

YOUR SUPPORT IN ACTION

# MONGOLIA 2024 IMPACT REPORT



**PROTECTING  
SNOW LEOPARDS**  
for over forty years

# THANK YOU

Snow Leopard Trust, in partnership with the Snow Leopard Conservation Foundation (SLCF), deeply appreciates your support in advancing scientific research and conservation efforts in Mongolia. Every milestone we reach in safeguarding the endangered snow leopard reflects your commitment, and we are truly grateful to have you as a vital part of this mission.

We're excited to share the progress of the snow leopard research and conservation efforts you've made possible. Our pioneering ecological study continues to reveal crucial insights about these mysterious cats and their vulnerable mountain ecosystems. Your support is helping us ensure the survival of these endangered cats for generations to come.



Credit: Jake Davis

## KEY PRIORITIES POWERING OUR CONSERVATION EFFORTS

At Snow Leopard Trust, our impact is driven by a commitment to protecting snow leopards and their habitats while empowering local communities and conservation leaders. Our work is guided by four priorities:

- Land and Wildlife Protection
- Community Coexistence
- Comprehensive Research
- Leadership Development

We've woven key goals across all our priority areas to amplify our conservation impact:

- Supporting and strengthening the capacity of women leaders
- Understanding the impacts of climate change on snow leopards and their habitat
- Fostering climate resilience among local communities
- Improving healthcare and disease management in snow leopard landscapes

We are also expanding global initiatives for ethical community engagement in conservation, empowering local leaders and strengthening conservation at the grassroots level.



## SAFEGUARDING LAND FOR SNOW LEOPARDS

Snow Leopard Trust implements comprehensive conservation strategies across Mongolia, collaborating with local and national governments, National Parks, rangers and local communities to protect snow leopards and critical wildlife habitats.

Two high-impact initiatives focus on safeguarding Mongolia's vital snow leopard habitat: protecting the Tost Tosonbumba Nature Reserve and working with communities to formally register their Community Responsible Areas. These efforts aim to foster coexistence between local communities and snow leopards while increasing the impact of large-scale conservation and land protection efforts.

# A PROTECTED STRONGHOLD FOR SNOW LEOPARDS

## Community Protected Areas

Approximately 80% of snow leopard habitat in Mongolia is located outside protected areas, leaving these regions vulnerable to unregulated development or damaging activities such as mining. This threatens the survival of snow leopards and other mountain biodiversity as well as the pastoral communities who depend on these areas for their livelihoods and traditional way of life.

Our team helps local communities acquire the legal right to manage their lands for conservation and sustainable use, referred to as Community Responsible Areas (CRAs).

29 communities  
protected a total of  
**21,000**  
km<sup>2</sup> of snow leopard  
habitat through their CRAs

Last year, we partnered with these communities to strengthen the protection of their (CRAs), helping enhance their strategic plans and



monitoring efforts. A total of 48 rangers and community committee members participated in online training sessions focused on wildlife management and monitoring. The sessions covered various topics, including conservation strategies, wildlife patrol and monitoring planning, ranger training, and effective management of conservation funding.

We continued to expand the number of communities applying for government recognition of their CRAs. This gives them the legal power to determine what activities take place on their land, such as mining, road construction or infrastructure development.

## Tost Tosonbumba Nature Reserve

The Tost Tosonbumba Nature Reserve (TTNR) is a vital refuge for snow leopards, thanks to years of collaboration with local communities that helped protect the landscape from imminent threats. This important partnership was key in establishing this expansive protected nature reserve, which benefits both communities and wildlife. *We are currently conducting the longest comprehensive ecological study of snow leopards in the world at this site.*

In 2024, we advanced our long-term conservation strategy by helping to build and enhance the governance capacity of the reserve's oversight committee. Through training and support, we empowered local stakeholders with expertise and resources to strengthen the framework for snow leopard conservation across the Tost landscape. This foundational work is critical to ensuring the survival of this iconic species.

**The Tost Tosonbumba Nature Reserve is one of 24 key habitats identified for snow leopard protection across the 12 range countries, playing a crucial role in the conservation of this endangered species.**

# COMMUNITY PARTNERSHIPS FOSTER COEXISTENCE



Our coexistence work with Indigenous peoples and local communities helps ensure that humans and snow leopards can thrive together. These programs offer the tools they need to engage in effective conservation efforts, including many community-led initiatives such as:

- Snow Leopard Enterprises
- Livestock Insurance Programs
- Ranger Wildlife Program (Citizen & Ranger Wildlife Protection Program - CRWPP)
- Emergency Hotline for communities who have conflicts with snow leopards
- Corral Building to help prevent livestock depredation
- Livelihood Improvement opportunities in response to changing climate, such as dairy and cheese production and eco-tourism

**Snow Leopard Enterprises (SLE)** is a women-led initiative that promotes snow leopard conservation and enhances community livelihoods through the production and sale of handmade products.

Participating artisans and communities involved in the program are vital partners in conservation efforts to protect snow leopards and their wild prey within their Community Responsible Areas. A community-managed bonus system encourages members to prevent illegal hunting on their lands and to engage in conservation activities. **This approach has created meaningful opportunities for women to emerge as leaders in snow leopard conservation.**

Last year, women from SLE communities created thousands of wool handicrafts, such as slippers, ornaments and pet toys, which were purchased and shipped to the U.S. for sale to zoos, pet stores and individual supporters.

We conducted training for the new community of Ulziit on how to produce sheep wool and felt products. Exciting new products were developed, including a new design for bookmarks, felt yurts and new horse and camel toys now available on our website.

<b>12,000</b>	wool handicrafts created by SLE participants	<b>106</b>	skilled SLE members created wool handicrafts to sell worldwide
<b>19</b>	partner communities earned \$13,085 selling handicrafts	<b>20%</b>	bonus paid to all partner communities who ensured no illegal hunting took place

**No snow leopards or wild prey were reported killed in SLE Community Responsible Areas.** However, two snow leopards were reported dead via our community hotline, likely due to disease, though more information is needed. The hotline is an essential tool for reporting unusual sightings and tracking where any conflict occurs.

## Community Managed Livestock Insurance & Predator-Proof Corrals

Communities across snow leopard landscapes rely heavily on livestock—including sheep, goats, camels, cattle and yaks—for their economic survival. The loss of even a single animal to snow leopard predation can create significant hardship for these families. Partnering with communities to minimize livestock losses and share the financial burden when predation occurs is key to long-term coexistence.

**Two of our most effective initiatives to reduce livestock losses include: Community-managed Livestock Insurance and Corral Improvement programs.**

In 2024, the Livestock Insurance Program saw robust participation, with 55 families enrolling and insuring a total of 7,398 animals. Our teams attended insurance meetings with four communities to discuss livestock losses, review claims, manage funds, make insurance payouts and review general operations. During the year, insurance participants lost a total of 6 livestock to predation and the families were compensated through the program. When committees distribute compensation for the losses, they ensure that a percentage of the funding is reserved for any future losses. Additionally, each family contributes an annual premium to the fund.

The insurance program leaders help participants improve herding practices to better protect their livestock. For example, they encourage herders to accompany their animals while they graze in the mountains. **Communities participating in livestock insurance programs agree not to harm snow leopards in retaliation for livestock losses.**

Last year, two new communities, Bayanbor and Dul, joined the insurance program. SLCF provided seed funding to enable 18 households to insure 3,111 livestock across both communities.

In 2024, we expanded the Corral Improvement program to reach more communities in the region. The program built new fences for seven families, helping to protect over 2,200 animals from predators.



## Increased Support and Recognition for Rangers in Mongolia



In 2024, we expanded the successful Citizen-Ranger Wildlife Protection Program to Mongolia, where they held their first Ranger Award ceremony in Ulaanbaatar. 19 rangers and citizens were acknowledged for their dedication and bravery in disrupting poaching and illegal wildlife trade, including **Ts. Buyambajav**, the first woman honored for her efforts in wildlife crime prevention in her Community Reserve Area.

These ceremonies are an opportunity to bring attention to the challenges rangers face on the frontlines of conservation. Through this program, we are enhancing the training and equipment provided to rangers, including crime scene

investigation and emergency healthcare training. Rangers in Tost are using SMART (Spatial Monitoring & Reporting Tool) mobile technology to collect and transmit patrol data. SMART is a globally recognized tool that helps conservationists collect, measure and evaluate data in a systematic way.

This technology is helping to improve the effectiveness of patrols in Community Responsible Areas. Significant ranger observations included both human activities and wildlife, including two snow leopards, 38 argali, 40 ibex, and 85 black-tailed gazelle.



# COLLABORATING WITH COMMUNITIES FOR CONSERVATION

## Livelihood Initiatives

Climate adaptation strategies are crucial for fostering human-snow leopard coexistence. In 2024, Mongolia experienced some of its most extreme winter weather conditions that extended well into spring. Deep snow and ice covered grazing areas, creating catastrophic challenges that affected hundreds of thousands of people and millions of livestock, while devastating livelihoods.

Thanks to your support, we are actively working to enhance community resilience to climate change by diversifying income sources. One approach includes collaborating with herders and our conservation team to expand the SLE brand to include other wildlife-friendly products.

### Eco-Friendly Local Tourism

To help build eco-friendly local tourism in Mongolia and generate sustainable income for communities, our team organized Wildlife-Friendly Tourism seminars in the Gobi region and western Mongolia. A total of 70 people attended these training sessions.

As part of the initiative, we provided essential eco-tourism equipment (including solar panels, batteries, and refrigerators) to five communities in Uvs province. Beyond equipment, we created and distributed tourism brochures and travel packages throughout the broader western Mongolia region. This comprehensive approach not only equips local communities with sustainable technology but also connects them to the growing eco-tourism market, creating economic opportunities while preserving Mongolia's natural landscapes.



### Dairy and Cheese Production

Thanks to your generosity, we provided comprehensive dairy production training to communities in Uvurkhangai province. We worked with 16 people from two communities, demonstrating how to produce and market seven traditional dairy products: cheese, jam, food seasoning, candy, dried curd, curd cake, and dried whey (eezgii). This training has equipped them with valuable skills that can increase income opportunities.

In 2024, SLCF helped Oyunbileg, a community leader from Uvs Province, represent her community at an International Tourism Conference in the capital city of Ulaanbaatar. By supporting her travel costs and other fees, she was able to sell her community's dairy products. This experience enhanced her sales skills and increased community participation in conservation efforts.



## National Conservation Education and Awareness Activities

Our conservation education programs for adults and children inspire a connection with nature and help foster coexistence - reducing threats to snow leopards and their wild prey. These programs include student eco-camps, annual Snow Leopard Day celebrations (pictured below) and a biannual newsletter distributed to 800 people in herder communities.

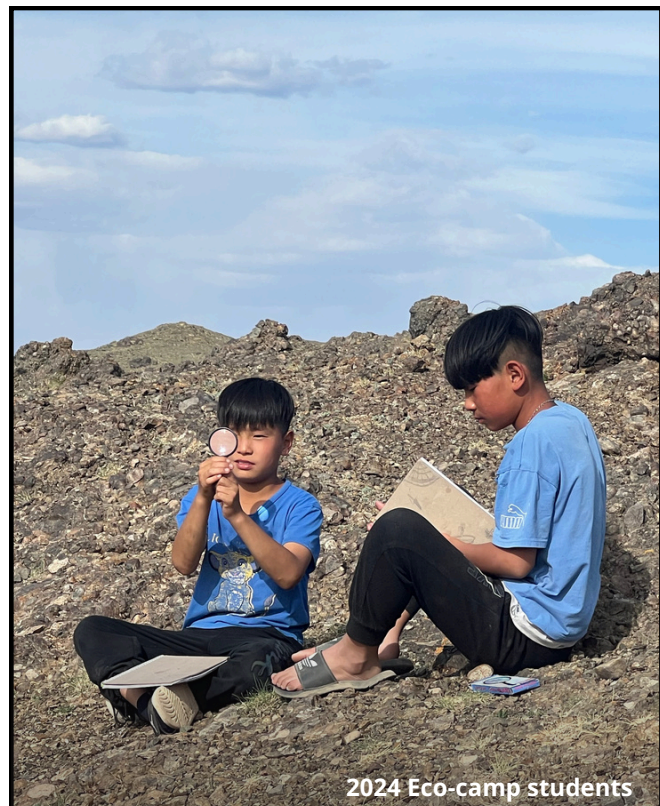


SLCF partnered with 12 communities to organize nationwide Snow Leopard Day celebrations and raise public awareness about conservation. Over 140 rural herders took part in the celebrations. In Ulaanbaatar, we partnered with the Fresh Water Resources Center to reach over 100 secondary school students for Snow Leopard Day.

### Experiential Eco-Camps

Last summer, 40 students from the town of Gurvantes, ages 11 to 12, participated in eco-camps at the Long-Term Ecological Study Research Station. The program included engaging and reflective activities designed to immerse the students in nature. They went on hikes to observe snow leopard signs and learned about native plants and wildlife through observation, journaling and drawing.

Additionally, the students learned about snow leopards, the threats they face and the challenges communities experience living with these predators. The children developed innovative solutions for coexistence and shared ideas with one another. The camp is organized by our team and supported by local teachers and volunteers to ensure a rich educational experience for all participants.



2024 Eco-camp students

# RESEARCH YOU SUPPORT FUELS CONSERVATION

Your support of our Long-term Ecological Study (now in its 17th year!) is crucial for evaluating threats and designing conservation policies needed to ensure the snow leopard's future. Together, we are building a more comprehensive picture of snow leopard ecology and behavior. Through our research and monitoring efforts, we're developing critical insights that directly inform global conservation strategies.



## Background

Since 2008, we've been conducting the world's most comprehensive long-term ecological study on snow leopards in Tost Tosonbumba Nature Reserve and surrounding areas using state-of-the-art techniques such as GPS tracking collars and remote cameras. This study has led to several groundbreaking scientific findings, filling in critical gaps in knowledge about the species. It has produced unprecedented insights into the ecology and behavior of these endangered cats.

We chose the Tost Mountains and the neighboring mountain ranges as our core study site due to their high snow leopard population and relative accessibility. This includes the Gobi Gurvansaikhan National Park and additional protected and unprotected areas.

Camera surveys help us determine snow leopard population density and distribution. These surveys are crucial for the PAWS initiative (Population of the World's Snow Leopards), which aims to establish a reliable global snow leopard count. PAWS was developed with Snow Leopard Trust support through the Global Snow Leopard and Ecosystem Protection Program, which works with all 12 snow leopard range countries and over 40 research and conservation organizations.

# LONG-TERM ECOLOGICAL STUDY

## Camera-Trapping Updates

Each year, SLT and SLCF teams install 180 camera traps across more than 7,000 km<sup>2</sup> of snow leopard habitat in Mongolia's Tost Tosombumba Nature Reserve and surrounding mountains, rotating the cameras between study areas every two to three months. The data from camera surveys help determine snow leopard population density and distribution. We analyze this information to understand trends over time, including influencing factors and regional variations.

Last year, we collected the 43 cameras set up by community rangers in our main study area of TTNR in late 2023. After analyzing thousands of images, we have identified the cats captured on camera based on pelt patterns and photos from previous years.



- Snow leopards were photographed on 37 out of 43 camera traps.
- We observed 19 adult snow leopards from previous years, three new adult snow leopards not seen before and five potentially new adults, transients, or subadult snow leopards.
- We documented 22-27 adult snow leopards, continuing the stable population pattern of previous years.
- There were four females with young (first-year) cubs. F10 with two cubs, F11 with one cub, F12 with three cubs, and Nandu with three cubs.
- Five females were accompanied by subadult cubs (i.e., cubs born in 2022): Antoine with two cubs, Clown with two cubs, Presnel with two cubs, Zaya with one cub, and an unknown female with one cub.
- **This means that 17 snow leopard cubs were growing up in Tost in 2023!**

We also set up cameras last year in the mountain ranges of Tost, Noyon, Nemegt, Altan, Gilbert, and Sevrei Mountains. **This data is still being analyzed by our teams.**

## Ungulate Surveys

Understanding prey abundance and distribution is fundamental to snow leopard ecology. We've monitored ibex and argali populations in the Tost Mountains in collaboration with local communities and rangers from the TTNR since 2012.

In 2024, rangers assessed populations across 55 transects (533 km<sup>2</sup>) using double observer/distance sampling methods. Initial estimates indicate approximately 750 ibex and 157 argali in the study area. We will continue to do annual surveys in order to monitor any changes in the population.

## GPS-Tracking Updates

- GPS collaring improves our understanding of spatial ecology and predation patterns of snow leopards
- Research camera studies provide insight into snow leopard population dynamics
- Wild prey surveys shed light on the abundance and distribution of snow leopard prey species



## Five New Snow Leopards On Air in 2024

We successfully collared five new snow leopards in 2024—three females and two males. This brings the total number of cats collared and tracked by our team in Tost to 42 (24 males and 18 females) since the start of our study in 2008.

**F17 Altai** (meaning gold) was collared in the spring of 2024 and appeared to be relatively young, so she may not be settled in a home range yet. However, she is spending time in what used to be Agnes and Dagina's range.

**F18 Mandal** (meaning sunrise) was 4 to 5 years old and roaming in search of a territory when collared last spring. The fact that a female in her prime had not yet settled suggests a shortage of available space for cats in the area. Unfortunately,



we were only able to track her for two months before she died, likely as a result of an aggressive interaction with Presnel, another female snow leopard.

**M23 Salkhi** was first observed on our cameras in 2021 as an adult. We collared him in the spring of 2024 when we estimated him to be 5 to 7 years old. At that time, he had some rather serious wounds, likely from a confrontation with another male snow leopard. He now resides in the territory previously held by M20 combined with the western parts of Chingis' old territory. We found several ibex and argali carcasses that he hunted in autumn of 2024 so it appears his previous wounds do not hinder him.

**M24 Angarag** (meaning Mars) was collared in the fall of 2024 at about 2.5 years of age. He is roaming over a large part of Tost, seemingly in search of a vacant territory. GPS data reveals he has crossed into M23's territory recently.

**F12 Wilian** was collared late last year. She was born in 2015 to Anu, who we have followed since she was a one-year-old. We've tracked F12 and her sisters (Antoine and F11) via camera trap since they were six months old. She has been collared twice before, most recently in 2022. This time, F12 had three cubs, born on May 17, 2023.

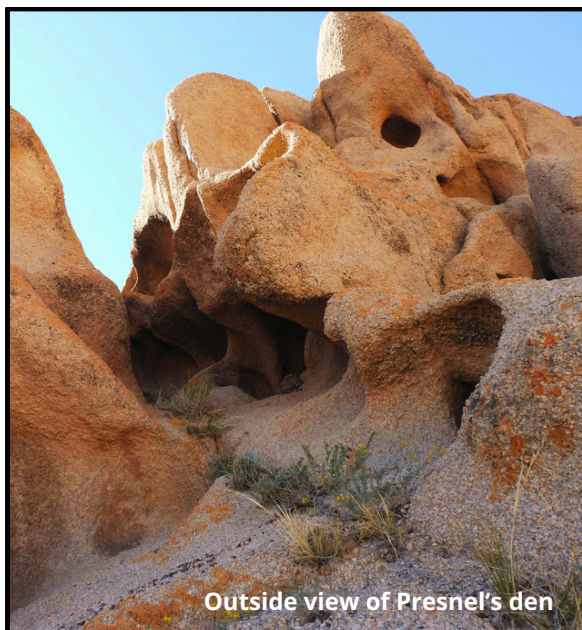
## Two Males Collared in 2023 - Update

**M20** - Nicknamed Digger because he was observed digging for water on two occasions. M20 was first seen in 2020 as an adult. Unfortunately, he was killed in the spring of 2024, likely during an aggressive encounter with another snow leopard. At eight years old, he had held his territory for four years. Typically, snow leopards can defend their territories until around age ten.

**M22** - This male resided in northwest Tost and was unknown to us when we collared him in the fall of 2023. He appeared to be relatively young, estimated to be around 4-5 years old, and may not have settled in a territory. Unfortunately, M22 died in the spring of 2024 from unknown causes.

## Presnel's Den Discovered

Researchers located and documented Presnel's den in a red-rock bowl-shaped crater. Presnel gave birth again in early May and has since left the site. Her collar detached, as planned in June 2024, and our team successfully retrieved it. The data on the collar will provide a wealth of knowledge about her movement patterns.



Outside view of Presnel's den

## Unconventional Ibex Success

The team collared a female ibex (IF10) in early October—though not with a drop net as planned. Instead, she unexpectedly stepped on a snow leopard snare. They were able to fit her with the collar and check her legs carefully. She didn't have a scratch on her and disappeared in a flash when released. She has maintained a relatively small home range so far and has made multiple passes by the waterhole we constructed last spring.



Ibex resting near research camp

## First-ever Observation of Water-Digging Behavior in Snow Leopards

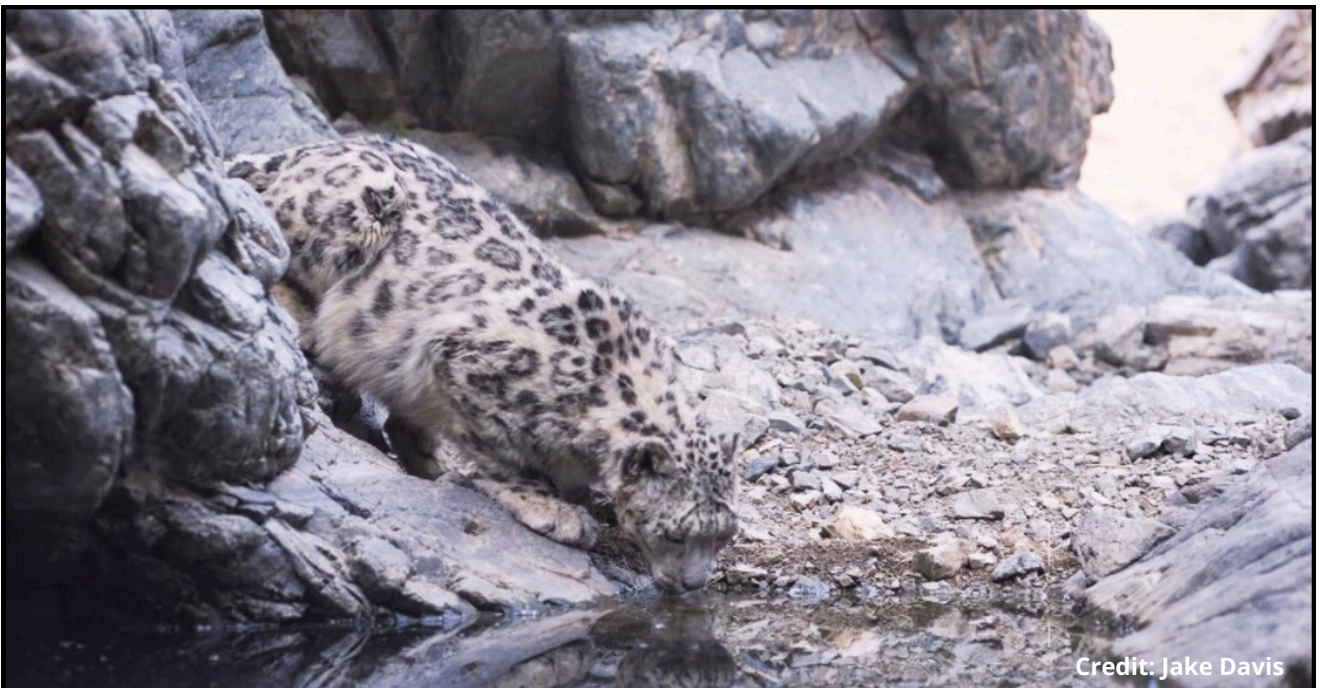
Buren Nyam, a ranger and community program manager, observed a snow leopard digging for water (mentioned above left) at a temporary watering hole near his home in the Tost Mountains. This behavior was documented using camera traps and revealed that the snow leopard was likely accessing subsurface water. The digging potentially benefitted other species, as they also drank from the site. This discovery sheds light on the snow leopard's adaptation to arid landscapes and the importance of protecting water resources in the face of human activity and climate change.

## Monitoring Plant Diversity and Ecosystem Health

Researchers from Mongolian State University's Department of Ecology conducted seasonal field studies in the Tost Tosonbumba Nature Reserve.

These mountains consist primarily of extremely dry and arid pastures. Most of this area is used as pastureland, with 400 km<sup>2</sup> overlapping as critical habitat of the threatened snow leopard and other wildlife species such as ibex and argali. This creates an important intersection of grazing and conservation priorities, both of which are crucial for livestock and wildlife.

During the five-month field study, researchers identified and documented 90 plant species across 30 genera, making several significant conservation discoveries, including six species classified as Endangered or Critically Endangered. This study will help us determine what conservation measures are needed to improve the health of the mountain landscape.



## SCIENTIFIC PAPERS FROM OUR LONG-TERM ECOLOGICAL STUDY

In 2024, our scientists published eight papers based on the Tost research, bringing the total to 48 scientific publications since the study's inception in 2008. These publications provide new insights into snow leopard ecology and behavior, best practices for research and conservation and human-nature relationships.

Abinand Reddy Kodi, Jasmin Howard, David Louis Borchers, Hannah Worthington, Justine Shanti Alexander, Purevjav Lkhagvajav, Gantulga Bayandonoi, Munkhtogtokh Ochirjav, Sergelen Erdenebaatar, Choidogjamts Byambasuren, Nyamazav Battulga, Örjan Johansson, Koustubh Sharma. 2024. **Ghostbusting—Reducing bias due to identification errors in spatial capture-recapture histories.** British Ecological Society Volume 15: Issue 6, 1060-1070

Byambasuren, C. Johansson, O., Alexander, J. S., Lkhagvajav, P., Samelius, G., Sharma, K. 2024. **Who's the boss? Understanding the spatial relationship between snow leopard and Eurasian lynx in southern Mongolia.** Wildlife Biology. 1-10

Cancellare, I. A., Weckworth, B., Caragiulo, A., Pilgrim, K. L., McCarthy, T. M., Abdullaev, A., Amato, G., Bian, X., Bykova, E., Dias-Freedman, I., Gritsina, M., Hennelly, L. M., Janjua, S., Johansson, O., Kachel, S., Karnaukhov, A., Korablev, M., Kubanychbekov, Z., Kulenbekov, R., Liang, X., Lkhagvajav, P., Meyer, T. K., Munkhtsog, B., Munkhtsog, B., Nawaz, M. A., Ostrowski, S., Paltsyn, M., Poyarkov, A., Rabinowitz, S., Rooney, T., Rosen, T., Rozhnov, V. V., Sacks, B. N., Schwartz, M. K., McCarthy, K. P. **Snow leopard phylogeography and population structure supports two global populations with single refugial origin.** 2024. Biodiversity and Conservation. 1-19

Johansson, O., Alexander, J. S., Lkhagvajav, P., Mishra, C., Samelius, G. 2024. **Natal dispersal and exploratory forays through atypical habitat in the mountain-bound snow leopard.** Ecology. 1-4

Lkhagvajav, P., Alexander, J. S., Byambasuren, C., Johansson, O., Sharma, K., Mishra, C., Samelius, G. 2024. **Snow leopards and water: high waterhole visitation rate by a breeding female in summer.** SL Reports 3: 41-45

Mijiddorj, T. N., Ganchudur, B., Samelius, G., Alexander, J. S. 2024. **Reflections from a snow leopard eco-camp program in Mongolia.** SL Reports 3: 69-78

Nyam, E., Alexander, J. S., Byambasuren, C., Johansson, O., Samelius, G., Lkhagvajav, P. 2024. **Snow leopard digging for water in an arid environment.** SL Reports 3: 37-40

Young, J. C., Alexander, J. S., Agvaantseren, B., Bijoor, A., Butler, A., Nawaz, M. A., Piaopiao, T., Searle, K. R., Uulu, K. Z., Zhi, L., Suryawanshi, K. R., Redpath, S. M., Mishra, C. 2024. **Collaborative conservation for snow leopards: Lessons learned from successful community-based interventions.** Conservation Letters 1-13

# LOOKING AHEAD - BUILDING LASTING IMPACT IN CONSERVATION



We remain committed to advancing key strategic priorities that address the current and emerging needs of snow leopards and the Indigenous people and local communities who share their habitat.

- **Protection of snow leopards and their landscapes**
- **Fostering coexistence in partnership with communities**
- **Advancing snow leopard research and understanding of climate impacts**
- **Building strong global conservation leaders**

We will continue to support women at the forefront of conservation, enhance climate resilience efforts and expand ethical community engagement to create lasting conservation solutions for the future.



## THANK YOU!

Your support fuels our research and conservation progress. We look forward to continuing our collaboration to safeguard these iconic cats for future generations.

All photos: Snow Leopard Conservation Foundation & Snow Leopard Trust except where indicated.

***If you have questions about this report, please contact:***

Jennifer Snell Rullman - Senior Philanthropy Manager

**[jennifer@snowleopard.org](mailto:jennifer@snowleopard.org)**

