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: Big cat connectivity across the Suifenhe Expressway

Grantee Organisation: Wildlife Conservation Society

Location of project:
The city of Suifenhe is located at 44.39982° N, 131.14775° E in Heilongjiang Province, northeast China.

Size of project area (if appropriate): The length of the G10 highway in our area of interest is roughly 57 km.	**No of tigers and / or Amur leopards in project area, giving evidence & source:** The number of Amur tigers and Amur leopards near the Suifenhe Expressway is unknown. A recent paper by Liu et al. (2026) indicates at least four official records of Amur tigers in the Border Range (north of the Expressway) from 2016-2025 (Figure 1 in the article), though the source of this data is unknown. To the south in Northeast China Tiger and Leopard National Park (NCTLNP), where most Amur tigers and leopards exist in China today, the national park reported a 2026 estimate of 115 Amur leopards within NCTLNP, 27 of which were also observed in neighboring Land of the Leopard National Park, Russia. They also reported 72 Amur tigers within the park, 21 of which were found in both countries. Liu, Z., Qi, J., Sun, S., Cheng, W., Anna, Y., & Jiang, G. 2026. Amur tiger (Panthera tigrie [sic] altaica) conservation chanlleges [sic] and strategies in China. *Frontiers in Conservation Science* 7: 1814831. https://doi.org/10.3389/fcosc.2026.1814831 News article on Amur tiger and leopard population size: https://leopard-land.ru/about/news/1710

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

Professor Wang Yun, Chinese Academy of Transportation Sciences (CATS). CATS is a comprehensive scientific research institution under the Ministry of Transport of China, primarily conducting fundamental, forward-looking, and public welfare research, as well as technical consultation and services for government authorities and the transportation industry. It serves as a key force supporting the ministry's scientific decision-making. Its research achievements in transportation development, policies, regulations, and standards have been widely adopted by government departments.

Dr. Ying Li, Northeast Tiger and Leopard National Park Research Institute at Yanbian University. The NCTLNP Research Institute, based at Yanbian University, is a leading research institution located at the core distribution area of Amur tigers and leopards in northeast China. As a local university deeply embedded in the transboundary landscape of China, Russia, and North Korea, Yanbian University provides unique geographic and scientific advantages for long-term wildlife monitoring, ecological research, and conservation practice.

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Actual start date of project: June 1, 2026
Reporting period: June 1, 2026 – September 30, 2026

Section II. Project Progress

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

Thanks to the support of the WildCats Conservation Alliance, impressive progress on this new project was made during its first four months. With decades of experience in road ecology, the Chinese Academy of Transportation Sciences (CATS) kicked off the project by beginning field work along the Suifenhe Expressway, a major highway and development corridor that poses a major barrier to Amur tigers and leopards dispersing north from Northeast China Tiger and Leopard National Park. The team completed initial surveys of a 57-km stretch of the expressway, identifying seven crossing structures (bridges, culverts, and an overpass road) that offer varying levels of connectivity support to these big cats. To better understand current levels of wildlife use, CATS deployed 36 camera traps at the crossing structures and in surrounding forests. Already, these cameras have documented high levels of roe deer, as well as fewer detections of sika deer and wild boar, suggesting a prey base may already exist that can support tigers and leopards moving through the region. These cameras will be kept active year-round to develop a stronger baseline understanding of how wildlife interact with the highway and associated human use. The CATS team has also already finished initial analyses of broader tiger and leopard landscape connectivity – key to identifying areas along the Suifenhe Expressway that should be prioritized for conservation management – and are refining the models now. We are excited for the coming months, which will include community surveys to understand attitudes towards connectivity conservation, as well as extensive snow track surveys to further research levels of use of this region by Amur tigers, leopards, and their prey.

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: Baseline data on Suifenhe Expressway

Activity 1.1. Survey existing crossings

The CATS field team completed this activity during two site visits: first from May 22-23, 2026 (shortly before the official start of this award), and then during a second visit from August 13-19, 2026. The survey team obtained permission and was accompanied by the Suifenhe Expressway Traffic Police. As explained in our proposal, eight potential safe crossing sites (i.e., bridges, culverts, and overpasses) were identified along a roughly 57-km stretch of the expressway. One of these had a large fence across the entire opening, and so was excluded from further assessment.

At the remaining seven structures, the field team measured the dimensions of the crossing structures themselves. Then, they conducted a qualitative assessment of the "permeability" of each structure, considering the amount of undisturbed forest nearby, apparent levels of human use, and

degree of human development. In summary, the six underpasses consist of two very large bridges (each at least 200 m wide), and four additional, much smaller underpasses. Both large bridges are also located in places with excellent vegetative cover and with little sign of human disturbance (e.g., **Figure 1a, 1b, 1c**). The remaining underpasses were located in places with varying permeability based on the presence of roads and railways and human useA small overpass was also identified, serving as a local, rural road. While human use is expected to be low, it features no noise reduction features or natural cover, and so is unlikely to serve as an effective overpass for tigers, leopards, or their prey. These assessments will be important at later stages of this project, when we analyse the drivers of crossing rates of Amur tigers, leopards, and prey observed by camera traps and snow track surveys.

Logframe targets: summary of crossing structures included in report on expressway by end of award [site visits completed; report not complete but on schedule].

Activity 1.2. Analyse traffic data

The CATS team is in contact with the local transportation authority and is on schedule to analyse this data between November 2026 and January 2027.

Logframe targets: traffic data obtained and analysed by end 2026 [ongoing and on schedule].

Activity 1.3. Local community surveys

Dr. Ying Li from Yanbian University is planning to conduct a community survey between November 2026 and January 2027, which is aligned with our schedule in the proposal.

Logframe targets: pilot study and subsequent survey and summary of community attitudes [planned for November 2026 to January 2027; on schedule].

Objective 2: Survey tiger, leopard, prey crossing behaviour

Activity 2.1. Cameras and track beds at crossings

The team of specialists from CATS deployed one or two infrared cameras inside each of the seven crossing structures. For three selected crossing sites, 400–600 meter transects were set up on both sides of the highway perpendicular to the expressway, with infrared cameras installed at 100-meter intervals. In total, 36 infrared cameras were deployed, including 26 cameras in May and 10 additional cameras in August.

During the first three months of research, seven mammal species were recorded within 1000 meters of the Suifenhe Expressway. Ranked by number of independent detections: roe deer (228), sika deer (18), leopard cat (9), Asian badger (5), wild boar (3), Asiatic black bear (2) and red fox (1). Notably, roe deer and leopard cats were captured crossing the expressway via culverts. The local authorities responsible for expressway operation also informed CATS that road mortality of roe deer and leopard cats have been recorded over the past three years, but no images or records of Amur tigers or Amur leopards have been documented along the expressway. The camera traps also captured frequent images of human activity, including livestock grazing, farmland operations, road construction and other disturbances. CATS is working to further analyse this camera data for a more complete understanding of current levels of wildlife and human use in the Suifenhe Corridor, with technical support of WCS. We look forward to sharing more results with WCCA in the final report.

The field team additionally constructed preliminary track beds at two culverts to test the methodology. However, due to especially heavy rainfall this summer, it was practically impossible to identify the species of tracks as evidence of wildlife use of crossing structures (**Figure 1a**). As such, it

was decided this method is not suitable for our study area, and all future efforts to document wildlife use will depend on camera trap data and snow track surveys (*Activity 2.2)*.

Logframe targets: detections of target species by camera traps [ongoing]; detections of target species at track beds [cancelled; methodology not suitable for study area].

Activity 2.2. Expressway snow surveys

This activity is on schedule to begin in November 2026, once snow conditions allow for track identification.

Logframe targets: detections of target species tracks during snow surveys [planned for winter 2026-27, on schedule].

Activity 2.3 Develop road department survey system

The road ecology team from CATS has begun initial discussions with local expressway maintenance authorities on creating a system by which maintenance staff can record and share any wildlife observations or signs. This activity is just beginning and is on schedule with our proposal; we look forward to sharing more on this activity in the final report.

Logframe targets: Detections of target species by road department [planned to start Oct-Nov 2026, on schedule].

Objective 3: Assess landscape connectivity

Activity 3.1 Connectivity analysis

The CATS research team conducted a broader assessment of landscape connectivity in northeast China and the intersection of existing culverts, bridges, and overpasses of the Suifenhe Expressway with priority movement corridors, with technical support of WCS. During the reporting period, the CATS research team made excellent progress on the analysis, already completing a first complete run through all steps. We are ahead of schedule with this activity and look forward to providing finalized results by the end of the grant period.

Arguably the most challenging part of this analysis is the first step: defining priority blocks of existing Amur tiger and leopard habitat and their relative suitability. A few range-wide analyses of Amur tiger habitat in China have been conducted (Long et al., 2021; Qi et al., 2021; Sanderson et al., 2023), whereas Amur leopard habitat has mostly been assessed within NCTLNP (e.g., Feng et al., 2021; Li et al., 2024; Qi et al., 2015), and rarely at landscape levels (Jiang et al., 2015). CATS and WCS are working to determine the most suitable approach to describing Amur tiger and leopard habitat in the Suifenhe and adjacent regions, likely through a model averaging approach combined with expert assessment.

Logframe targets: report completed detailing methods, results, and discussion of key findings/next steps [complete by Feb 2027, on schedule].

Feng, R., Lü, X., Xiao, W., Feng, J., Sun, Y., Guan, Y., Feng, L., Smith, J. L. D., Ge, J., & Wang, T. (2021). Effects of free-ranging livestock on sympatric herbivores at fine spatiotemporal scales. *Landscape Ecology*, *36*(5), 1441–1457. https://doi.org/10.1007/s10980-021-01226-6

Jiang, G., Qi, J., Wang, G., Shi, Q., Darman, Y., Hebblewhite, M., Miquelle, D. G., Li, Z., Zhang, X., Gu, J., Chang, Y., Zhang, M., & Ma, J. (2015). New hope for the survival of the Amur leopard in China. *Scientific Reports*, *5*. https://doi.org/10.1038/srep15475

Li, Q., Qi, J., Peng, J., Qu, L., Xu, Q., Wenzel, C., & Zhang, M. (2024). Habitat accessibility and snares impact large cats and their prey in Northeast Tiger and Leopard National Park, China. *Biological Conservation*, *289*, 110414. https://doi.org/10.1016/j.biocon.2023.110414

Long, Z., Gu, J., Jiang, G., Holyoak, M., Wang, G., Bao, H., Liu, P., Zhang, M., & Ma, J. (2021). Spatial conservation prioritization for the Amur tiger in Northeast China. *Ecosphere*, *12*(9). https://doi.org/10.1002/ecs2.3758

Qi, J., Gu, J., Ning, Y., Miquelle, D. G., Holyoak, M., Wen, D., Liang, X., Liu, S., Roberts, N. J., Yang, E., Lang, J., Wang, F., Li, C., Liang, Z., Liu, P., Ren, Y., Zhou, S., Zhang, M., Ma, J., … Jiang, G. (2021). Integrated assessments call for establishing a sustainable meta-population of Amur tigers in northeast Asia. *Biological Conservation*, *261*. https://doi.org/10.1016/j.biocon.2021.109250

Qi, J., Shi, Q., Wang, G., Li, Z., Sun, Q., Hua, Y., & Jiang, G. (2015). Spatial distribution drivers of Amur leopard density in northeast China. *Biological Conservation*, *191*, 258–265. https://doi.org/10.1016/j.biocon.2015.06.034

Sanderson, E. W., Miquelle, D. G., Fisher, K., Harihar, A., Clark, C., Moy, J., Potapov, P., Robinson, N., Royte, L., Sampson, D., Sanderlin, J., Yackulic, C. B., Belecky, M., Breitenmoser, U., Breitenmoser-Würsten, C., Chanchani, P., Chapman, S., Deomurari, A., Duangchantrasiri, S., … Wood, K. (2023). Range-wide trends in tiger conservation landscapes, 2001 - 2020. *Frontiers in Conservation Science*, *4*. https://doi.org/10.3389/fcosc.2023.1191280

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)

There have been no major obstacles to success in this project so far. The initial site visit of crossing structures was somewhat hampered by inaccessibility, but that was resolved by collaboration with the Suifenhe Expressway Traffic Police and a second site visit in August 2026. *Activity 2.1* was disrupted by the difficulties of successfully applying track beds to research wildlife crossings; the environment is just too wet and rainy to implement this approach. This will not compromise the project, as we still have many camera traps deployed throughout the corridor, and will conduct thorough snow track surveys this coming winter. Otherwise, the project has proceeded smoothly and as planned, and we look forward to sharing further results with WCCA in our final report.

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

Overall, Spending is in line with our proposed budget, and we anticipate no major revisions. Because of the unsuitability of track beds in our study area, we request to reallocate those associated costs to purchase extra camera traps. CATS has suggested purchasing extra camera traps that can operate more than one year and improve the quality of our long-term research of the Suifenhe Corridor. Therefore, we request to reallocate the budget for the track beds to camera trap equipment purchase.

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

N/A

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.

Figures referenced in the text above:







Figure 1. Example images of the two large bridges that provide excellent connectivity between Amur tiger and leopard habitats on either side of the Suifenhe Expressway. Images © CATS.