating ungulates

6. Other _____

(RECORD THE ANSWER VERBATIM)

99. (DO NOT READ OUT LOUD!!!) Not sure

9. Which of the following, in your opinion, could be key causes of tiger population decline?

(circle up to two answers from the following choices):

1. Human-caused habitat loss (from wildfires, logging etc.)
2. Ungulate population decline
3. Water pollution
4. Accidental human-caused tiger fatalities because of humans (e.g. road kills)
5. Poaching
6. Natural causes (disease, competition with other species, natural death)

7. Other _____

(RECORD THE ANSWER VERBATIM)

99. (DO NOT READ OUT LOUD!!!) Not sure

10. Some scientists believe that tiger numbers have grown high enough that it is now permissible to generate revenue from tiger hunting. Outfitting and safari businesses are common practices in other countries. In your opinion, is such hunting for tigers acceptable?

(one answer):

1. Tiger hunting is absolutely unacceptable
2. The idea of tiger hunting is only acceptable in the context of killing individual tigers that pose a threat to humans
3. Tiger hunting is only acceptable if the revenue will be spent on tiger conservation
4. Absolutely, I fully support the idea of tiger hunting
5. We should make 'tiger' money by other means:

(RECORD IDEAS ON WAYS TO MAKE 'TIGER MONEY,' VERBATIM)

99. (DO NOT READ OUTLOUD!!!) Not sure

11. In your opinion, what are the most effective ways to protect and increase wildlife abundance?

(circle up to two answers from the following choices):

1. Stricter criminal penalties for poaching
2. Stricter enforcement of logging regulations
3. Increase the size of protected areas
4. To end poaching, we need to first improve the quality of life in rural communities.

5. Other _____

(RECORD THE ANSWER VERBATIM)

99. *(DO NOT READ OUT LOUD!!!)* Not sure

12. Your age:

1	2	3	4	5	6	7
14 – 17	18 – 25	26 – 35	36 – 45	46 – 55	56 – 65	>66

13. Sex

(note without asking)

1. Male
2. Female

14. Where do you currently live?

1. Vladivostok
2. Terney or Plastun
3. Kavaleroovo
4. Spassk-Dalnii

15. How long have you been living in your settlement?

1	2	3
0 – 5 years	6 – 10 years	> 10 years

16. If you are employed, in which sector do you currently work?

(one answer):

1.	Agriculture
2.	Forestry (Timber harvesting and processing)
3.	Hunter
4.	Conservation (protected area staff)
5.	Industry
6.	Construction, transportation, communication
7.	Public administration (federal, local)
8.	Culture, information

20. Which of the following best describes your family's financial situation?

(one answer):

1.	We don't have enough money for food
2.	We have enough money for food, but not for clothes and footwear
3.	We have enough money for clothes and footwear, but we can't buy major household appliances
4.	We have enough money for major household appliances, but we can't buy a new car
5.	We have enough money to buy a new car, but we can't afford a new apartment or house
6.	We have enough money, we could afford new housing if necessary
7.	<i>(DO NOT READ OUTLOUD!!!)</i> Not sure

21. How would you assess your income: is it stable or not?

1. My income is stable and does not change much during the year
2. My income is not stable and depends on the season
3. Other _____

(RECORD THE ANSWER VERBATIM)

99. *(DO NOT READ OUT LOUD!!!)* Not sure