This report will be made public. If it contains confidential or sensitive information, please also provide a revised report for sharing with the public.

Section I. Project Information	
Project Title: Protecting and connecting Russia's Amur leopards	
Grantee Organisation: Wildlife Conservation Society	
Location of project: As a reference point, Land of the Leopard National Park (LLNP) is approximately 43.100 N 131.200 E.	
Size of project area (if appropriate): Roughly 3,100 km^2 (Land of the Leopard National Park and Ussurisk Reserve).	**No of tigers and / or Amur leopards in project area, giving evidence & source:** **<u>1. Amur leopard</u>** (*Panthera pardus orientalis)*. Amur leopards occupy habitats in the southern Russian Far East, in Jilin and Heilongjiang provinces of China and, possibly, in North Korea. Amur leopards are listed as Critically Endangered on the IUCN's Red List of Threatened Species. In 2024, LLNP estimated that **roughly 130 individuals reside in Russia**. Another 30 individuals have been reported in Northeast China Tiger and Leopard National Park, directly adjacent to LLNP, though it is unclear what number of these live across the international border and are therefore counted by both countries.

Partners: *(Please give details of partners, including communities, academic institutions etc. for this project.*

Since 2016, the Wildlife Conservation Society's work in Russia has been a collaboration between the WCS Global Conservation Program and the independent, Russian-registered NGO "ANO WCS". As this proposal was developed by staff of both WCS Global and ANO WCS, we hereafter use "we" to describe our joint efforts.

Given our decades of investment in Amur leopard conservation in Russia, we maintain broad support among government agencies involved in wildlife conservation. This includes protected areas and hunting leases in Russia where Amur leopards occur. We collaborate with all major protected areas across these species' ranges in Russia, and we partner with several private hunting leases as well. Moreover, we are supported by the Russian NGO "Far Eastern Leopard," a functional body of the Russian government's efforts to save Amur leopards. This NGO requested that we begin monitoring Amur leopards in Ussurisk Reserve and funds much of our work to do so (see matching funding in the budget), thanks to their trust in our expertise and knowledge. We are also actively seeking the support of "Far Eastern Leopard" as well as Land of the Leopard National Park (LLNP) to improve connectivity of Amur leopards across a major development corridor.

We highlight that our partnerships and supporters remain diverse in Russia. We are the only entity in Amur leopard range that receives support and trust from private, governmental, and non-governmental organizations.
Project Contact Name: (*main contact via email):* Scott Waller, MS
Email: swaller@wcs.org
Actual start date of project: *(if different from 1st February 2025)*
Reporting period: February 1, 2025 - June 30, 2025

Section II. Project Progress

Summary of progress for the first 6 months: *(please provide a summary for use in our communication materials)*

With the continued support of the WildCats Conservation Alliance (WCCA), we made considerable progress in our efforts to protect and connect Amur leopards in the Russian Far East. Our collaborative population monitoring efforts have proceeded smoothly, and we are positioned to obtain our 11th year of population size estimates in northern Land of the Leopard National Park and adjacent hunting leases. We also successfully led a second year of monitoring in Ussurisk Reserve and the surrounding territory. Finally, we made important field measurements of crossing infrastructure along highway A-370 that separates leopards in the Changbai Mountains to the west (including Land of the Leopard National Park) with individuals and suitable habitat to the east in the Southern Sikhote-Alin Mountains (including Ussurisk Reserve). We deployed 10 camera traps at six culverts and bridges, and are now carefully monitoring any signs of use by leopards and their prey. This will form a key scientific basis for improvements to these crossings that can facilitate their use by wildlife. We look forward to further progress on all activities in the next reporting period and thank WCCA for their steadfast support along the way.

Details of activities and results to date: *(Please give details of progress made towards the objectives & outputs of your Logframe, and activities included in your Workplan. Please add any relevant charts, maps and images.*

Objective 1: Continue Amur leopard monitoring in LLNP

Activity 1.1. Deploy and collect cameras in LLNP

In January 2025, we deployed 138 camera traps at 66 locations spanning roughly 750 km^2 across northern Land of the Leopard National Park and the adjacent Nezhinoe Naval Hunting Lease. After a 90-day period had passed, all cameras were retrieved from the forest. Only two two cameras were stolen this year from a single location, leaving us with working data from the remaining 65 locations.

Our team is now busy reviewing the 330,767 photographs for all detections of leopards and their prey. We are on schedule to have this data processed and produce updated estimates of population size by the time of our final report. Last year we recorded the highest densities of leopards since we began intensive monitoring in 2015. In fact, as far as we know, these are

the highest densities ever recovered in Russia. We are eager to see how the recovery of leopards has continued into this year.
Logframe targets: 60% of cameras placed in the forest by Month 1 [achieved]; 100% of cameras actively collecting data by month 3 [achieved]; 100% of cameras collected by months 5-6 [achieved]. Remaining indicators on schedule.

Objective 2: Collect baseline data on wildlife connectivity across the Razdolnaya development corridor

Activity 2.1. Collect baseline data on current wildlife crossing characteristics

We began this activity immediately in February 2025. Our staff identified 10 bridges and culverts (together, "crossings"; **Figure 1**) along a 16 km stretch of highway between the towns of Razdolnaya and the southern outskirts of the city of Ussurisk. This stretch spans the most intact forests and least amount of human development along a major highway that connects the cities of Vladivostok and Ussurisk and is therefore the most likely place for leopards to cross. So far, our staff have measured key characteristics of 6 of the 10 crossings (the same where we deployed cameras; see *Activity 2.2* below). Openness indices – a simple indicator of how open or enclosed a crossing is – ranged from 0.09 (small culverts) to 33.75 (large bridge). Distances from crossing structures to vegetative cover ranged from 15-57 m. Strategic fencing along the highway can guide wildlife to the safe crossings (and also prevent them from crossing the road where they are at risk of being hit by vehicle traffic), but no

Figure 1. A bridge along highway A-370 between the cities of Vladivostok and Ussurisk, Russian Far East. Such a crossing has a very high openness rating compared to a small, enclosed culvert. Photo ©ANO-WCS.

fences were found to facilitate such crossing use by wildlife. In July and August, we plan to take measurements at the remaining four crossings.

In the context of leopard connectivity, the four northernmost crossings are the most likely to facilitate big cat movements, as they are closest to the last strip of forest that spans the Razdolnaya River (**Figure 2**). Importantly, all of these crossings were built for maintaining the flow of rivers, not necessarily for wildlife use. Already, several interventions could increase the chances of leopards using these crossings, including fence construction to guide wildlife movements, increased vegetative cover, and installation of more natural substrates (instead of the bare riprap and concrete currently in place).
Logframe targets: description of crossing characteristics for wildlife [6 of 10 complete].

Figure 2. Satellite map of the key corridor identified by Miquelle et al. (2015; dashed outline), with the northeast border of Land of the Leopard National Park in light green. Black circles indicate the locations of bridges and culverts that serve as potential crossing points for big cats and their prey. Additional cameras were deployed in the larger corridor. Relative abundance indices (RAIs) for vehicle and foot traffic ("human activity"), as well as any ungulate detections, are shown by the colored bubbles.

Activity 2.2. Deploy and monitor year-round cameras at crossing infrastructure

Starting in March 2025, our team began deploying camera traps at crossings along the highway and near the core corridor (**Figure 2**, above). After several discussions, we decided it was necessary to camouflage our camera traps, otherwise they would certainly be stolen. This proved exceedingly difficult, as human use at many of these crossings is high. Because of this, we decided to exclude four crossings to the south, as there was simply nowhere to place cameras where they would not be obvious. (We plan to use funds from another donor to build "track beds", wide strips of sand that will record tracks of wildlife, and which will be checked 1-2 times per week).

At the other six crossings, we deployed 1-3 cameras at strategic points to capture wildlife that approach and/or use the crossings, for a total of 10 cameras. The detections of human activity and leopard prey from mid-March to end of May 2025 are shown in **Figure 3**, while the summary relative abundances at each camera are shown in **Figure 2** above.

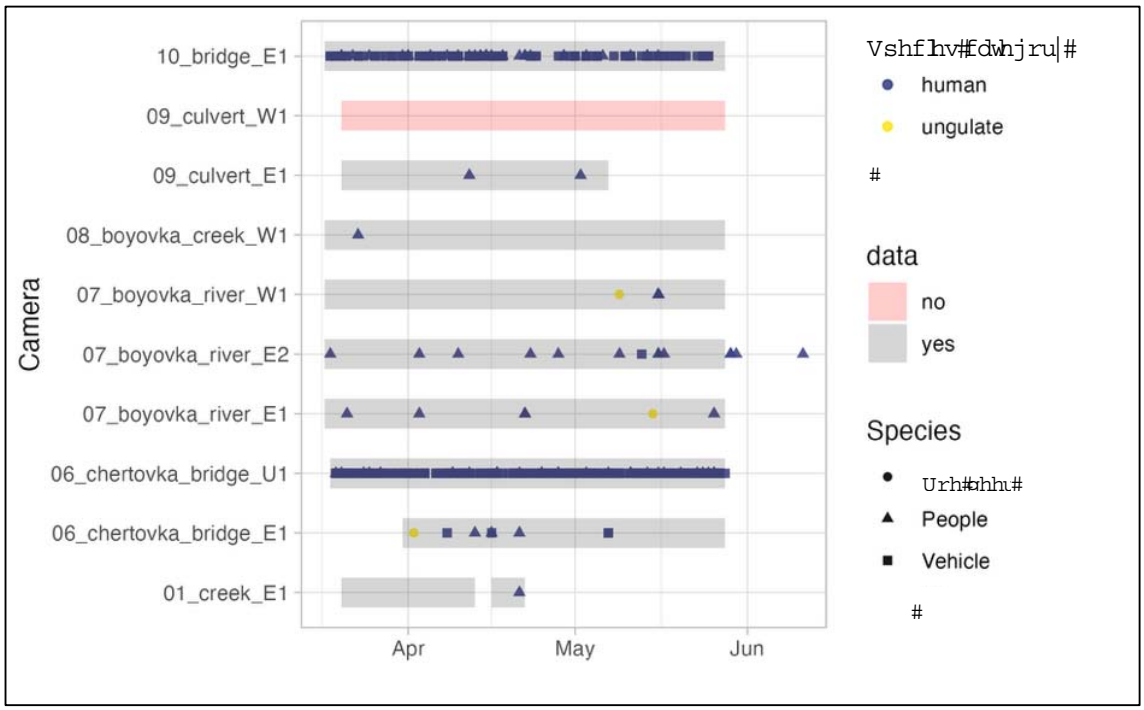

Figure 3. Detections of humans and ungulates at each of the 10 camera traps placed at culverts and bridges along highway A-370 in the Russian Far East. Detection data are shown from mid-March to end of May. Camera "09_culvert_W1" unfortunately malfunctioned during this period.

Several important patterns are already clear: first, while bridges have very high openness indices (and therefore theoretically are more attractive to wildlife), two of them have roads underneath that are heavily used by humans, and are therefore less likely to be used by wildlife. Fortunately, three of the four promising crossings to the north have very little human traffic. This does not mean that the large mammals of interest use them – we only captured three detections of roe deer, and all of these were at cameras at the forest edge, not at the crossing itself. Unsurprisingly, no leopards were detected. We plan to monitor these cameras all year for a complete picture of any seasonal differences in detections, and look forward to sharing any new findings in our final report.
Logframe target: cameras active at crossings along Highway A-370 [10 active cameras; achieved].

Objective 3: Continue monitoring leopards around Ussurisk Reserve

Activity 3.1. Deploy and collect cameras in and around Ussurisk Reserve

At the end of 2024, we deployed 138 camera traps at 67 locations in Ussurisk Reserve and surrounding hunting leases for a second year of population monitoring of leopards in the southern Sikhote-Alin Mountains. We unfortunately lost eight cameras (four locations) to theft despite our efforts to camouflage each unit. Once cameras were retrieved in Spring 2025, our staff immediately began sorting through images in searching of leopards and their

prey. This activity is on schedule and we will have updated population density estimates by the year's end.

While we need to finalize data processing, we can report now that neither the female leopard reintroduced to Ussurisk Reserve in 2023 nor the wild male detected in early 2024 were captured by our camera traps this year. This does not necessarily mean that they are gone: years of monitoring have taught us that sometimes leopards can go years without being detected, then suddenly reappear. Such is the nature of imperfect detection. Still, we are concerned for the fate of these individuals and are therefore keeping seven sites (13 camera traps) active year-round in the hunting lease in which these leopards were detected last. We will be sure to provide any updates in our final report to WCCA.
Logframe targets: cameras placed, active, and collected by Months 4-5 [achieved]. Data analysis on schedule.

Give details of any obstacles to success that the project has encountered over the last 6 months.

(Please provide detailed examples, explain what impact these will have on the project results and the changes to the budget and timetable of project activities)

In our corridor work, getting robust data on wildlife use of highway crossings has proven to be difficult. Without camouflage, camera theft would be all but guaranteed. This has seriously restricted where we can place cameras, and therefore what places we can actually monitor wildlife use. Field staff of ANO WCS did a wonderful job of making the best out of a challenging situation, and we are confident that the cameras we did deploy will be able to document wildlife use at key areas year-round with drastically reduced chances of theft. The resulting data will allow us to justify investments in improving these crossing structures for wildlife, such as through fencing, revegetation, and naturalization, and to monitor the changes in wildlife use that result.

Budget: Is the spending on target? If not, please give details and provide an updated budget sheet.

N/A

Media: Please provide a list of recent publications and media both local and national which mentions the work funded by this project and/or mentions WildCats Conservation Alliance.

A short article was published on Amur leopard recovery in Russia by *Mongabay* on July 22, 2025. The article included several quotes from Aleksandr Rybin, the large carnivore specialist with our key partner organization in Russia, ANO WCS.

https://news.mongabay.com/short-article/2025/07/amur-leopards-once-nearly-extinct-are-making-a-comeback-in-far-east-asia/

WildCats Conservation Alliance asks for at least 5 relevant high-resolution jpeg files of images of the project activities during this time period.

Please see the five images attached with this report.