



Saiga Related Activities in Mongolia, 2011-2015



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**Wildlife Conservation Society
Mongolia Program**

Areas of Work

- Population monitoring
- Ecological research
- Habitat research



Factors affecting survival and cause-specific mortality of saiga calves in Mongolia

BAYARBAATAR BUUVEIBAATAR,* JULIE K. YOUNG, JOEL BERGER, AMANDA E. FINE, BADAMJAV LKHAGVASUREN, PETER ZAHLER, AND TODD K. FULLER



Research goals:

- Determine survival rate
- Identify causes of mortality

Field study conducted during 2008-2012



A total of 156 newborn
animals were radio
collared

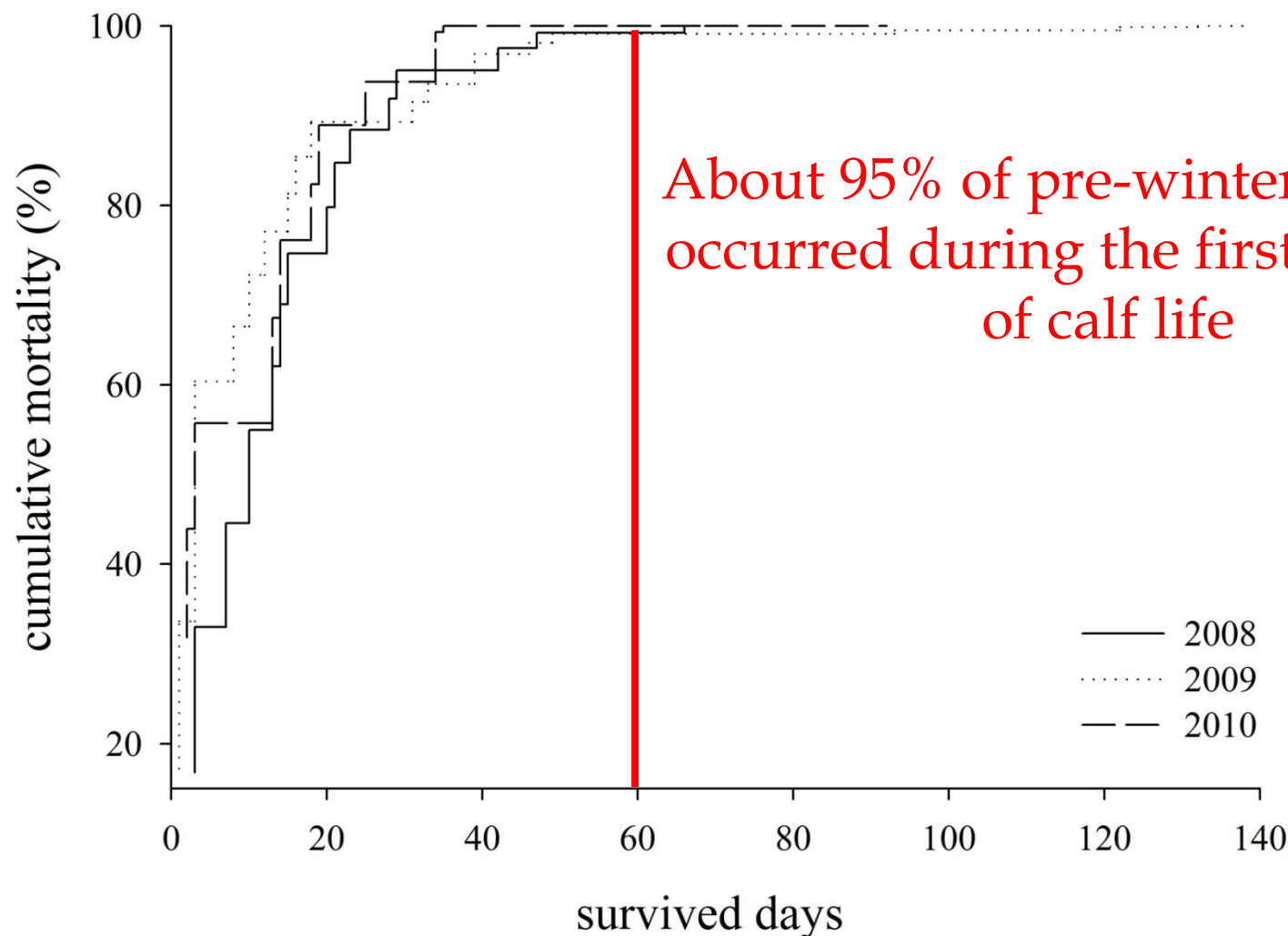


Survival rates

- Survival of calves during the 1st year was approximately 50%
- Year of capture and litter size played a key role affecting their survival



Survived days of marked animals among years



Calf mortalities

- We identified 3 sources of mortality - predation by raptors, foxes, and lynx
- Most predation was attributed to raptors, such as golden eagles and cinereous vultures



Calving location selection patterns of saiga antelope in Mongolia

B. Buuveibaatar^{1,2}, T. K. Fuller¹, J. K. Young³ & J. Berger^{4,5}

Our goal was to identify factors that influence birth location selection of Mongolian saiga and assess the general relationship between spatial patterns of calving locations to habitat characteristics

Parameter estimates of model for determining calving location selection of saiga

	Estimate	SE	Z	P	Variable importance
Intercept	1.077	0.708	1.521	0.128	
Distance to water	-0.249	0.051	4.861	0.000***	1.00
Slope	-0.184	0.082	2.229	0.025*	1.00
Distance to town	0.126	0.027	4.674	0.000***	1.00
NDVI	1.325	0.725	1.827	0.067	0.65





Tracking saiga horns to their population of origin using stable isotopes

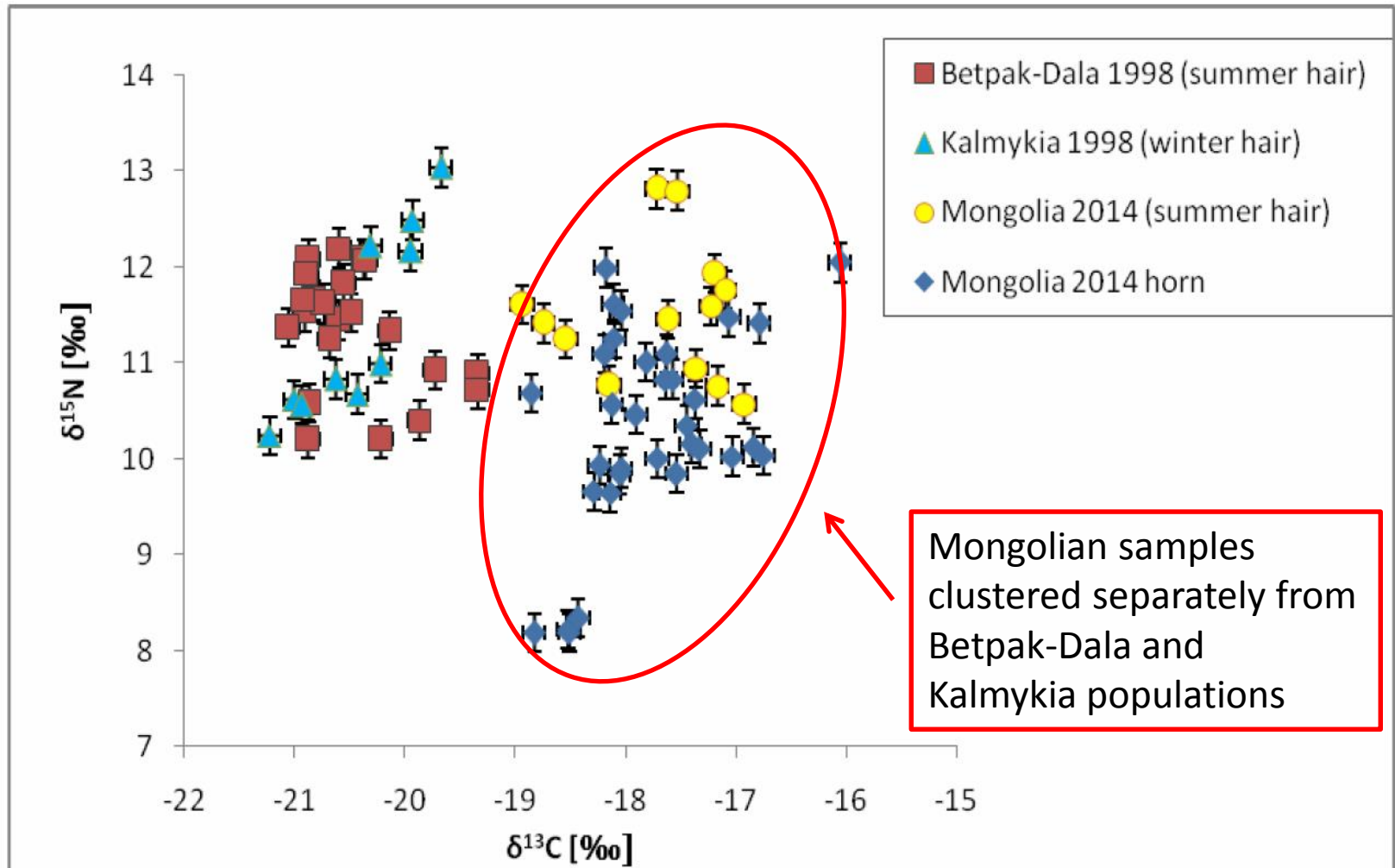
Matthias Schneider¹, Dorothee Drucker¹, Bayarbaatar Buuveibaatar² and Hervé Bocherens^{1,3}

A total of 78 hair and horns samples (46 were from Mongolia) have been analysed at University of Tübingen (Germany) in 2014:

- to check if different geographical origins can be tracked using stable isotopes



$\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values of saigas from Betpak-Dala, Kalmykia and Mongolia.



A person wearing a white hat and dark clothing is riding a brown horse across a grassy field in the foreground. In the background, there are dark, rocky hills and a large, prominent mountain with a thick layer of snow under a clear blue sky.

Implications

- Our results indicate that it is possible to discriminate between different saiga populations by the application of stable isotopes
- Stable isotopes can be potentially a useful tool in the future to help fighting against illegal trade of saiga horns

Population abundance and factors affecting the distribution of saiga antelopes in western Mongolia

Bayarbaatar Buurveibaatar^{1,2}, Buyanaa Chimeddorj³, Ganbat Olonbaatar⁴, Byambaatseren Purevdorj⁴, and Todd K. Fuller²

Goals

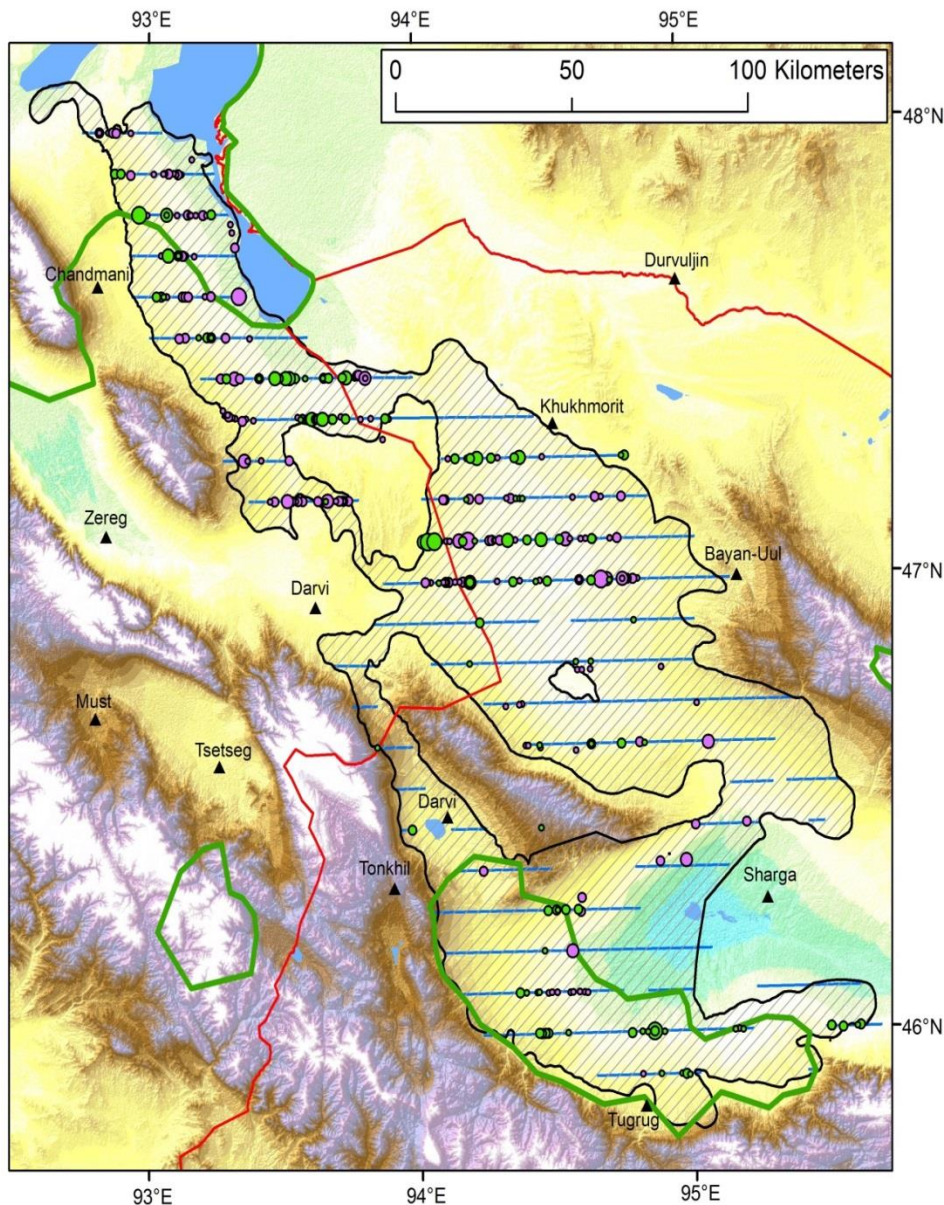
- Estimate saiga abundance across its entire range in western Mongolia
- Assess the human and environmental factors influencing saiga distribution



Methodology: Distance sampling line transect

- Study area - 14,713 sq.km
- 39 systematic line transects
- Spacing of 10 km
- Survey effort 1,505 km

Distribution and grouping patterns of saiga during winter and summer surveys in 2014, western Mongolia



- 148 groups (1,934 individuals) in the winter
- 243 groups (1,738 individuals) in the summer

Estimates of saiga density (D per km²) and abundance (N)

Season	D	95% CI	N	95% CI	(%CV)
Winter	1.20	0.78 – 1.83	17,696	11,584 – 27,034	21.50
Summer	0.81	0.56 – 1.17	12,202	8,371 – 17,265	18.24
Average	1.01	0.75 – 1.35	14,869	11,066 – 19,978	15.00

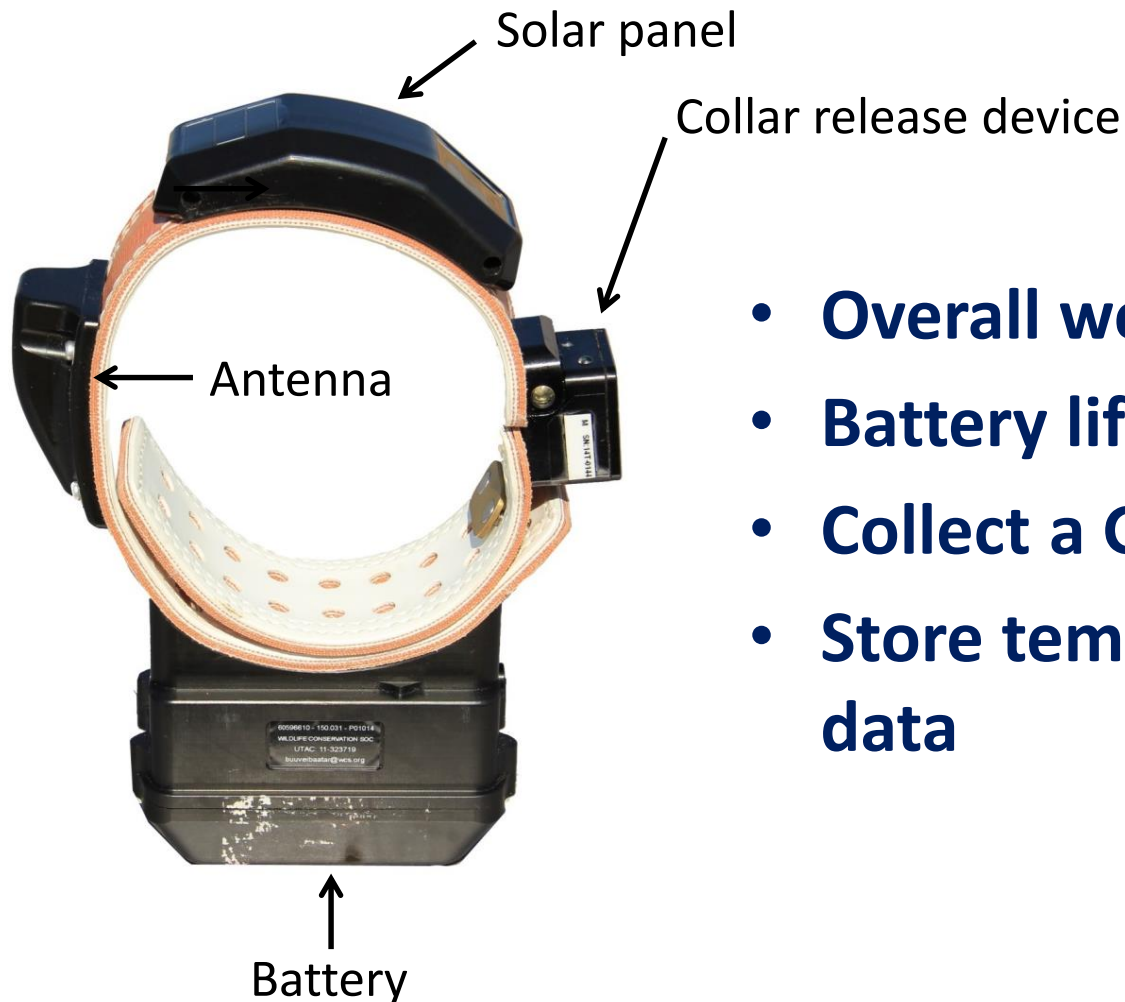
Saiga movement study



A total of 8 saiga were fitted with GPS collars during Sep 30 – Oct 02, 2015

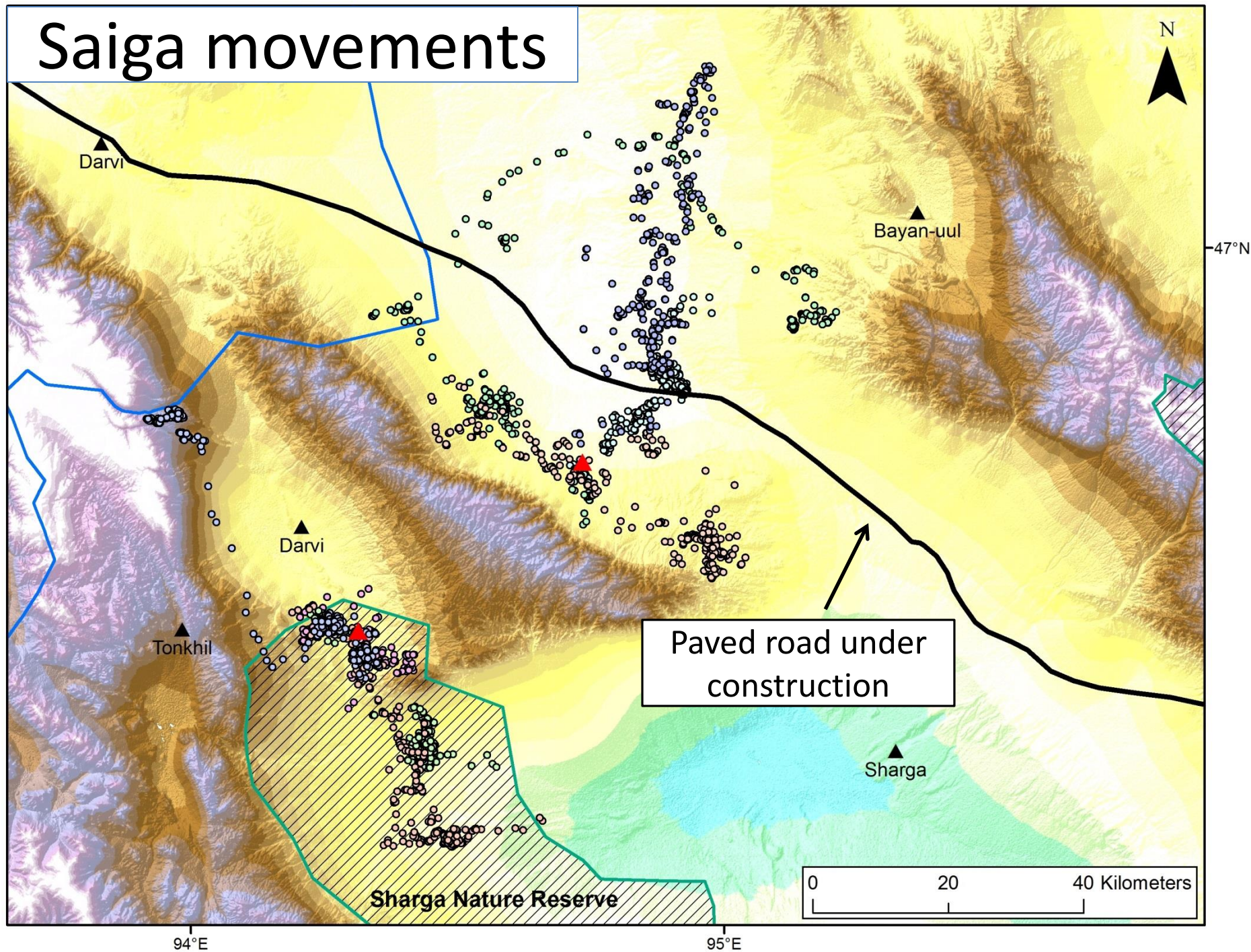


The Sirtrack GPS collar



- Overall weight 450 g
- Battery life 1.5 year
- Collect a GPS location every 2h
- Store temperature and activity data

Saiga movements



What needs to be done?

- Genetic study (samples are being analyzed at University of Copenhagen, Denmark)
- Saiga health and disease transmission between saiga and livestock
- Determination of road impacts on saiga movements needs to be intensified

