Conservation research and practice for big cats of China in the context of internationalization, taking snow leopard as an example

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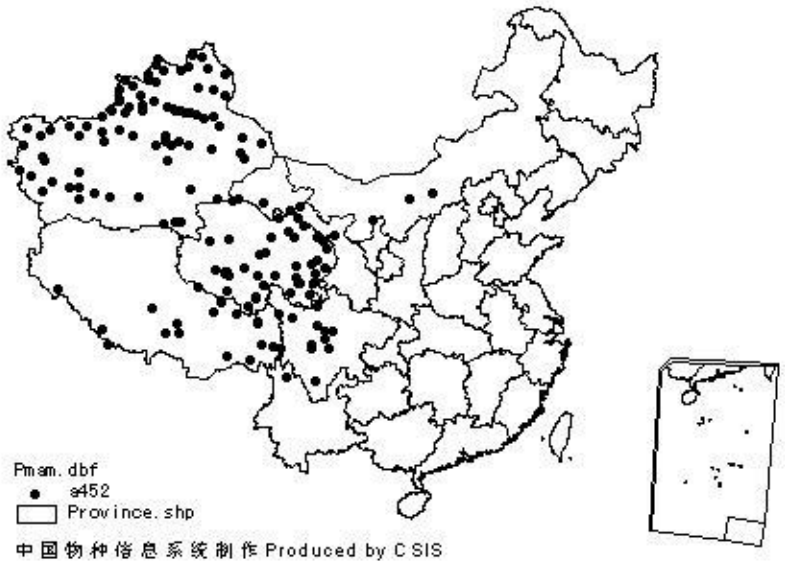
Harbin, 29th July 2019

Snow leopard (*Panthera uncia*)



- Range in altitude: 3000-4500m
- Ranges in China: Xinjiang, Tibet, Gansu, Qinghai, Sichuan, Inner Mongolia, Yunnan
- 60% habitats, 50% population
- Prioritized protection wildlife in national level: Grade **I**

Outline

- The Snow Leopard Transboundary Initiative (SL-TBI): Conservation Cooperation between Kazakhstan, Kyrgyzstan and China

- Habitat connectivity and its dynamics of snow leopards in the Sutai mountain in Mongolia and Qilian mountains in China

- Transboundary conservation: integrative approaches by intra- & inter-national partnerships

Part 1: The Snow Leopard Transboundary Initiative (SL-TBI)

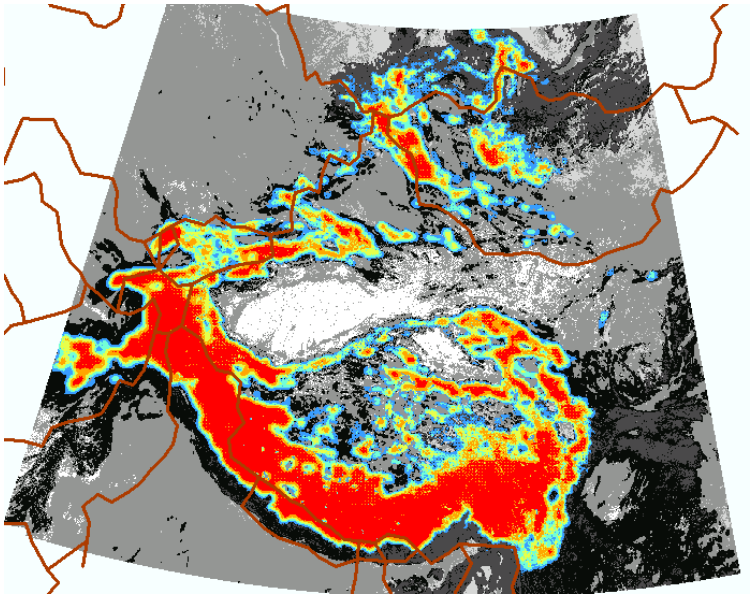
Conservation Cooperation between Kazakhstan, Kyrgyzstan and China

Marwell Wildlife

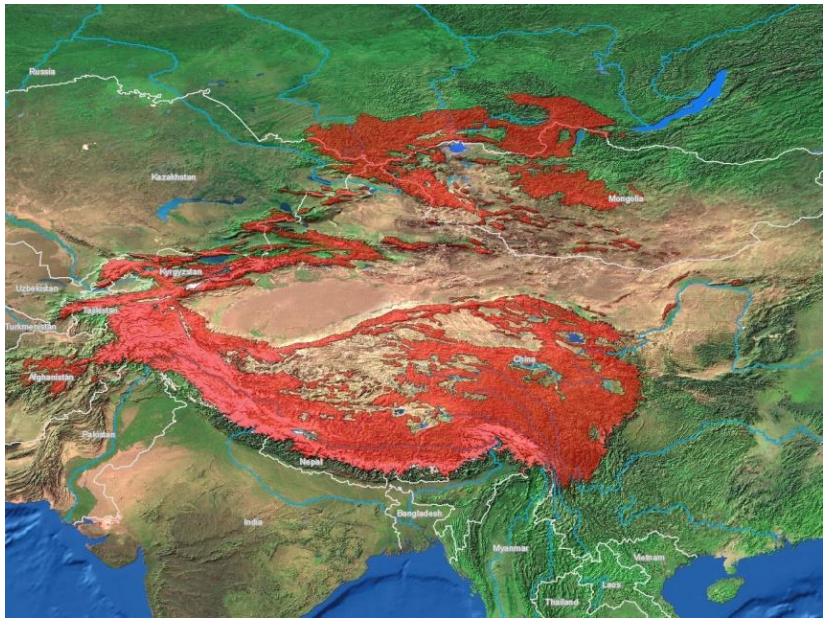
WILDLIFE INSTITUTE
BEIJING FORESTRY UNIVERSITY

Snow leopards are Transboundary Species

- 12 range countries
- **10,000 km of borders**
- Connectivity is **key requirement** to secure the species across its range



Riordan et al (2015)



- Prey distributions
- CMS Central Asia Mammals Initiative
- “Serengeti of the North”

Transboundary Challenges

1. Remoteness of mountain communities and their distance from decision-making centres.
2. Physical fragility, necessitating a mechanism for quick response
3. High dependence on nature for subsistence among mountain communities.
4. Ethnic diversity, heterogeneity of cultures, traditions, and practices, can hinder consensus in decision making.
5. Lack of clear property rights over high-value niche products
6. Transboundary quality of natural resources limits effective monitoring and management across borders.

ICIMOD (2019) HKH Assessment

Transboundary Conservation

IUCN Typology	Description
Type 1	Transboundary Protected Area
Type 2	Transboundary Conservation Landscape and/or Seascape
Type 3	Transboundary Migration Conservation Area

WCPA Transboundary Conservation Specialist Group 2015

GSLEP 20 x 2020

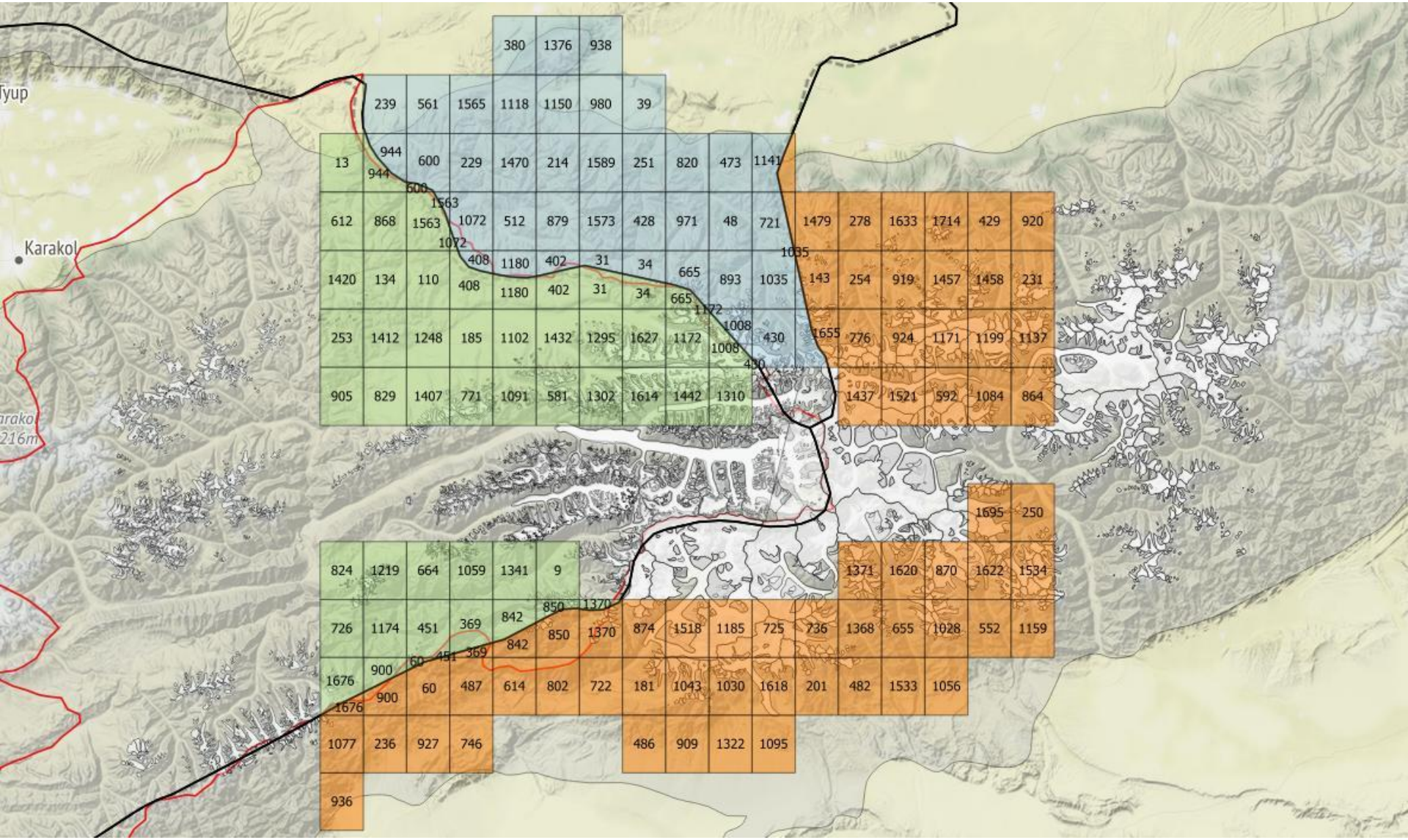
- China has the largest SL population
- Kyrgyzstan is a snow leopard nation
- Kazakhstan links northern and southern parts of global SL range

Key Conceptional Questions

- Do snow leopards (and their prey) influenced by borders, and if so, how?
- How and to what degree are Snow Leopard populations connected between each country?
- How are actions telecoupled across borders? (e.g. Belt and Road)
  - "It's a small (and fast) world after all"
- How can development, climate and conservation goals be aligned?

- **Kick-off Meeting (China)**
- **Scoping Workshop (Kazakhstan)**
- **Methodology Workshop (Kyrgyzstan)**
- **Pilot field surveys** (transects, scats, camera trapping)

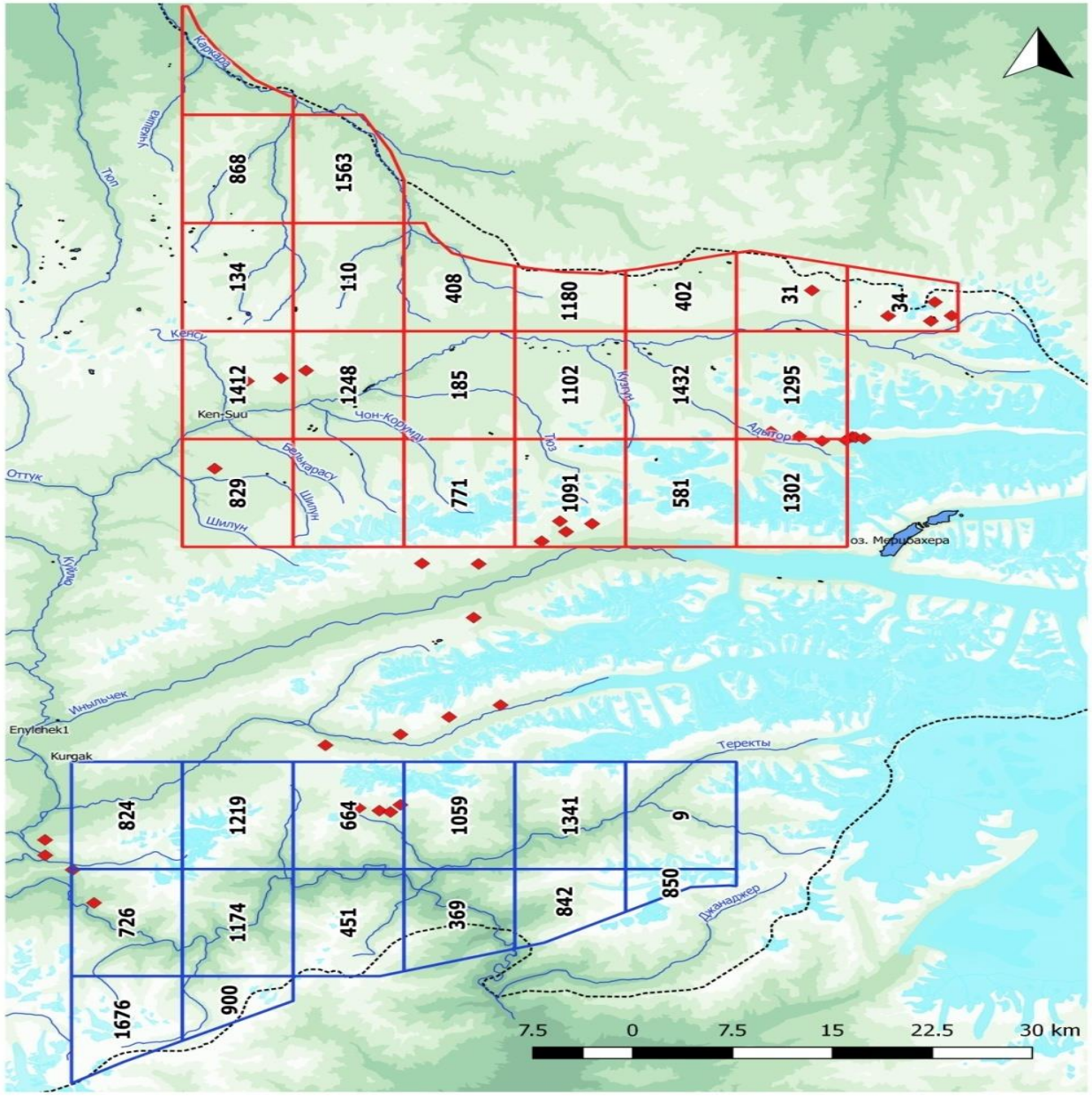
Khan Tengri / Pik Pobeda / Tomur Feng



Pilot Survey Kazakhstan

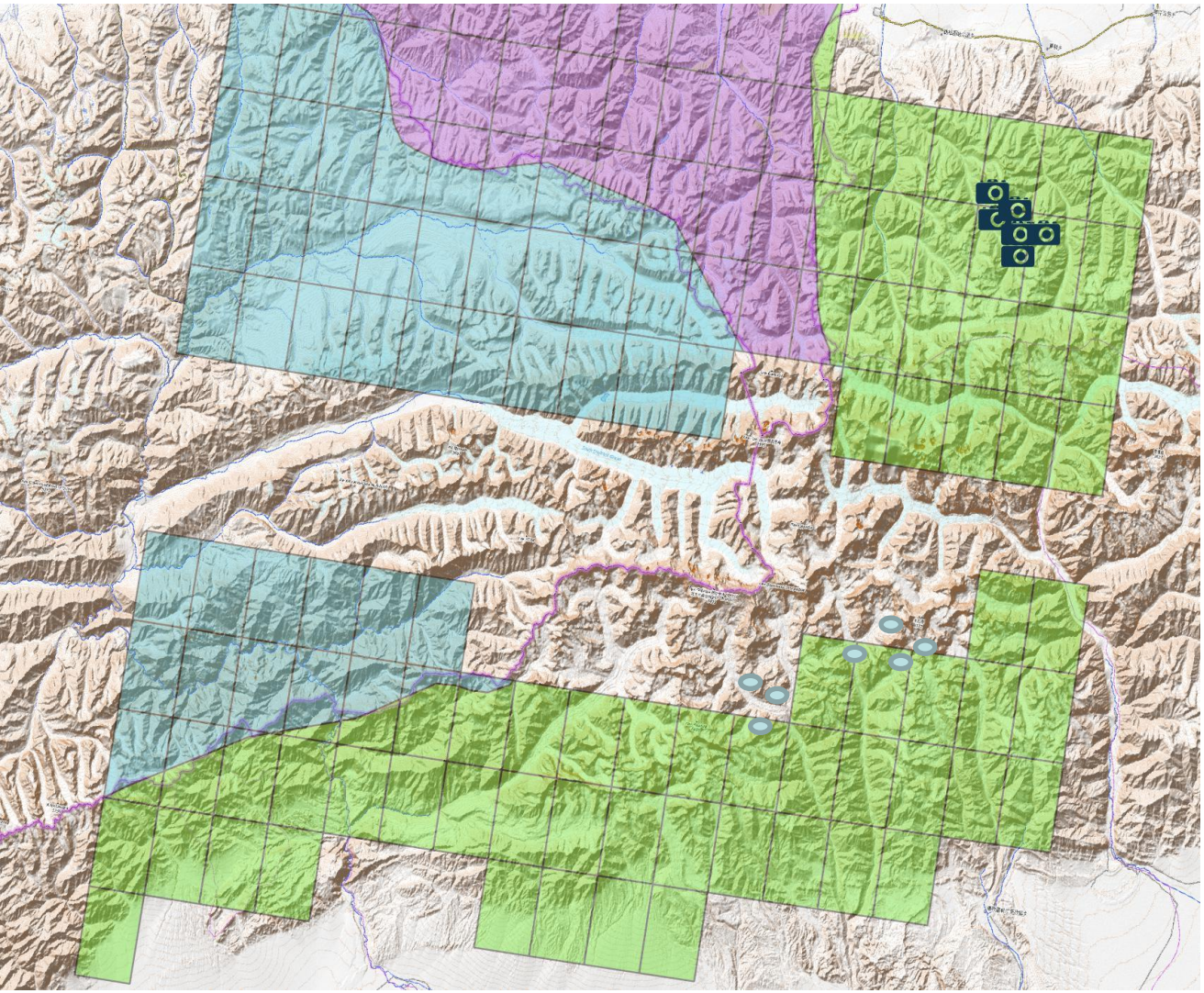
- Collected 10 (SL) scat samples,
  Fresh footprints of snow leopards seen during transects (3 locations)
- Large herds of Ibex seen during transects, groups of Argali, present on camera traps
- **9 camera traps had SL pictures**
  Some snow leopards were recorded repeatedly. Initial analysis indicates ~10 adult snow leopards in study area, including two females with two sub-adults each
- Additionally pictures of Pallas' cat and wolf

Pilot Survey in Kyrgyzstan



- 36 Cameras
- 2 x SL captures: Incl. female & 2 sub-adults
- SL Footprints + Scats (collected)
- Ibex and Argali Sighted and photos
- Wolf, brown bears, Manul

Pilot Survey China



- Community-led Team
- Three photos (each of different adults)
- SL Footprints +
- Scats (collected)
- Ibex and Argali sighted
- Wolf and bear sighted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First Steps...

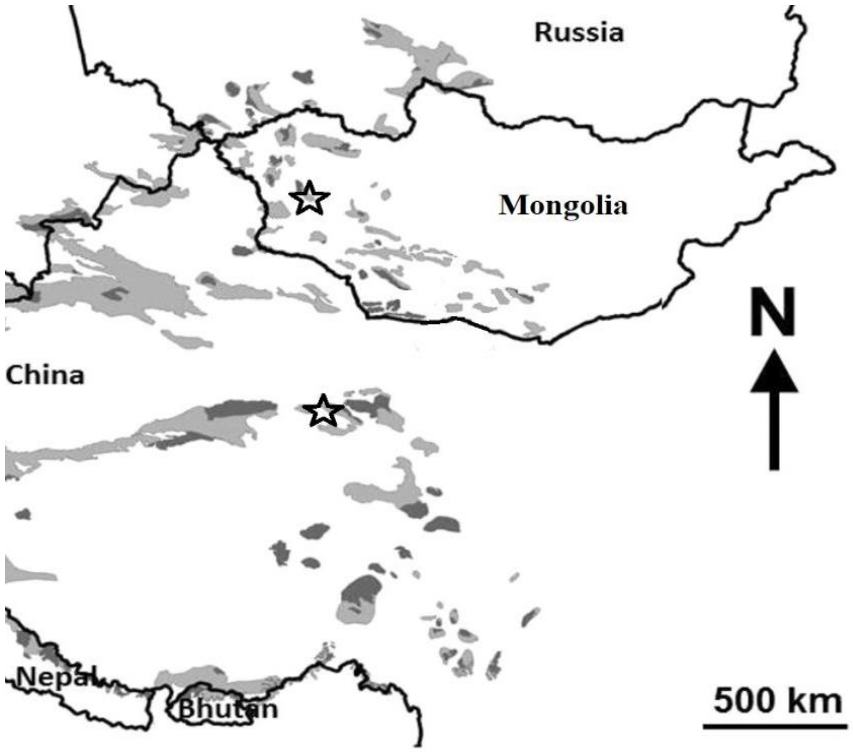
- Delivering effective and lasting snow leopard conservation
- Paving a way for cross-sectoral stakeholder engagement
- Working from ground–up, in concert with top-down efforts
- Overcoming more than physical boundaries

Team

- Kazakhstan
  - Alexey Grachev; Erik Baidavletov; Saltore Saparbayev; Dina Konysbaeva
- Kyrgyzstan
  - Irina Muschik; Tolkunbek Asykulov; Mirlan Dyldaev; Maxim Koshkin; Orosbek Omurzak Uulu; Askat Dabyrovich; Askar Davletbakov.
- China
  - Shi Kun; Wang Jun; Pan Guoliang; Chen Ying; Jo Hartmann; Chauncey Xiao; Luciano Atzeni; Cui Hongyan, Zhong Hua, Zhang Xiaozheng
- Elsewhere
  - David Mallon (U.K.); Alexander Karnaukhov (Russia); Kirsty Davies (Aus.)
- Funding
  - NABU (Germany); State Forestry and Grassland Administration of China; People's Trust for Endangered Species; Marwell Wildlife


ECO-BRIDGE

Part 2: Habitat connectivity and its dynamics of snow leopards in the Sutai mountain in Mongolia and Qilian mountains in China



Major aims

-- Understanding snow leopard population dynamics, habitat preference, wild prey resources, and the cats themselves.

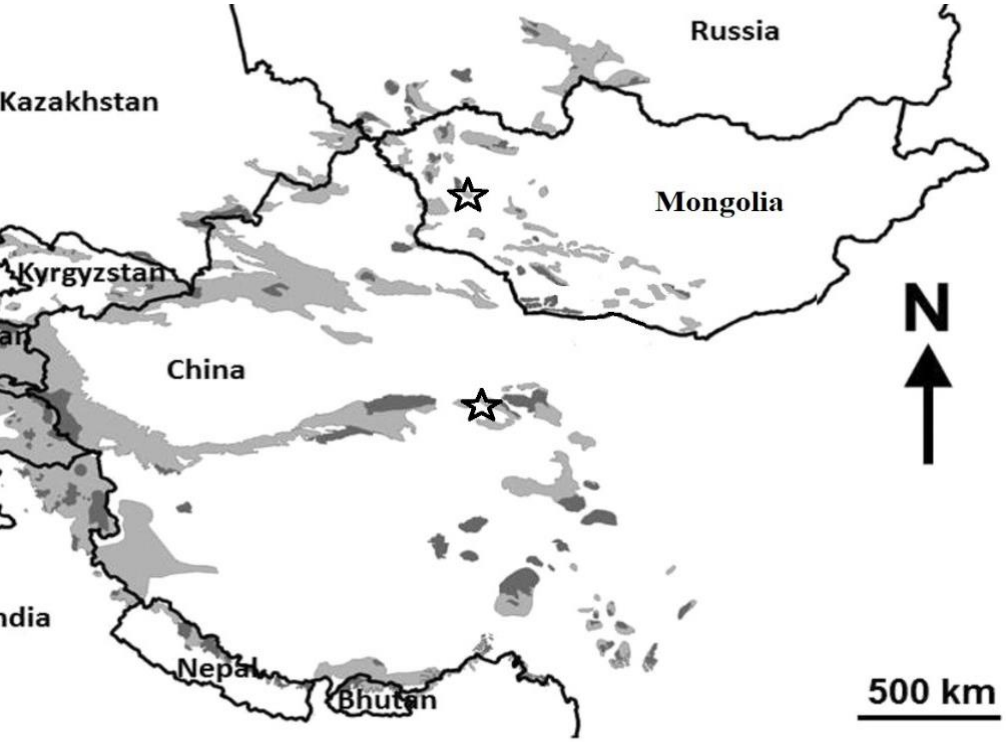
--GPS collaring, camera trapping and scatological analyzing on snow leopards in both Sutai mountain in Mongolia and Qilian Mountians in China.

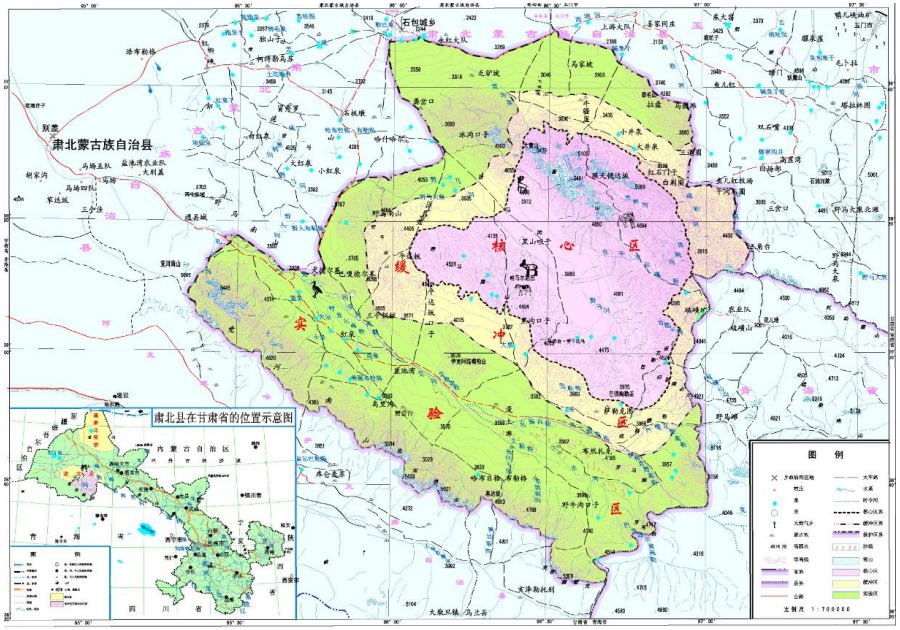
--Research cameras capture images of wild snow leopards as they move throughout their home ranges, while GPS collars provide us opportunity to track an individual snow leopard movement for an entire year.

--Better understand the landscape and the role of humans and wildlife alike, and genetics and hormonal research offer the opportunity to establish a snow leopard population's health and diversity.

Main study areas in Mongolia and China

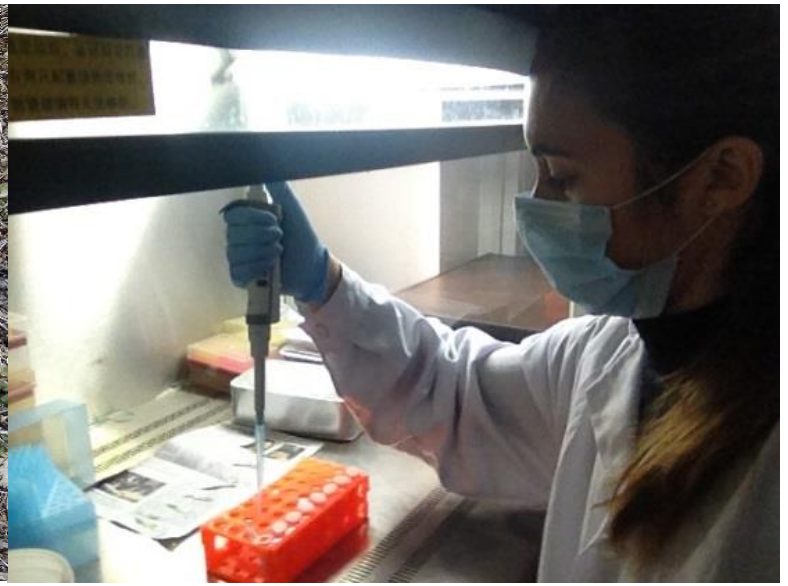
- Sutai Mountains in the North western Mongolia, consists of several mountain massifs separated by wide valleys.
- Yanchiwan subunit of Qilianshan National Parks, consists of three mountains, Shule Southern, Yema Southern and Danghe Southern coordinated by rivers and valleys.

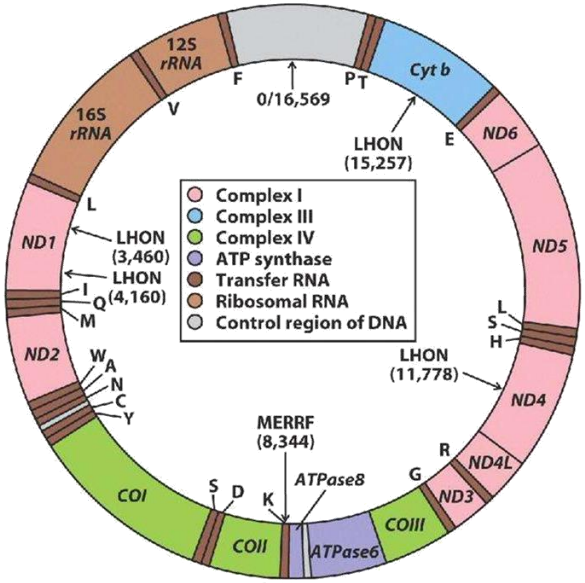


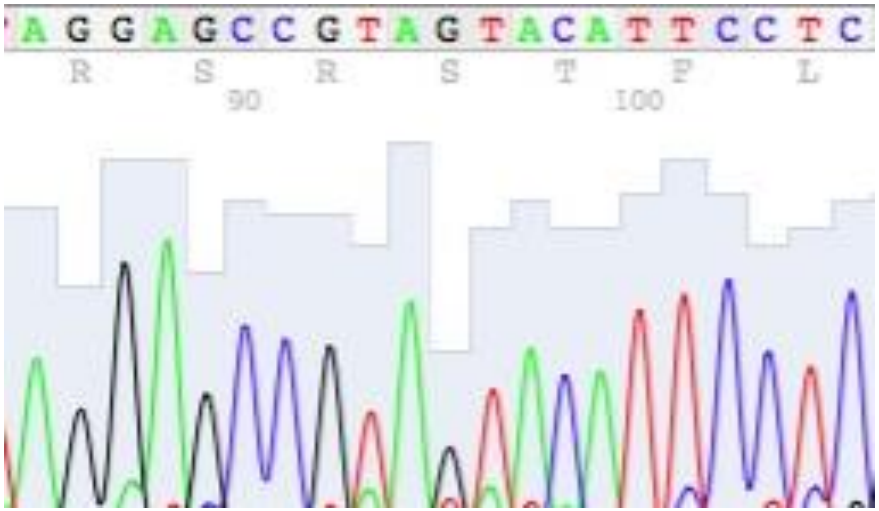


Camera trapping

Genetic research







Radio telemetry surveys

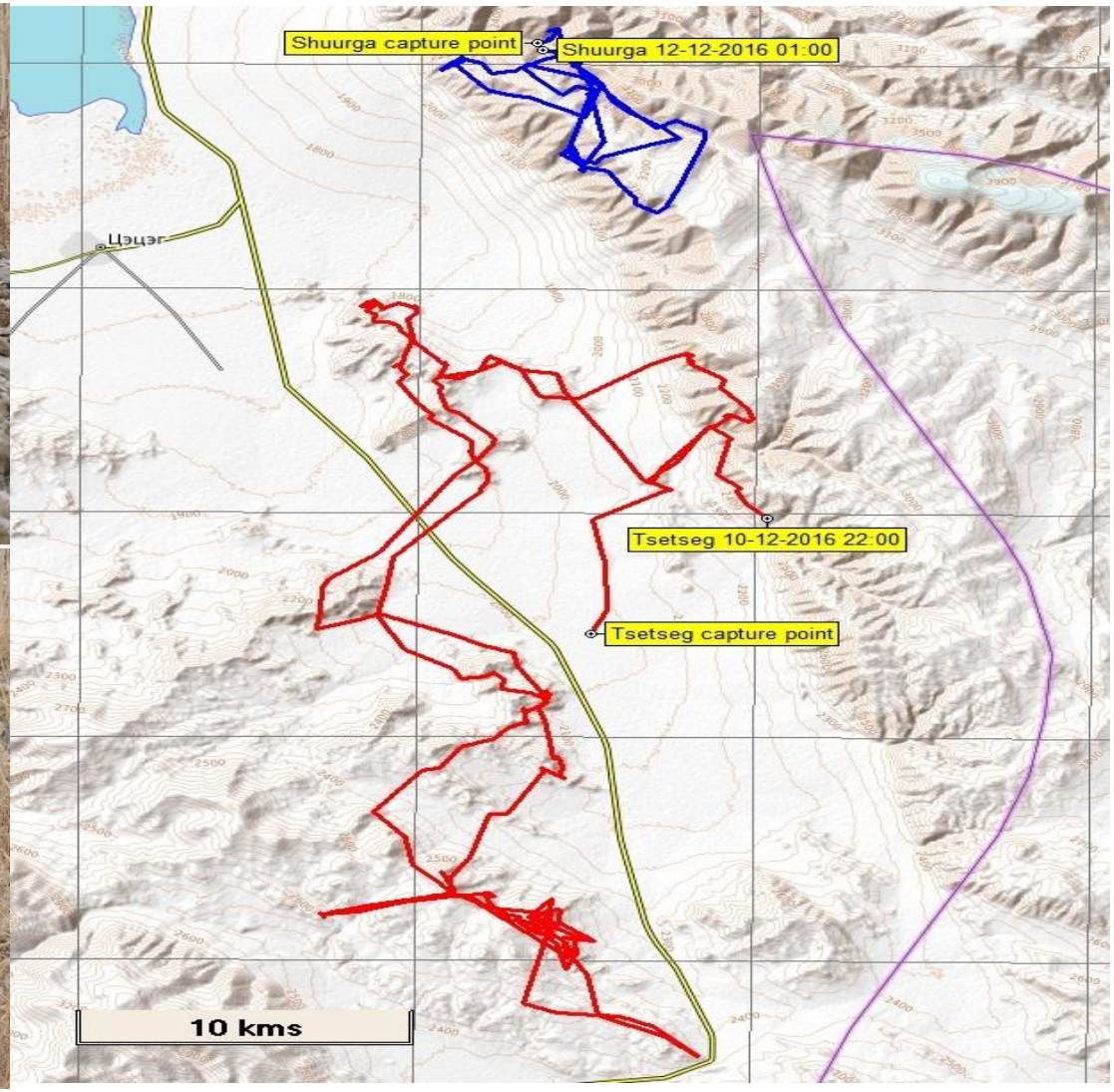


Figure. Tracking on movement of Collared snow leopards in Mongolia

Field survey in Yanchiwan

- Study performed in snow leopard conservation landscapes in Yanchiwan subunit of Qilian Mountain National Parks.
- We use over 100 camera stations for in 3 different mountain ranges (Shule Southern, Dandhe Southern and Yama Southern Mountains) in QMNP.

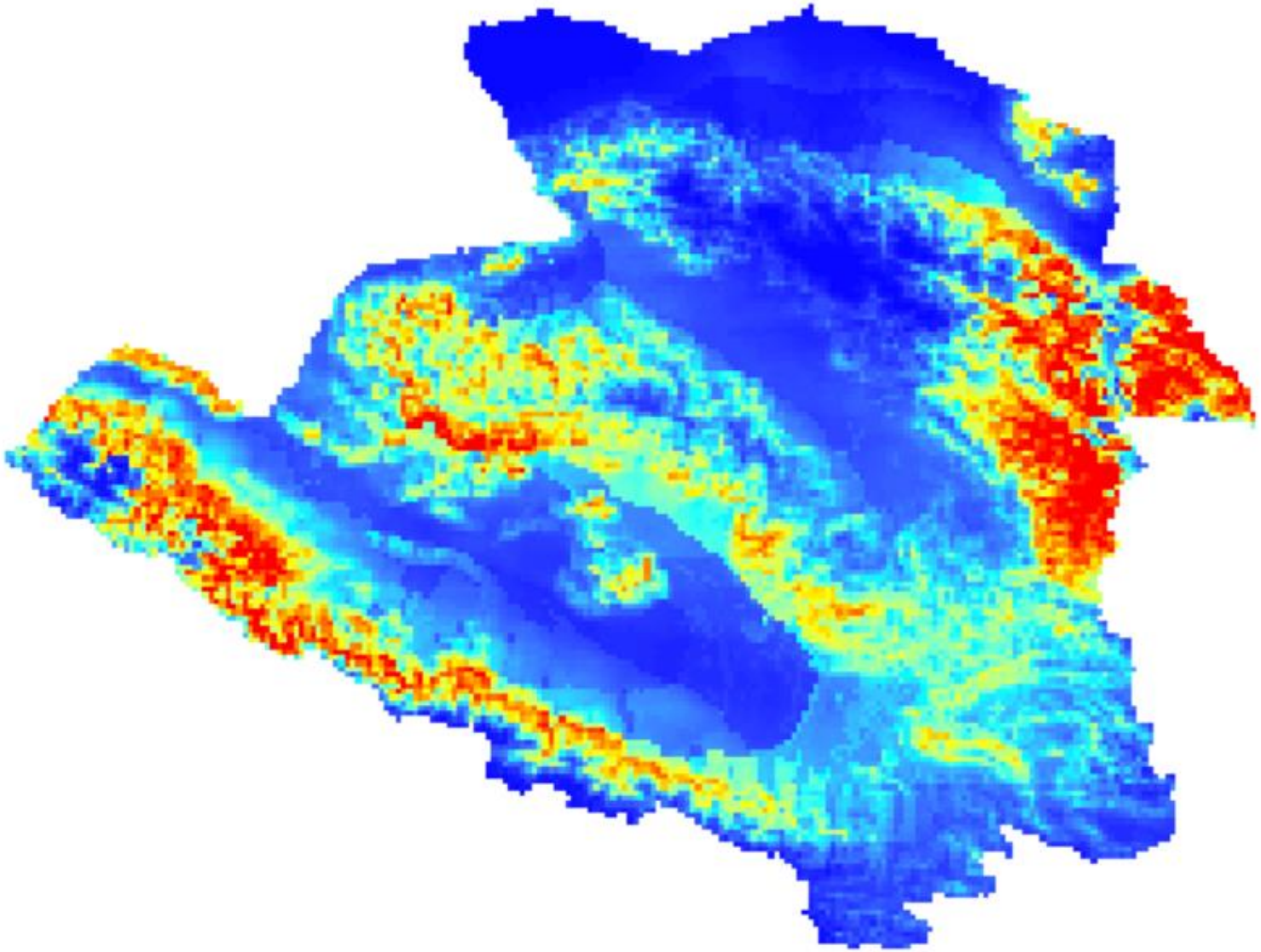


Figure. Optimal habitat for snow leopards predicted using all distribution records of field signs, camera trap images and identified scats of the high mountain species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57°F 14°C
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44°F 7°C
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2018/10/09 09:12:37

Part 3: Transboundary conservation: integrative approaches by international partnerships

Community based conservation

- Training field staff to conduct scientific survey and monitoring, in cooperation with academic partners;

- Working closely with local people, engaging them directly and providing employment working.

Conservation capacity building

Conservation capacity development will build on existing training programmes and will link closely with other actions to ensure their delivery.

Priority actions and National Goals

- First priority - conduct a National Status Review, including a Threats Analysis.
- High priority - find effective mechanisms linking SL conservation actions with human economic development, realizing coexistence.

Priority actions

i. National Status Review
ii. National Action Plan development
iii. Conservation capacity development
iv. Effective national monitoring system
v. Ecosystem management planning

National Goals

- Identify and stabilize existing healthy populations.
- Reverse declines and reduce threats now and into the future.
- Integrity of SL range structure, allowing natural dispersal and avoiding population bottlenecks and genetic isolation.
- Develop measures connecting critical linkage points, such as corridors, to ensure range integrity and ecological functionality.

Support from goverment

The National Status Nature Review & The National Action Plan for snow leopard in China

International collaboration - IUCN guidelines.

Additional financial assistance

- required to develop the mechanisms necessary to engage the full range of stakeholders. including cross-governmental inclusivity and effective engagement.

Funding requirements for these critical steps will be substantial.

Empowered trained people (conservation professionals & local community members)

National monitoring network

Undertake monitoring across the range

Forming backbone of further assessments

Providing robust evidence base

Prioritizing conservation actions

Support from cooperations

- Cross-ministry co-operations
- Provide funding of mutually beneficial activities
- Form base for sustainable ecosystem management principles across SL range in China.

Transboundary Conservation

Role of NGOs and funding partners

- Of all SL range states, China has the largest task. The scope of work required is large.
- Seek partners inside and outside of China that recognize and respect our need and place great value on the trusted organizations.
- Engage with governments and organizations, including inter-governmental, and non-governmental actors across civil society.

Thank You / Спасибо /谢谢