

Supplementary Materials

Table 1. Animal and human rabies cases in Amur region (ARR) for Figure 1

N	Spices	Period	Date	Coordinates		Distance from case number 1 (km)	Median by periods (km)
				E	N		
1	livestock	1	10/11/2018	128.84	49.77	0	23.8 (7-107.2)
2	horse	1	24/11/2018	128.65	49.62	21.5	
3	red fox	1	21/11/2018	128.66	49.77	13	
4	raccoon dog	1	10/12/2018	128.65	49.62	21.5	
5	red fox	1	21/11/2018	128.53	49.90	27	
6	red fox	1	21/11/2018	128.70	49.84	12.6	
7	red fox	1	21/11/2018	128.70	49.84	12.6	
8	red fox	1	21/11/2018	128.79	49.58	21.5	
9	red fox	1	21/11/2018	128.74	49.85	11.3	
10	red fox	1	21/11/2018	128.78	49.68	10.9	
11	livestock	1	06/12/2018	128.90	49.82	7	
12	raccoon dog	1	21/11/2018	128.65	49.62	21.6	
13	red fox	1	10/12/2018	128.80	50.16	43.5	
14	raccoon dog	1	10/12/2018	128.37	49.83	34.8	
15	red fox	1	10/12/2018	128.37	49.91	37.5	
16	red fox	1	10/12/2018	129.17	49.97	32.4	
17	wolf	1	14/03/2019	128.53	49.91	26.6	
18	wolf	1	18/03/2019	129.00	49.46	36.5	
19	raccoon dog	1	27/03/2019	128.20	49.89	47.8	
20	wolf	1	27/03/2019	128.77	49.60	19.6	
21	red fox	1	28/03/2019	128.71	50.73	107.2	
22	red fox	1	28/03/2019	129.17	49.75	23.8	
23	red fox	1	19/04/2019	128.56	50.34	66.5	
24	dog	1	25/04/2019	129.41	49.66	42.9	
25	livestock	2	07/11/2019	129.06	50.60	93.5	
26	red fox	2	14/11/2019	129.05	50.62	95.6	

27	red fox	2	14/11/2019	129.29	50.79	117.8	112.4 (77.6- 128.4)
28	wolf	2	06/02/2020	129.31	50.89	128.9	
29	red fox	2	11/03/2020	128.71	50.73	107.1	
30	wolf	2	07/04/2020	129.47	50.85	128.1	
31	red fox	2	19/05/2020	127.83	50.02	77.6	
32	dog	2	04/06/2020	128.61	50.89	125.6	
33	livestock	3	15/01/2021	130.37	49.47	115.6	150.1 (57.1- 192.4)
34	livestock	3	22/01/2021	130.37	49.47	115.6	
35	red fox	3	11/02/2021	127.29	50.75	155.1	
36	dog	3	15/03/2021	130.23	49.38	109.6	
37	red fox	3	15/03/2021	128.25	51.46	192.4	
38	dog	3	25/03/2021	128.13	51.37	184.7	
39	dog	3	06/04/2021	128.13	51.37	184.7	
40	dog	3	08/04/2021	89.838	55.96	122.5	
41	dog	3	15/05/2021	128.13	51.37	184.7	
42	dog	3	02/06/2021	128.38	51.09	150.1	
43	red fox	4	16/08/2021	128.79	50.91	126.7	130.7 (57.1- 121.4)
44	raccoon dog	4	19/08/2021	128.85	50.87	122.2	
45	livestock	4	01/10/2021	128.57	51.47	190.3	
46	livestock	4	11/10/2021	127.98	51.40	191.4	
47	wolf	4	22/10/2021	128.50	51.14	154.3	
48	dog	4	24/02/2022	128.47	50.92	130.7	
49	livestock	4	08/02/2022	128.53	50.24	57.1	
50	human	3	2020	129.44	50.11	57.1	

Table 2. Arctic-like rabies virus isolates from Russia used for genetic analysis and mapping

No.	Isolate number	GenBank number	Species	Location			Year
				coordinates, decimal degrees		region	
				E	N		

1	2981/2018/Amur	MN384722	cow	128.78	49.68	ARR	2018
2	Amur8853 rd	ON246188	raccoon dog	128.37	49.83		2018
3	Amur8855 f	ON246189	red fox	129.17	49.97		2018
4	Amur8854 rd	ON526986	raccoon dog	128.65	49.62		2018
5	Amur8856 f	ON526987	red fox	128.80	50.16		2018
6	Amur8857f	ON526988	red fox	128.37	49.91		2018
7	Amur8858hor	ON526989	horse	128.65	49.62		2018
8	Amur8944w	ON526990	wolf	129.00	49.46		2019
9	Amur8946w	ON526991	wolf	128.77	49.60		2019
10	857 r	AY352458	raccoon dog	132.62	47.93	JAR	1980
11	RV303	KY86013	raccoon dog	132.74	44.68	PRR	1979
12	304c	AY352459	steep fox	114.82	50.80	TBR	1977
13	994 dog	EF611868	dog	113.50	52.00	TBR	1980
14	RV304	AY352459	human	132.55	48.47	JAR	1988

Table 3. Animal rabies cases in the Jewish Autonomous Region (JAR), the Khabarovsk Administrative Region (KHR), and the Primorskiy region (PRR) for Figure 3

N	Species	Year	Coordinates, decimal degrees		Region
			E	N	
1	dog	2013	131.48	43.18	PRR
2	bear	2014	131.95	43.64	PRR
1	red fox	2018	135.12	48.45	KHR
2	red fox	2018	135.22	48.59	KHR
3	red fox	2018	135.19	48.48	KHR
4	red fox	2018	135.27	48.48	KHR
5	NA	2018	135.19	48.53	KHR

6	NA	2018	135.30	48.55	KHR
7	NA	2018	135.17	48.58	KHR
8	NA	2018	135.28	48.46	KHR
9	NA	2018	135.22	48.49	KHR
10	NA	2018	135.36	48.49	KHR
11	NA	2018	135.37	48.47	KHR
12	NA	2018	135.25	48.49	KHR
13	NA	2018	135.31	48.47	KHR
14	NA	2018	135.26	48.51	KHR
15	red fox	2018	136.92	50.53	KHR
16	NA	2018	136.96	50.45	KHR
17	NA	2019	136.87	50.40	KHR
18	NA	2019	136.94	50.37	KHR
19	NA	2019	135.05	48.61	KHR
20	NA	2019	135.05	48.62	KHR
21	NA	2019	135.08	48.62	KHR
22	NA	2019	135.13	48.61	KHR
23	NA	2019	135.08	48.61	KHR
24	NA	2019	135.10	48.62	KHR
1	dog	2017	133.79	48.58	JAR
2	red fox	2018	134.60	48.59	JAR
3	dog	2018	134.60	48.55	JAR
4	wolf	2018	133.17	48.40	JAR
5	dog	2018	132.93	48.76	JAR
6	red fox	2018	134.79	48.55	JAR
7	red fox	2018	133.05	48.57	JAR
8	red fox	2018	134.60	48.55	JAR
9	dog	2019	133.05	48.57	JAR

NA: data not available

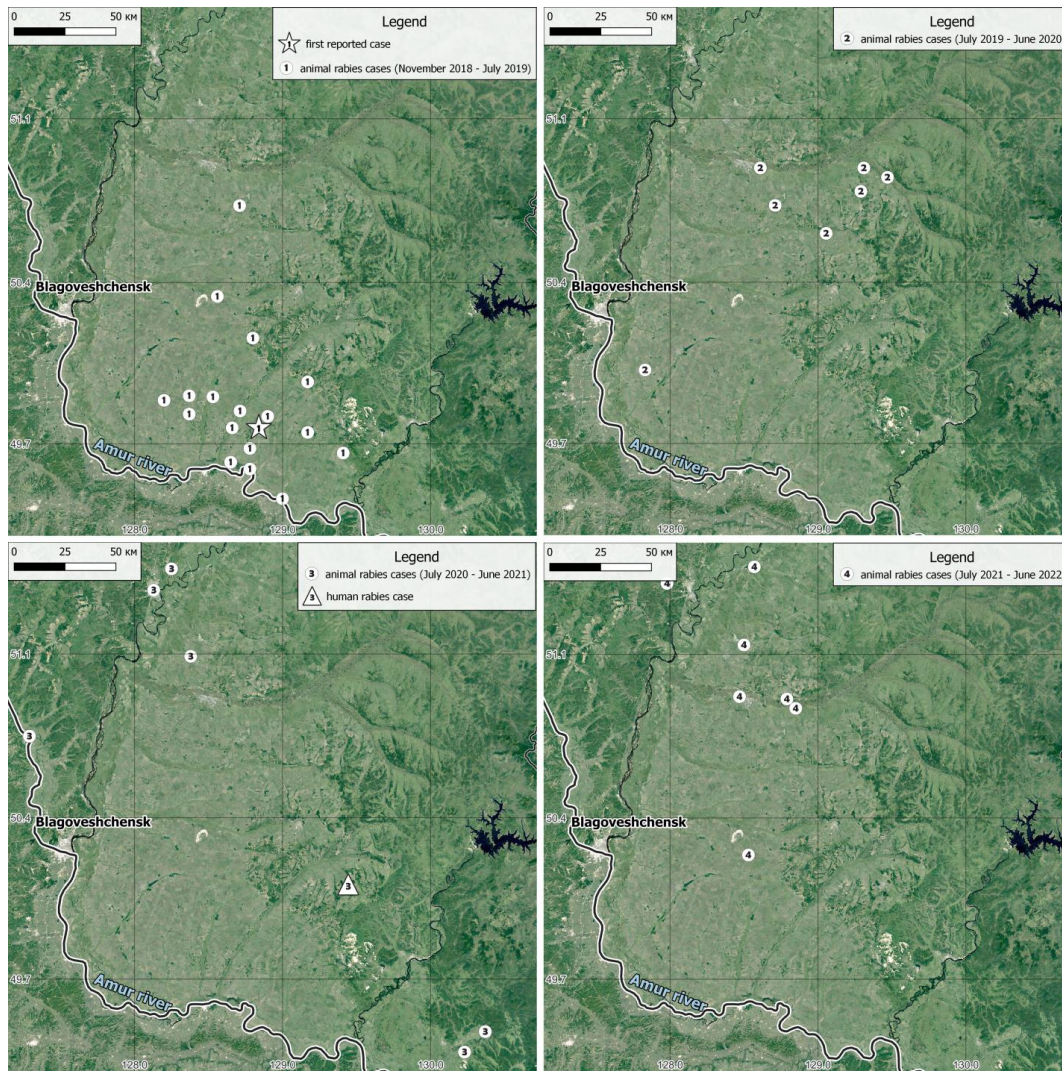


Figure 1. Spatial distribution of rabies in the Amur Region of Russia during 2018-2022 year by year. Numbers indicate animal rabies cases for specific periods (see legends on the maps). The black line: borders between countries along Amur river.