

Camera Trapping on Snow Leopards in the Muzat Valley, Tumor Feng Nature Reserve, Xinjiang, P. R. China (October-December 2005)

By Ma Ming

The main purpose of this work was to study the use of infrared trapping cameras to estimate Snow Leopard population size in a specific study area. This is the first time a study of this nature has taken place in China. During 71 days of field work, a total of 36 cameras were set up in Muzat Valley adjacent to the Tomur Nature Reserve in Xinjiang Province. We expended approximately 2094 trap days total. At least 32 pictures of Snow Leopards, 22 pictures of other wild species and 72 pictures of livestock were taken in the Muzat Valley. Meanwhile, 20 transects were run and 31 feces sample were collected. We also observed the behavior of ibex for 77.3 hours and found a total of approximately 264 ibexes in the research area.

The Xinjiang Snow Leopard Group (XSLG) was founded in 2004. During the years of 2004 and 2005, specialists from the XSLG, Xinjiang Conservation Foundation (XCF), and International Snow Leopard Trust (ISLT) studied the Snow Leopard in the Altay, Baitag, and Eastern Tianshan Mountains, as well as the Tumor Feng Area of the western Tianshan Mountains in Xinjiang. The research focused on signs of their presence left by Snow Leopards, such as footprint, scrapes, scent spray, urine, feces, claw rakes, hair, resting places, food remains, etc. (MaMing et al 2005, XuFeng et al 2005).

The field work this winter was the fourth Snow Leopard survey in Xinjiang. A total of 12 experts from China, India, Kyrgyzstan, and the United States, took part in the field work. The duration of the project from the initial stages of preparation through the completion of the field work, this project lasted six month. The field work itself lasted for 71 days, from October 18th to December 27th. After experiencing a cold winter, long and lonely nights, lofty and perilous peaks with narrow mountain paths, dangerous icy rivers, illness and even a terrible traffic accident, the members of the group finally accomplished the investigation successfully.

In addition to using the infrared triggered remote cameras to record the Snow Leopard, we also surveyed for ungulates (including looking at signs of their presence as discussed above, group size, and behavioral survey). Last but not the least, we also conducted interviews, did field training, and presented educational information for wildlife protection.

Some experts from Xinjiang Snow Leopard Group (XSLG), Chinese Academy of Sciences (CAS), Xinjiang Institute of Ecology and Geography, Department of Wildlife Protection in Xinjiang Forest Bureau, Management Bureau of Tomur Feng Protected Area, International Snow Leopard Trust (ISLT) and Xinjiang Conservation Fund(XCF) took part in the field work in this winter. This was the first such study conducted in China and it proved a real challenge for us.

Surveys took place in Muzat valley, Tumor Feng Protected Area, Xinjiang, China. The Tomur Feng, "Iron Peak" in Uygur, is the highest peak in the Tianshan Mountains, 7435.3 m above sea level. The range of Tianshan is continuous 3000 km long. And Tomur is the boundary peak between China and Kyrgyzstan (near Kazakhstan). Around the Tomur Peak there are 15 peaks at the altitude more than 6000 m, e.g. Snow Lotus Peak, Arktshi Peak (white jade in Uigur), Qulebos Peak (tiger in Uigur), Science Peak, Tailan Peak, Keqkar Peak (buck in Uigur) etc.

The altitudes for more than Five Mountains are over 6800m, which form the highest-peak group in Tianshan Mountain range.

The confirmed area is 1000 km² between in 80° 00' E and 80° 50' E, 41° 30' N and 42° 30' N, the north slope belongs to Zhaosu County of Ili Kazakh Autonomous State, and the south slope belongs to Wensu County and Baycheng County of Aksu Region. The Muzat River as a tributary of Tarim River is one of the most important channels of the ancient Silk Road from south to north.

Main research content

This work was the initiation of the Cameras Trapped Project in China. To do so, we conducted a sign survey on Snow Leopards and collected fecal samples for genetic assessments. Infrared triggered remote cameras were used to estimate the population size. We will compare estimates based on genetic tests and camera studies. We also included an ungulate survey to measure distribution, group size, population size, etc. (Day Behavior Study etc). A questionnaire also comprised a main component of our research and was used to interview local people and asked about: trading of Snow Leopard fur and bone, illegal hunting, protection and management, conflicts between the Snow Leopard and shepherd.

Results

The field work continued for 71 days and finished on 27 December 2005. All 71 rolls of the films were developed in January 2006. During this survey, a total 36 of cameras were placed in the field. There were a total of 779 pictures taken by 36 cameras with 2094 trap days in Muzat Valley. There are a total of 32 pictures of Snow Leopards in four areas and 16 points taken by 22 cameras. And there are also 22 pictures on other wild species and 72 pictures of livestock. The research area spanned about 250 km². About 20 transects were run and 31 samples of feces and hair were collected by XSLG. The behavior of ibex also was observed for total 77.3 hours in 18 days and totally found about 264 ibexes in the area.



Problems

The distribution of cameras was not ideal in some points, and did not succeed in capturing photographs. Sometimes the cameras were not aiming at good animal trails. The batteries did not work well in cold temperatures (from -15 degrees C to -20 degrees C). Also, the delay mode of some of the cameras failed to function correctly (the delay mode prevents multiple picture from being quickly taken when one animal passes).

We were unable to collect as many fecal sample for genetic analyses as we would have liked to because field work was halted so as to not disturb the Snow Leopards, and allow the bulk of information to be captured by the cameras. Also because the geographic limits of the area, the group was only able to run approximately 20 sign transects. During the winter few people live in the valley, and thus obtaining an adequate number of questionnaire responses was difficult.

The final results of this study will soon be reported. The China study is part of a larger project attempting to evaluate several methods of estimating snow leopard population size and trends. A full report is expected in summer of 2006.



Acknowledgements

Firstly we must say thanks to Dr. Thomas McCarthy, Dr. Raghunandan Singh Chundawat, Mr. Kubanychbek Jumabay Ulu, Mr. Kyle McCarthy, Mr. Toby Wheeler, Mr. Aizezi, Mr. Zhumahong,

Mr. Mulaming, Mr. Keranmu, Mr. Aisha, Mr. Tuniyazi, Mr. Ablimit, Mr. Zhang JinShuo, Miss Chen Yun, Mr. Hu Kanpin, Mr. Wen bo, Prof. Gu Jinhe, Prof. Li Weidong, Mr. Zhu Fude, Mr Niu Yaling, Mr. Tuerhong and Mr. Liu Pujiang for their support to the Snow Leopard project. We also must express our thanks to Xinjiang Forest Bureau, The management bureau of Tumor Feng Protected Area and Tianshan Forest Farm, Chinese Academy of Science s (CAS), Xinjiang Institute of Ecology and Geography CAS, International Snow Leopard Trust (ISLT), Xinjiang Conservation Fund (XCF), WWF-China, Kerry EAS Logistics Limited and DingHua Transport Company.

