Dauria Rivers: adaptation to climate change in transboundary headwaters of the Amur River Basin

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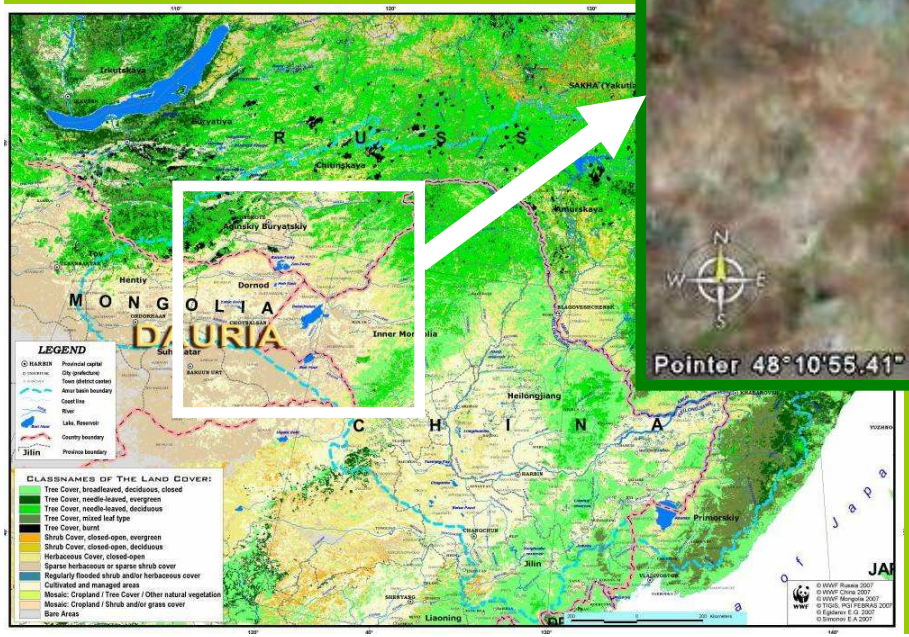
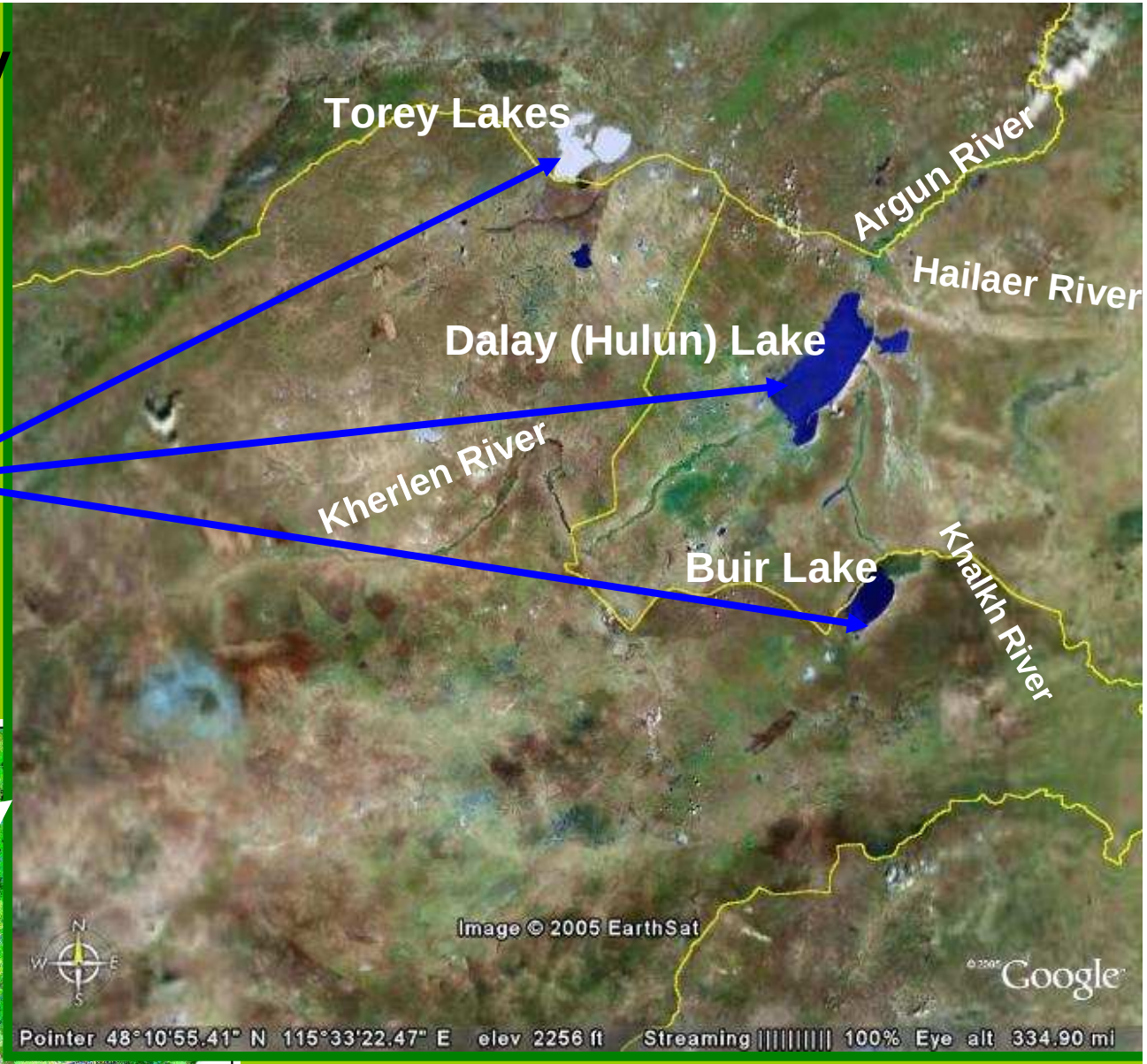
1 Daursky Biosphere reserve (DIPA)

2 Rivers without Boundaries International Coalition

Transboundary wetlands of Dauria

RAMSAR SITES





Main activities *directions* in 2011:

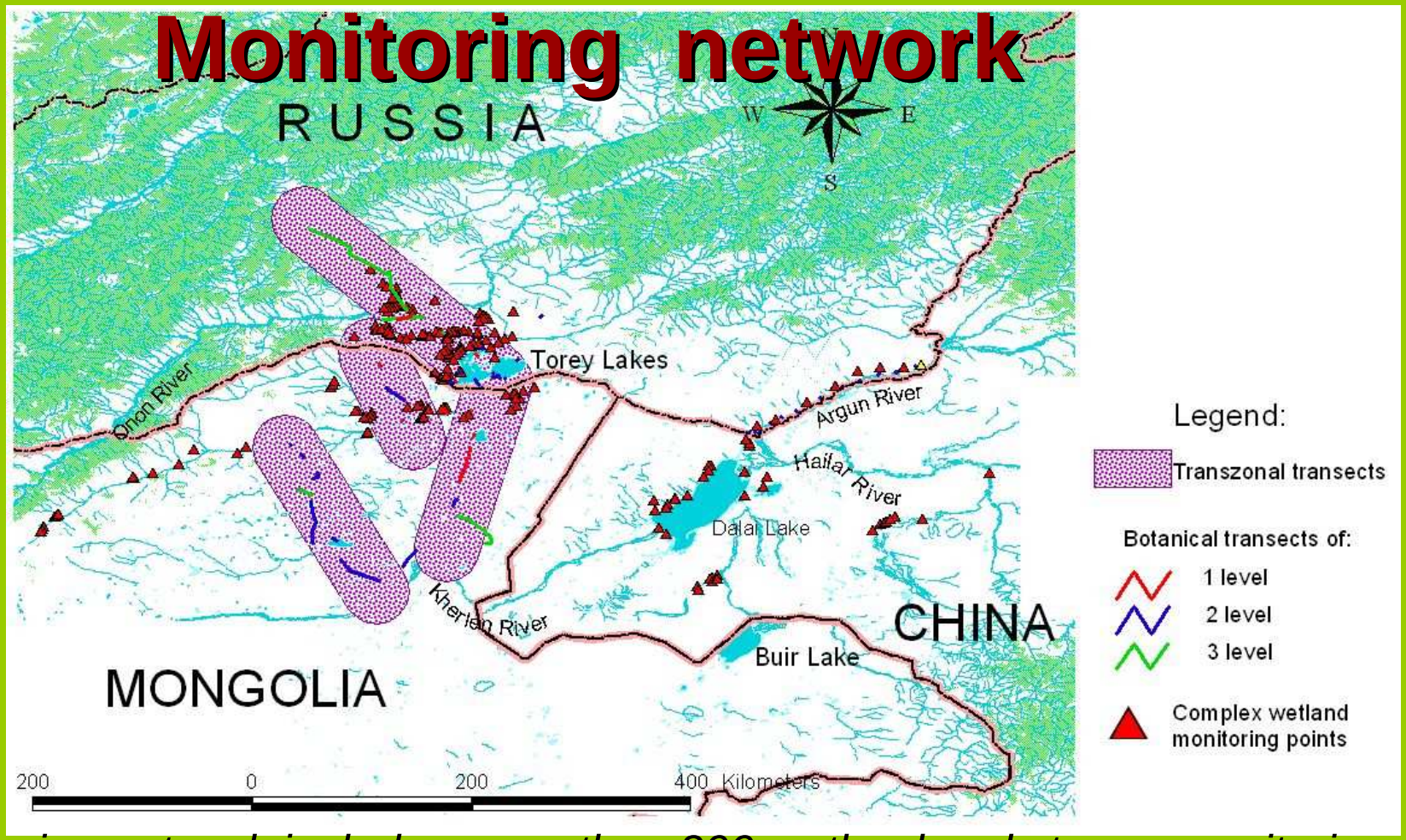
:

- ***Ecosystems monitoring network establishment and publishing results of scientific studies***
- ***Activities to assess and prevent anthropogenic threats***
- ***Public outreach***

The activities of the 2011 were supported by WWF Russia

Monitoring

Monitoring network



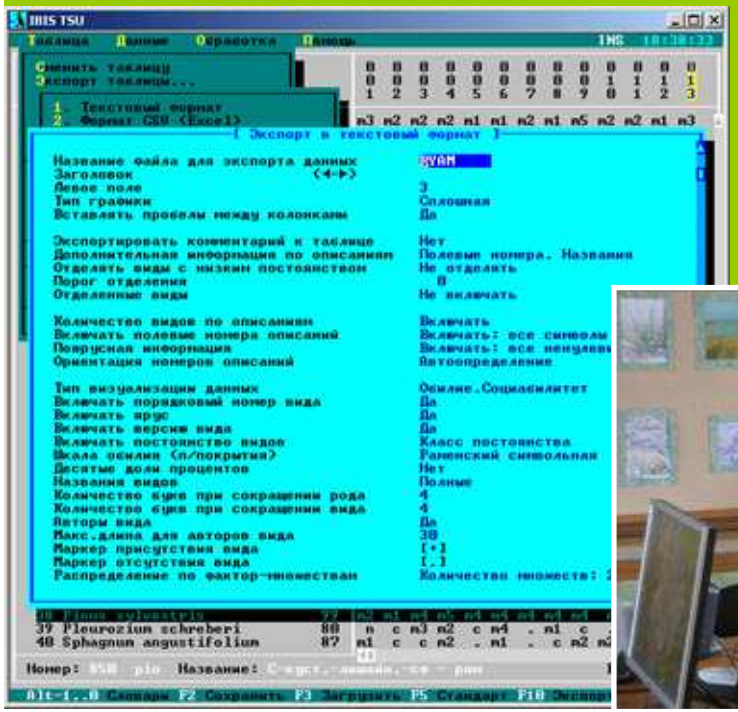
- *Monitoring network includes more than 200 wetland and steppe monitoring plots and transects.*
- *In collaboration with the Institute of Natural Resourses, Ecology and Cryology of Russian Academy of Sciences hydrochemical and hydrobiological field studies at 11 lakes of the basins were carried out.*
- *An agreement with WWF Mongolia for complex monitoring (climate, hydrology, biota, human activities) of Uldz river basin as a model basin with natural flow was achieved.*

Improving of data collection & processing

Monitoring

1. ***Hydrometeorologycal data for the entire period of instrumental observation were obtained and are available for needs of the pilot project.***

2. ***Training seminar at the Daursky reserve on environmental analysis of botanical data by means IBIS software***



Summarizing research paper was published:

Title	*Content*	*Output*
Influence of climate change on wildlife in the Daurian ecoregion	*Results of long-term investigations of concordant climate and biota changes*	*V.E.Kirilyuk, V.A. Obyazov,T.E. Tkachuk, O.K. Kirilyuk Influence of climate change on wildlife in the Daurian ecoregion // Eurasian Steppes -- - Ecological Problems and Livelihoods in a Changing World" edited by Marinus J.A. Werger & Marja A. Van Staalduinen. Published by Springer, (Dordrecht, Berlin, Tokyo, Boston, London) – 400-470 p.*

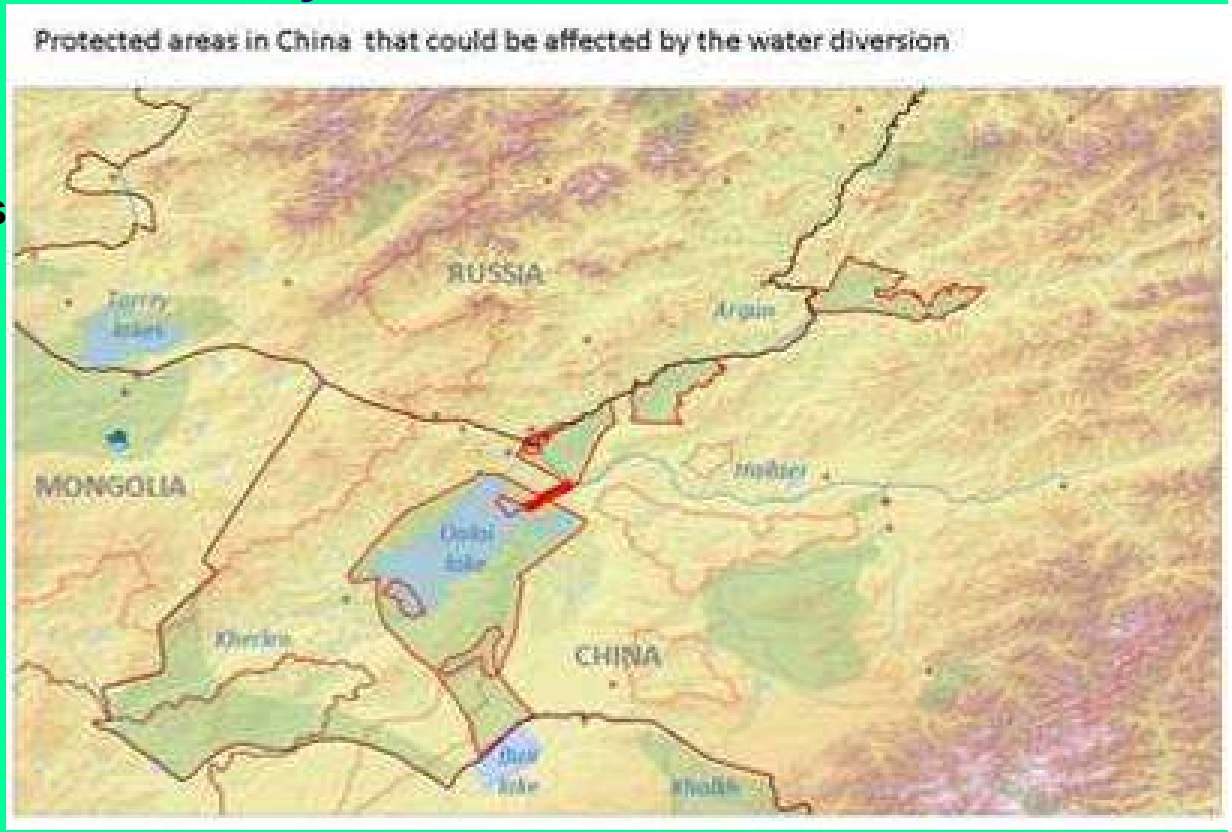
Main conclusions:

- ***Cyclicity of climate humidity is the general long-term driver of ecosystem life in vast territory of Dauria;***
- ***Biota (vegetation and animals) is adapted to climate cycles;***
- ***Dry stage of climate cycle is the critical period for surviving of many species in the region;***
- ***The key role in surviving of many species (incl. globally endangered) play refuges at rivers valleys and near big lakes***

Official **International inspection** of the Hailaer River – Dalai Lake Water Transfer Canal 13-15 July, 2011

Threats assess & prevent

Under leadership of vice-head of the Russian Federal Water Resources Agency of (Russia) V.A.Nikanorov (http://voda.mnr.gov.ru) first ever inspection to Hailaer_River - Dalai_Lake Water Transfer Canal was caried out on 13-15 July, 2011.



This is the first case of such water-infrastructure related international inspection between Russia and China. The inspection has shown that the China water authority is ready to take measures to limit water-transfer volume but is not ready to tolerate international control and to monitoring ecological consequences of the water-transfer. The canal is large enough to redirect most of Hailer River flow, therefore it remains the main concern when assessing potential impacts on transboundary Argun River and Dalai Lake Ramsar Wetland.

Analysis of policy of water withdrawal plans from Halhingol (Halahahe) river in China and Mongolia

Threats assess & prevent

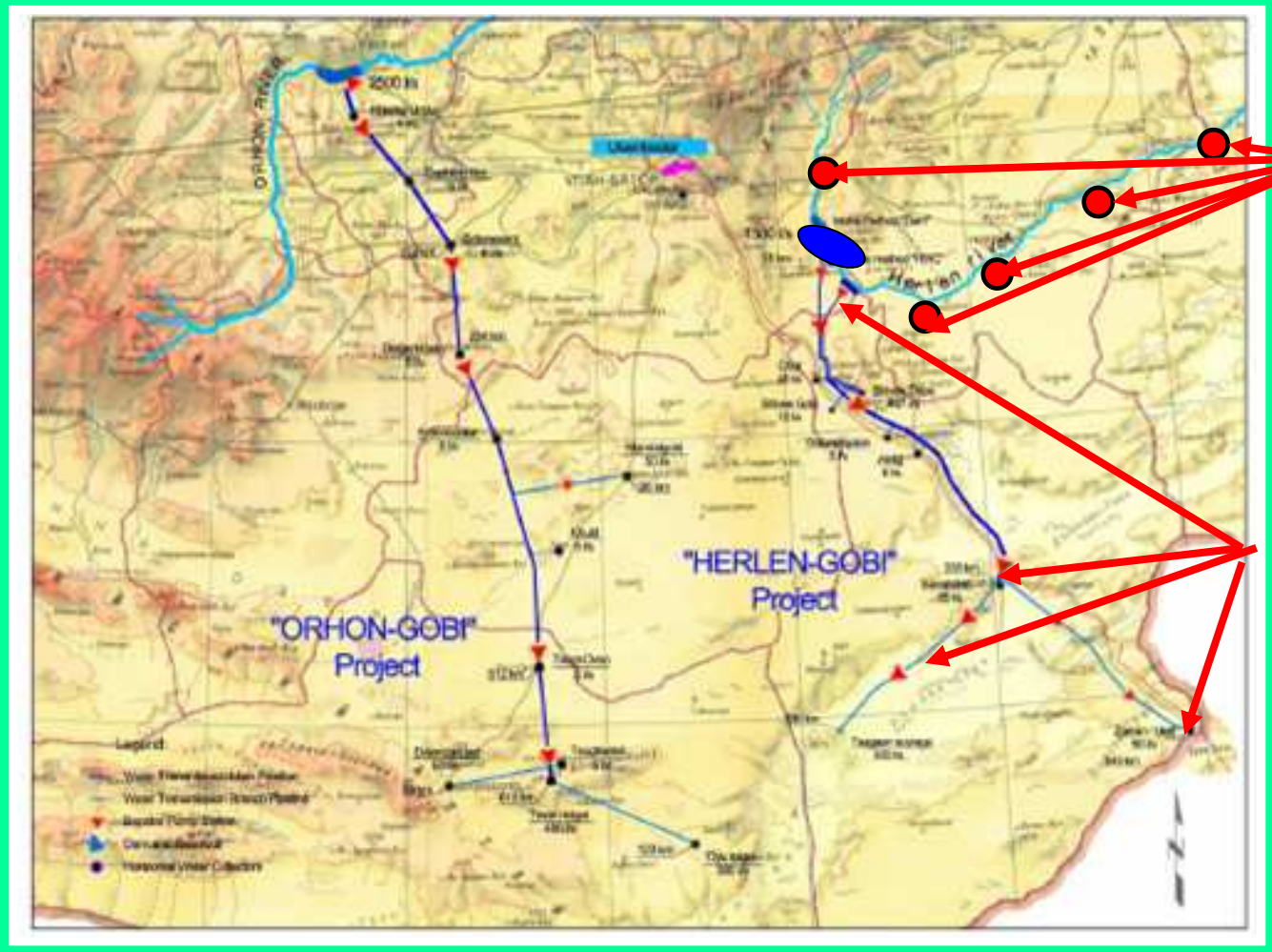
Name and place	Water intake, cub.km/year	Function	Conditions and stage
Water transfer to Xilingol mines	**>0,1**	**Water supply for termal power plant and industries**	**Expert examination in 2010**
Canal between transboundary Halaha river and Wuershun river	**Unknown, similar to Hailaer-Dalai Canal**	**Increse water flow to Dalai Lake at the expense of transboundary Buir Lake**	**China side proposal in 2009-2010**
Korean-Mongolian irrigation project in Halh soum	**Unknown, but planned agricultural area exceeds 100 000 ha. Water withdrawal should be significant**	Food production base (likely for exports)	Korean proposal, planning phase 2008-2011

Main concern – possible damage to the Ramsar site: transboundary Buir lake and Halkhingol River Delta. Cumulative impact assessment needed

Threats assess & prevent

Examination of Water management plans at Kherlen River basin (Mongolia)

“Prestige” Group & Mongolian National Water Programme Support Center (WATER CENTER) have developed complex of small and big projects of water transfer from Kherlen river



Small dams projects with water reservoir area 10 to 50 sq.km

for irrigation

Kherlen-Gobi water transfer project with large water reservoir with area 40 to 60 sq.km and volume of 0.7 cubic kilometers

for mining, irrigation, municipal use and exports

Kherlen-Gobi progect

Hazards manegement

Habitat of rare birds: White Crane, White-naped Crane, Hooded Crane, Red Falcon, Black Vulture and Swan Goose, Whooper Swan, Black Stork, Great White Egret, Bar-Headed Goose…
(http://www.argalipark.com/)

Main hazards:

- Effect on water flow and solid materials transportation;
- Difficulties for migration of aquatic biota;
- Change of valley natural complexes and biota (incl. actual and projected Nature Protected Areas)

Area of expedition

Probable alternatives:

- sustainable exploitation of local underground waters;

- pumping water from alluvial deposits without dam building

Preparations to environmental impact assessment have begun

Hazards manegement

Monitoring of mining influence on ecosystems in Onon and Uldz river basins

started in 2011

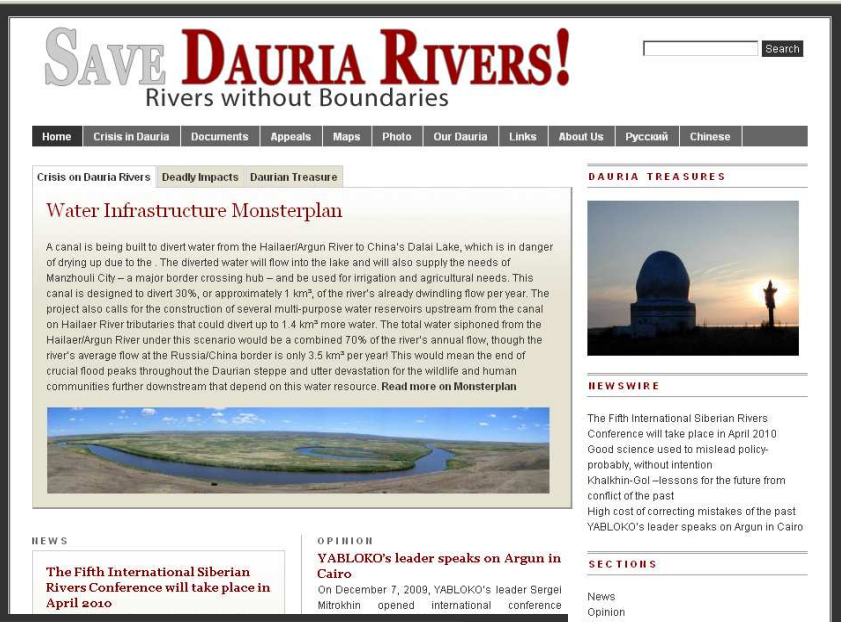

Uldz River (middle stream)


Gold mining at Uldz River

Uldz river small endorheic transboundary basin (approx 15 000 sq.km) hosts 2 Ramsar sites and Biosphere Reserves and is critically important for monitoring of climatic fluctuations. There are up to 40 mining licences and up to 70 mineral exploration licenses issued for this small area in Mongolia.

In cooperation with UMMRL and Onon-Ulz Movement the project started inventory environmental impacts of mining on river and lake ecosystems.

Public outreach



- Information website DAURIARIVERS.ORG proceeds successfully and provides interested audience with wide spectrum of information on situation at our transboundary watersheds.
- Chinese Project partners have employed a special staff for the Argun River Project.
- Weekly monitoring of information concernin to Argun and Amur basins and production o Chinese media digest issue was establishe by our Chinese partners.

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Future planned activities:

- *Summarizing report on the 1st stage of the pilot project on the ecologycal problems of Dauria rivers basins (in English)*

- *Elaborating program of complex monitoring of ecosystems in the Uldz River basin and co-operation with UNDP project on climate adaptation starting in Mongolia.*

- *First analysis of the accumulated data from the created monitoring network .*

- *Issue of the newsletter devoted to regional ecosystem monitoring and climate adaptation*

- *Search for partners*

- *Fundraising*

Plans for continuation of the project beyond 2012

- Continuing monitoring of ecosystems as a basis for elaborating recommendations on adaptations of human activities to climate and landscape dynamics and as the means of controlling developing situation.
- Annual issue of the newsletter on monitoring results (in Russian)
- Expanding of international participation in the ecosystem monitoring in the transboundary basins.
- Working out recommendations on climate adaptation of human activities in Dauria transboundary basins.
- Continuing work on establishment of Nature Protected area at the boundary segment of Argun river as the key mechanism of harmonizing environmental situation in the basin
- Fundraising
- Developing trilateral world heritage site “Dauria Steppes”

Challenges and lessons learnt:

- *The most serious obstacles are misunderstanding and lack of environmental thinking among Chinese authorities.*
- *High risk of uncoordinated activities of Russian authorities and environmental organizations*
- *Failure of understanding between local communities on what limitations and advantages the establishment of Nature Protected Area provides with*
- *Popularization of the project is the best way to better understanding by local people and authorities*
- *The project primary management must be thought-out and detailed as well as possible*


Thank you for your attention!
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