

THIRD MEETING OF THE SIGNATORIES TO THE MEMORANDUM OF UNDERSTANDING  
CONCERNING CONSERVATION, RESTORATION AND SUSTAINABLE USE OF THE SAIGA  
ANTELOPE

# National implementation of the CMS Guidelines: the Mongolian experience

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# Outlines

- Background
- Existing experience: national and international
- Standard
- A way forward

# Background

- Mongolia is home for many iconic species



# Last unspoiled grassland and still untouched Gobi ecosystems



# CMS listed migratory species:

- Appendix I
- Wild camel (*Camelus bactrianus*)



- Snow leopard (*Panthera uncia*)



# CMS listed migratory species:

Appendix II

Mongolian gazelle



Argali wild sheep



Wild ass - khulan



Goitered gazelle



Mongolian saiga

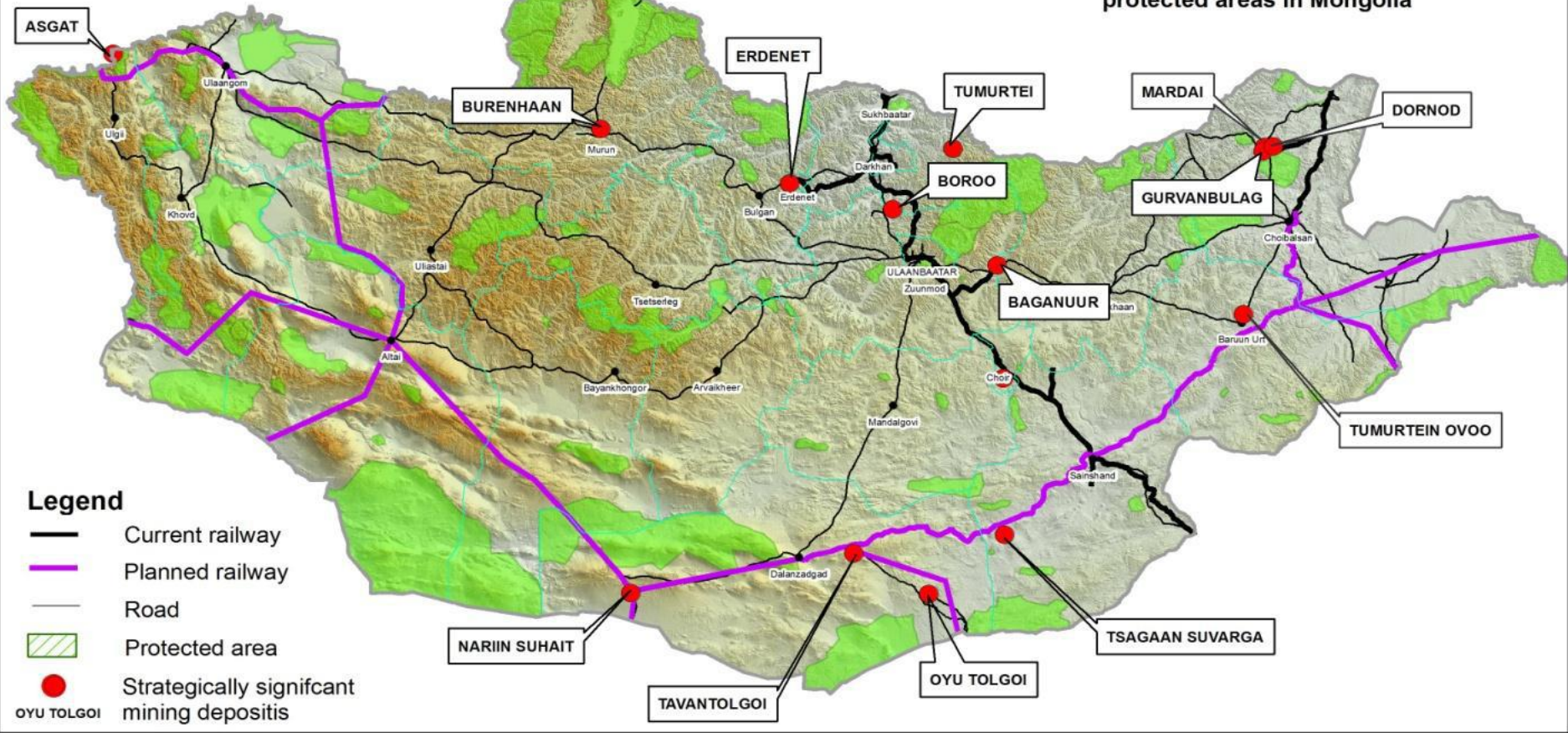


# Threats to migrations

- 
- Poaching & unsustainable hunting
  - Competition on pasture and water sources
  - Infrastructure development
    - roads
    - railroads
    - international border fences
  - Degradation & desertification
  - Climate change etc.

# Infrastructure development and wildlife

Existing and planned railroads, mining deposits and protected areas in Mongolia





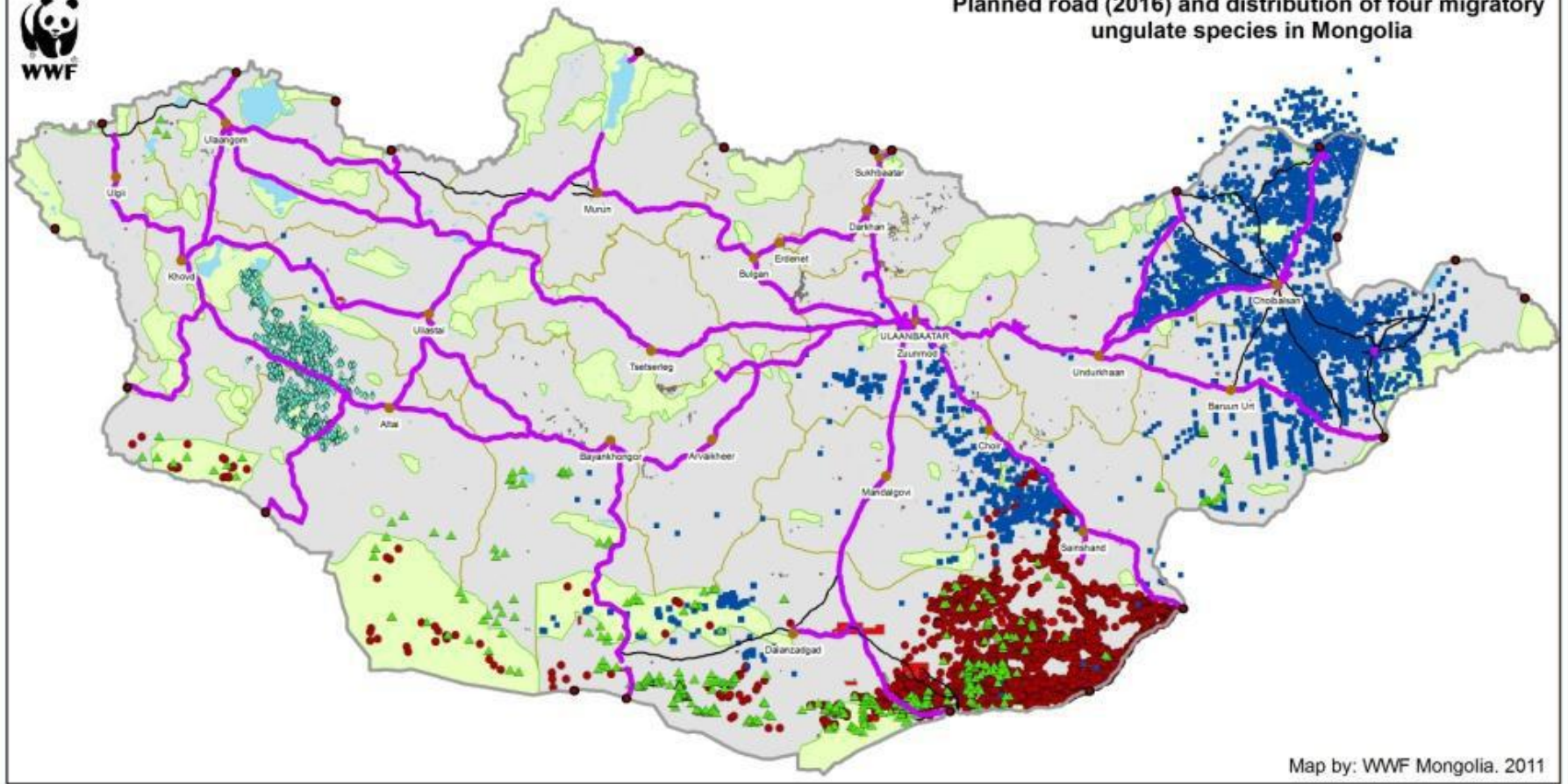
# Infrastructure development & wildlife



# Infrastructure development & wildlife



Planned road (2016) and distribution of four migratory ungulate species in Mongolia



Map by: WWF Mongolia. 2011

Protected area  
 Paved roads

Equus hemionus location  
Source: 2003-2005 N.Batsaikhan, M.Shtubbe, Petra Kaszensky, B.Lkhagvasuren, B.Chimeddorj  
2007-2008 N.Batsaikhan, M.Shtubbe, 2009 Institute of Biology, 2010 WWF Mongolia

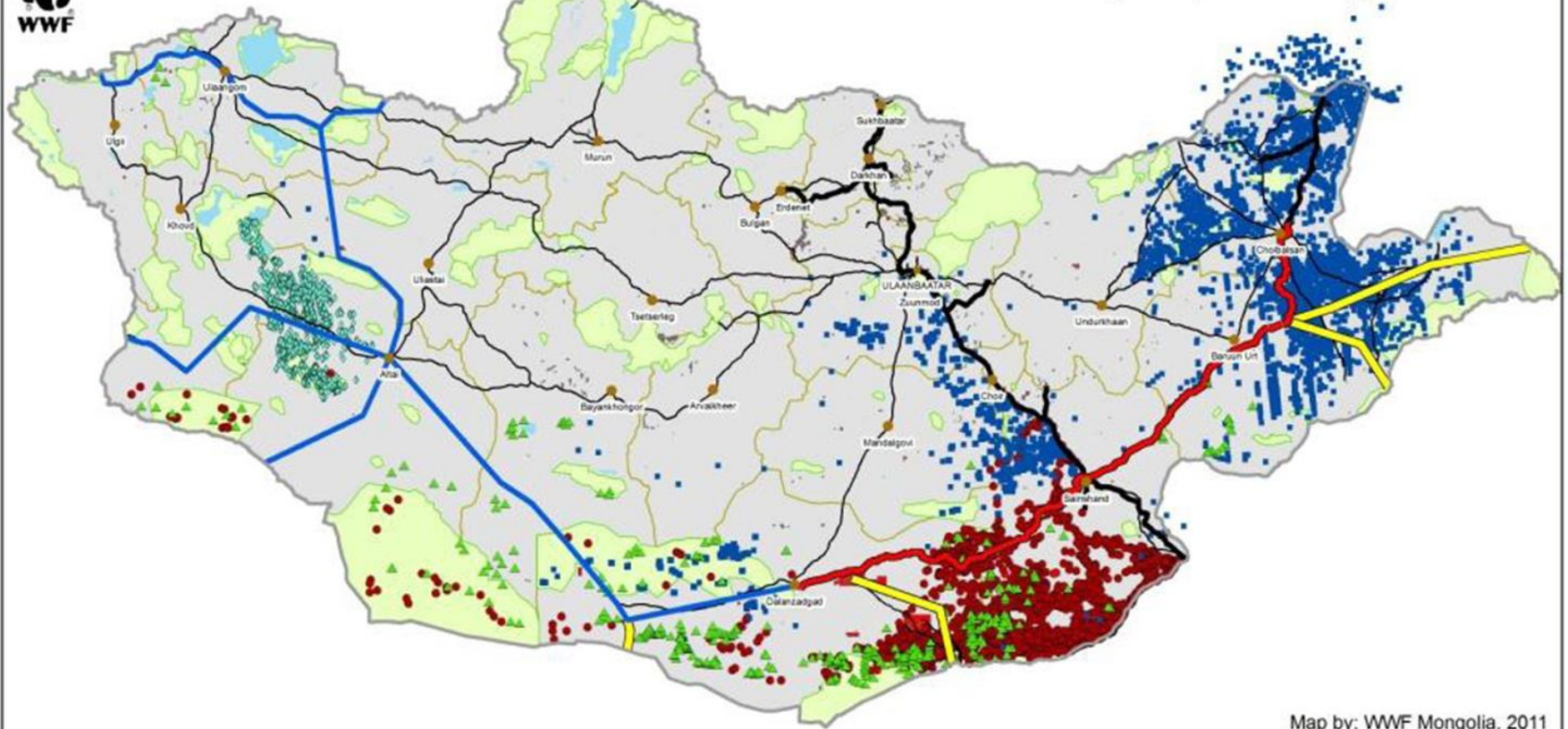
Saiga tatarica location  
Source: 2010 WWF Mongolia

Goitered gazelle location  
Source: 2003-2007 N.Batsaikhan, M.Shtubbe  
2009 Institute of Biology, 2010 WWF Mongolia

Procopre gutturosa location  
Source: 2002-2005 B.Lkhagvasuren, B.Chimeddorj, B.Buuveibaatar, Ito Takehiko, Kirk Olson.  
2009 Institute of Biology, 2010 WWF Mongolia



## Planned railway (2025) and distribution of four migratory ungulate species in Mongolia



Map by: WWF Mongolia. 2011

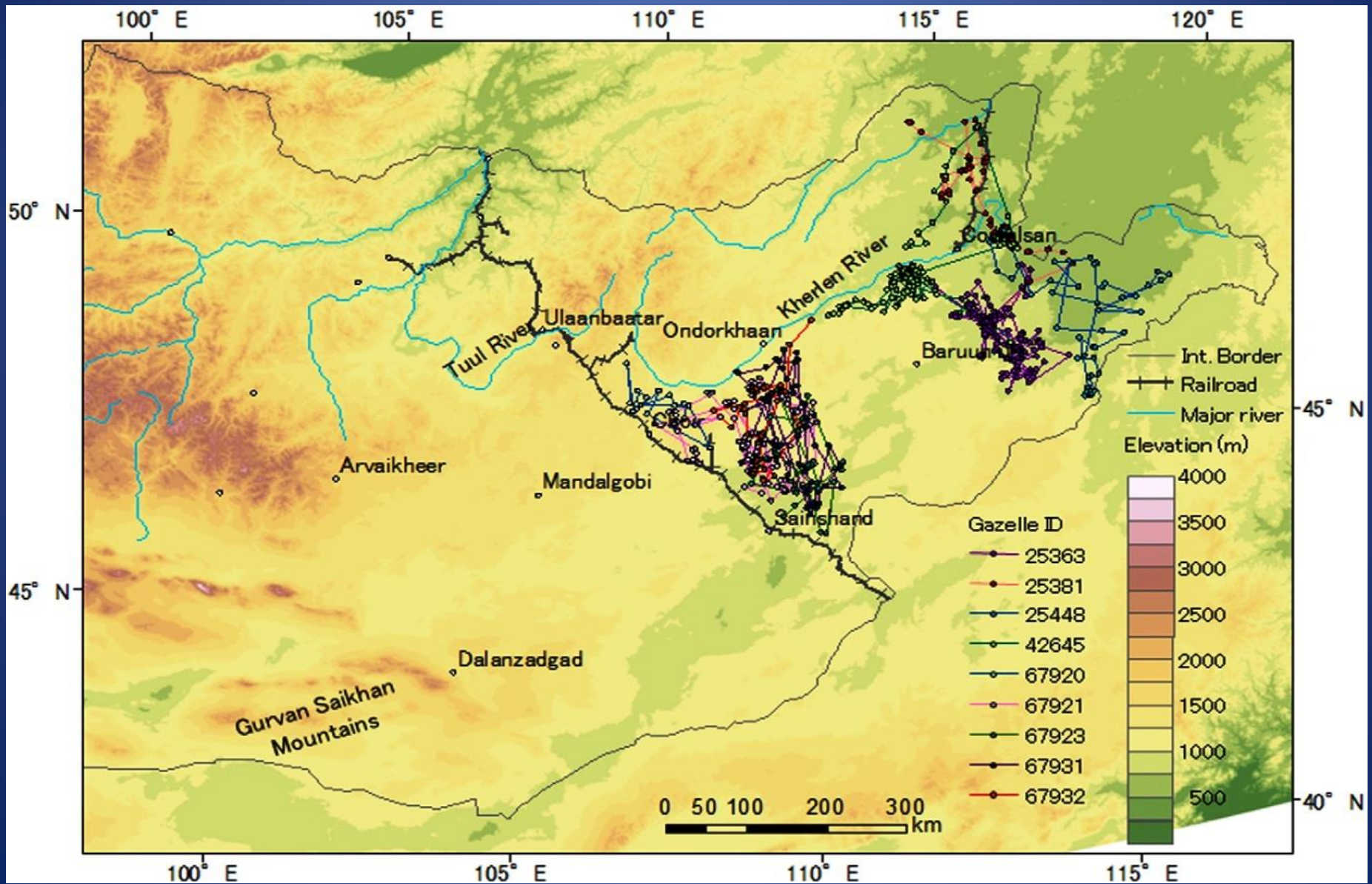
- Protected area
- Current railway
- Road

- Planned railway:
- First phase
  - Second phase
  - Third phase

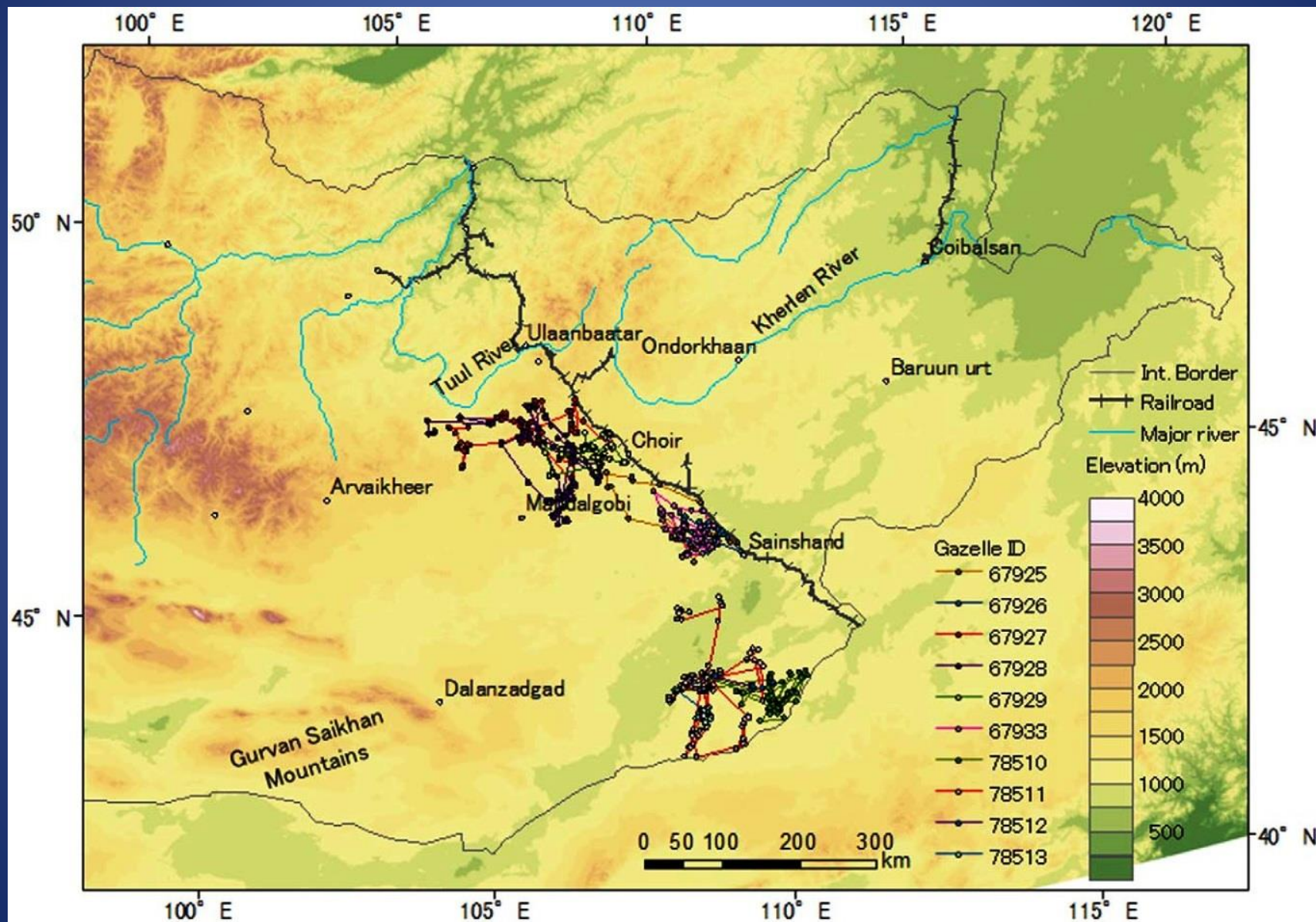
- Equus hemionus location  
Source: 2003-2005 N.Batsaikhan, M.Shtubbe, Petra Kaszensky, B.Lkhagvasuren, B.Chimeddorj, 2007-2008 N.Batsaikhan, M.Shtubbe, 2009 Institute of Biology, 2010 WWF Mongolia
- Saiga tatarica location  
Source: 2010 WWF Mongolia

- Goitered gazelle location  
Source: 2003-2007 N.Batsaikhan, M.Shtubbe, 2009 Institute of Biology, 2010 WWF Mongolia
- Procacpre gutturosa location  
Source: 2002-2005 B.Lkhagvasuren, B.Chimeddorj, B.Buuveibaatar, Ito Takehiko, Kirk Olson, 2009 Institute of Biology, 2010 WWF Mongolia

# Migration studies



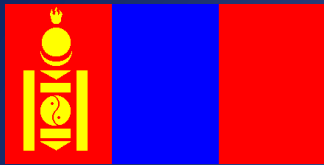
# Migration studies (continued)





# Pre-approval activities

- IoB and WCS initiative
- Meeting with Minister
- Study tour
- Working group establishment
- Series of stakeholders workshops and meetings
- Expert working group establishment
- Standard drafts, field trip and discussions and comments from different stakeholders
- Standard approval
- International conference (CMS, German & Mongolian Government, Academia, WCS etc)



# International and national experience Mongolia

Ухаа Худаг ~ Гашуун Сухайтын Төмөр Замын Төсөл  
Ukhaa Khudag ~ Gashuun Sukhait Railway Project

ХООЛОЙН ХИЙЦИЙН ЗУРАГ  
(ХҮЧИТГЭСЭН БЕТОН ДӨРВӨЛЖИН ХООЛОЙ: ID2 ~ ID41)

CULVERT STRUCTURE DRAWING  
(REINFORCEMENT CONCRETE BOX : ID2 ~ ID41)

"Samsung C&T Corporation" SCTECM LLC / Project Manager /

LEE JEONG YEOL

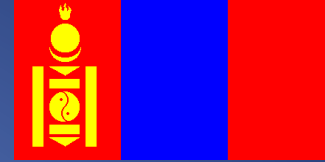
Seoyeong Engineering Co.,Ltd. / Design Engineer /

KIM YU BONG

Улаанбаатар Хот  
2013 оны 9-р сар



# Mongolia



- “Law on Roads” , 1998
- “Law on railroad transportation, 2007
- “Law on Fauna” , 2012
- MNS 5833: 2014 on constructions along railroads and movement requirements;
- MNS 6229:2010 “1520mm-railroad requirements”;
- MNS 6060:2010 on railroad lines and structures;
- Set of regulations on railroads, 2008;
- “Railroad safety zone regulations” 2011 Mongolian Government resolution
- etc.



# Russian Federation

ГОСТ Р 52289-2004

Группа Д28

**НАЦИОНАЛЬНЫЙ СТАНДАРТ РОССИЙСКОЙ ФЕДЕРАЦИИ**

**Технические средства организации дорожного движения**

**ПРАВИЛА ПРИМЕНЕНИЯ ДОРОЖНЫХ ЗНАКОВ, РАЗМЕТКИ, СВЕТОФОРОВ,  
ДОРОЖНЫХ ОГРАЖДЕНИЙ И НАПРАВЛЯЮЩИХ УСТРОЙСТВ**

**Traffic control devices.**

**Rules of application of traffic signs, markings, traffic lights, guardrails and delineators**

ОКС 03.220.20  
ОКП 52 1000

Дата введения 2006-01-01



# Russian Federation



5.2.29 Знак 1.27 "**Дикие животные**" устанавливают перед участками дорог, проходящими по территории заповедников, охотничьих хозяйств, лесных массивов, и другими участками дорог, если на них возможно появление диких животных, и применяют с табличкой 8.2.1.

## ПРАВИЛА ЭКСПЛУАТАЦИИ ЖЕЛЕЗНОДОРОЖНЫХ ПЕРЕЕЗДОВ РОССИЙСКОЙ ФЕДЕРАЦИИ

УТВЕРЖДЕНЫ

приказом Минтранса России

от \_\_\_\_\_ 2009 г. № \_\_\_\_\_

- Основные требования при проезде транспортных средств и прогоне скота под искусственными сооружениями железнодорожного транспорта

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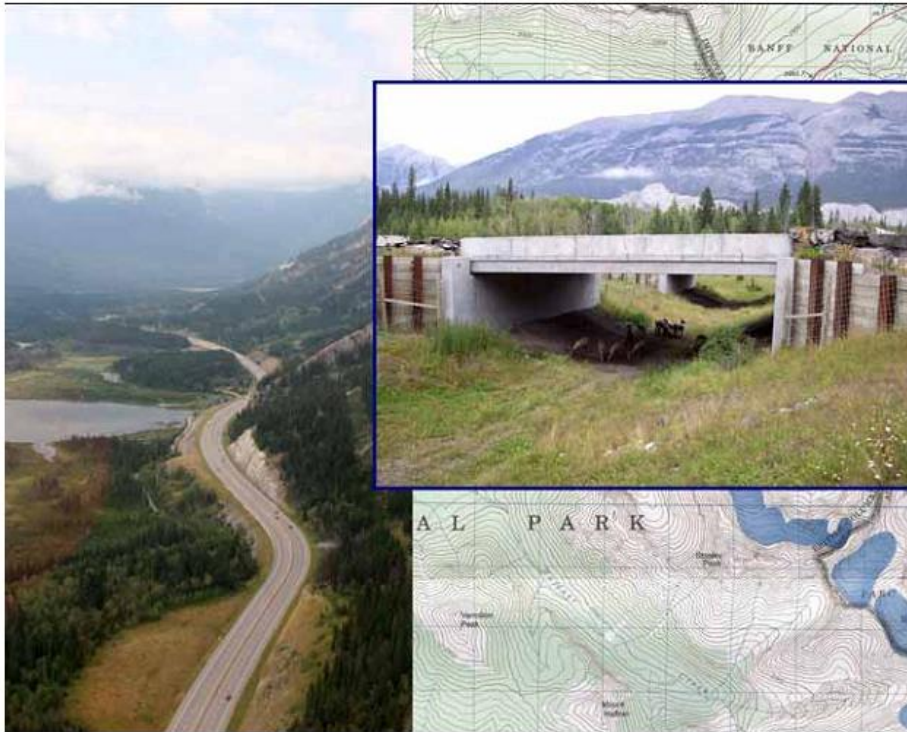
# North America



## WILDLIFE CROSSING STRUCTURE HANDBOOK Design and Evaluation in North America

Publication No. FHWA-CFL/TD-11-003

March 2011



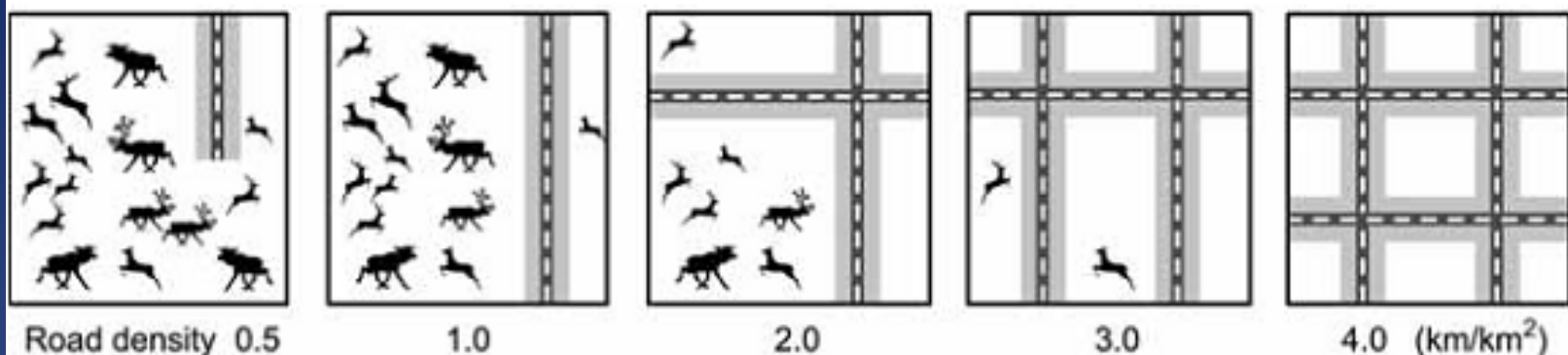
223 pp



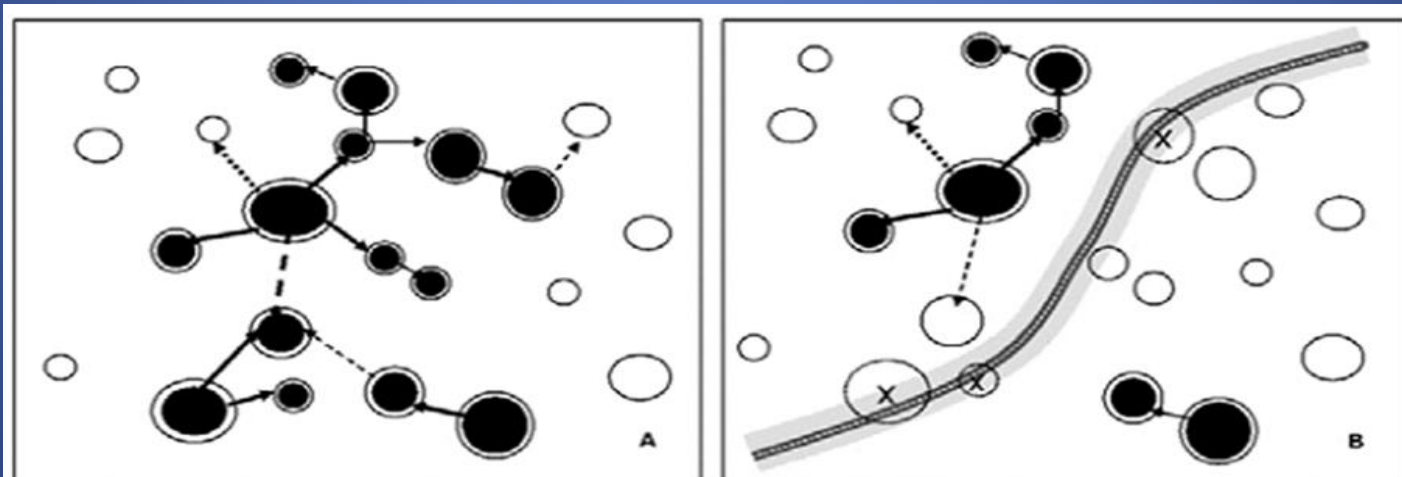
U.S. Department  
of Transportation  
**Federal Highway  
Administration**



**Central Federal Lands Highway Division**  
12300 West Dakota Avenue  
Lakewood, CO 80228



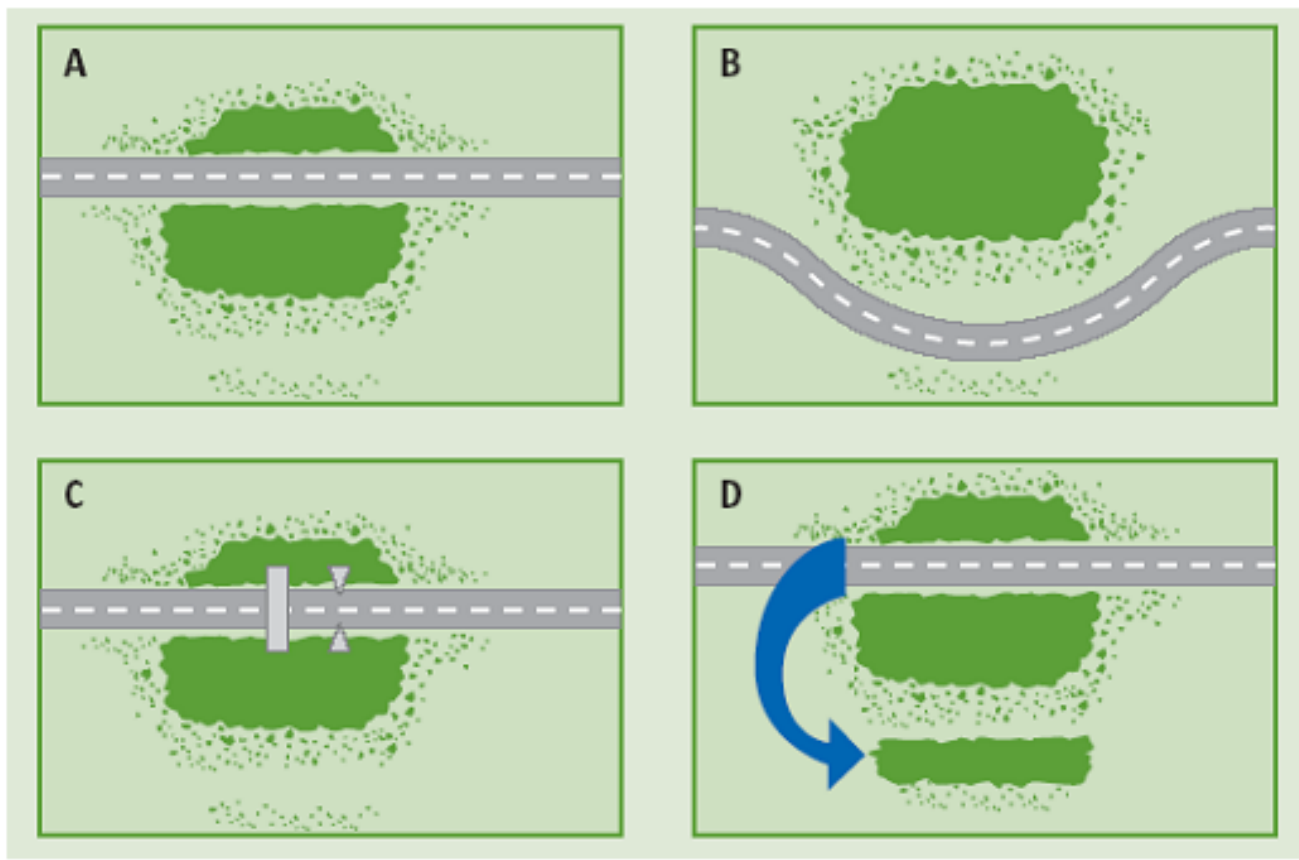
**Figure 4. Schematic. Increasing road density fragments habitat into smaller patches and creates a disproportionate amount of edge habitat (from Iuell 2005).**



**Figure 5. Schematic. Barrier effects on populations. (A) A metapopulation consists of a network of local subpopulations that may vary in size and local dynamics but are linked to each other through dispersal. (B) Road construction causes a disturbance and loss of local populations within the network. In addition, infrastructure imposes a barrier to dispersal that can prevent recolonisation and isolate local subpopulations from the rest of the metapopulation. If important source populations are cut off from the remaining sink populations, the entire metapopulation may be at risk of extinction (from Iuell 2005).**

# Mitigation measures

## Rule of Thumb



**Figure 11. Schematic. Representation of road construction and habitat (A) fragmentation (B) avoidance (C) mitigation by use of under/overpasses, and (D) compensation by creation of replacement habitat nearby (from Iuell et al. 2005).**



Underpasses



Expansion Bridge

Expanded path for wildlife



Overpass

WILDLIFE-VEHICLE COLLISION AND  
CROSSING MITIGATION MEASURES:  
A TOOLBOX FOR THE MONTANA  
DEPARTMENT OF TRANSPORTATION

FHWAMT-07-002/8117-34

*Final Report*

prepared for  
THE STATE OF MONTANA  
DEPARTMENT OF TRANSPORTATION

in cooperation with  
THE U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

*May 2007*

prepared by  
Western Transportation Institute  
Montana State University • Bozeman

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A. Kociolek  
P. McGowen  
A. Hardy  
A.P. Clevenger  
R. Ament



RESEARCH PROGRAMS



Montana state guidelines



# Study tour



# Study tour





# EU guideline



**COST 341**

## Habitat Fragmentation due to Transportation Infrastructure

**WILDLIFE AND TRAFFIC**

A European Handbook for Identifying Conflicts and Designing Solutions



### Authors:

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Tørsløv, Niels (DK)  
Wandall, Barbara le Maire (DK)

**Title of document** Iuell, B., Bekker, G.J., Cuperus, R., Dufek, J., Fry, G., Hicks, C., Hlaváč, V., Keller, V., B., Rosell, C., Sangwine, T., Tørsløv, N., Wandall, B. le Maire, (Eds.) 2003. Wildlife and Traffic: A European Handbook for Identifying Conflicts and Designing Solutions.





CMS

## Convention on Migratory Species

# Guidelines for Addressing the Impact of Linear Infrastructure on Migratory Ungulates in Central Asia

These guidelines have been written to provide guidance on avoiding and mitigating impacts of linear infrastructure development on large mammal migratory species in Central Asia and encouraging the development of international, regional and national policies.



STANDARD OF MONGOLIA

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Passage for wild animals along auto and rail roads in steppe and Gobi region. General requirements

MNS : 2015

Official edition

MONGOLIAN AGENCY FOR STANDARDIZATION AND METROLOGY  
Ulaanbaatar City  
2015

**MNS 6515: 2015- Passages for wild animals along auto and rail roads in steppe and Gobi region.**

**Approved:  
by National Standard Council's  
resolution #26 on June 25, 2015**

# Authorities involved

*Ministry of Nature, Green Development and Tourism;*  
*Ministry of Transportation*  
*Institute of General & Experimental Biology, MAS;*  
*WCS Mongolia;*  
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- **Experts involved:**

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*Planning Company;*  
*Tugs-Yalalt, Road planning engineer;*  
*Dr. Gerelnyam D., Senior Officer, MT.*

# MNS 6515: 2015- Passages for wild animals along auto and rail roads in steppe and Gobi region.

- Content:

- Terminology
- Road constructions and types
- Types of Passages for wildlife
- Requirements for passages planning
- Requirements for under and over passes' designs, sizes
- Technical requirements for construction materials
- General requirements for passage use
- Monitoring and evaluation



# A way forward ...

- A large monitoring fund financed by construction projects & government
  - Develop sound monitoring techniques for key species
  - Obtain baseline data independent of specific projects
  - Increase our system understanding

# SOLUTIONS FOR WILDLIFE-FRIENDLY INFRASTRUCTURE IN CENTRAL ASIA

## CMS Actions

- > Intergovernmental legal framework;
- > Facilitation of multi-stakeholder dialogue;
- > Provision of expertise & practical solutions;
- > Review of progress & compliance.

## CMS Tools for Central Asia

### > Guidelines:

- > Saiga Crossing Options;
- > CMS Infrastructure Guidelines.

### > Regional frameworks for conservation:

- > Central Asian Mammals Initiative (CAMI);
- > Memoranda of Understanding (MOU) for the Saiga Antelope and Bukhara Deer;
- > International Single Species Action Plan for the Conservation of Argali sheep.

Find out more at [www.cms.int/cami](http://www.cms.int/cami)



Pronghorn passing under wildlife-friendly fence © J. Carlson



Chiru passing under railway bridge © X. Lin

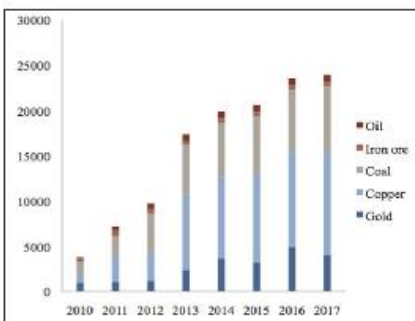
## Wildlife-friendly infrastructure design

Nowadays, there are many practical solutions, which can be applied to all types of linear infrastructure to allow wildlife to pass freely. For fencing, it is often feasible to find temporary solutions by removing the fence during periods of migration.

## Mining production forecast by mineral type, min USD

Extraction of natural resources has grown rapidly in the past decade in Central Asia, and with this, the construction of roads, railways and other infrastructure is booming.

Graph source: ACI Mongolia



## CMS at a glance

The Convention on the Conservation of Migratory Species of Wild Animals (CMS), also known as the Bonn Convention, is a treaty dedicated to the conservation of wildlife beyond national borders worldwide. It has more than 120 Member States.

## CMS instruments

Animals receive protection under CMS through listing on its two Appendices, through global/regional agreements, action plans and a suite of guidelines.

## Contact



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[www.cms.int](http://www.cms.int)



## Fact Sheet

Convention on the Conservation of Migratory Species of Wild Animals



# SOLUTIONS FOR WILDLIFE-FRIENDLY INFRASTRUCTURE IN CENTRAL ASIA

Mongolian gazelles crossing a highway © ganbayanhureleen

## HOTSPOT FOR MIGRATION

Central Asia is home to some of the most spectacular and ecologically important mammal migrations in the world. However, the future of these migrations is in jeopardy as railways, fences and other infrastructure threaten to bisect many essential migratory routes, often creating impenetrable barriers to the movement of wildlife and people.

## What is linear infrastructure?

- > Roads
- > Railway lines
- > Power and communication lines
- > Oil, gas and water pipelines (including trenches during construction)
- > Fencing
- > Artificial ridges
- > Canals (especially during construction)

## Why can it be a problem?

The impacts of linear infrastructure on migratory wildlife include habitat fragmentation, increased ease of access for poachers, disturbance; alteration of natural ecological processes such as fire and hydrological regimes, and the introduction of invasive species and diseases, as well as the threat of direct mortality through collisions with moving vehicles and entanglement in fencing.

## International Infrastructure Guidelines

In November 2014, the 120 CMS Parties adopted guidelines on mitigating the impact of linear infrastructure and related disturbances on mammals in Central Asia.

The guidelines address:

- > Types and impacts of linear infrastructure;
- > Assessment of status across Central Asian countries;
- > Legal frameworks;
- > Guidelines for reducing impacts of linear infrastructure, concerning:
  - > Mitigation;
  - > Planning and design;
  - > Assessment;
  - > Construction standards and solutions;
  - > Monitoring and evaluation.

Together, these principles establish a framework for designing and implementing linear infrastructure and verifying the success of all avoidance, mitigation and compensation measures.



Mongolian gazelle

Argali horns © Rosen

Thank you very much for your  
attention!

