Dauria transboundary rivers - adaptation to climate c h a n g e

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RIVERS WITHOUT BOUNDARIES

See web-sites:
arguncrisis.ru
dauriarivers.org
ergunariver.cn

•**Даурия лежит на важнейших пролетных путях птиц.**

•**Intracontinental branch of the Eastern-Asian-Australian bird flyways in Dauria: at least 2 million birds stop at Argun River Wetlands**

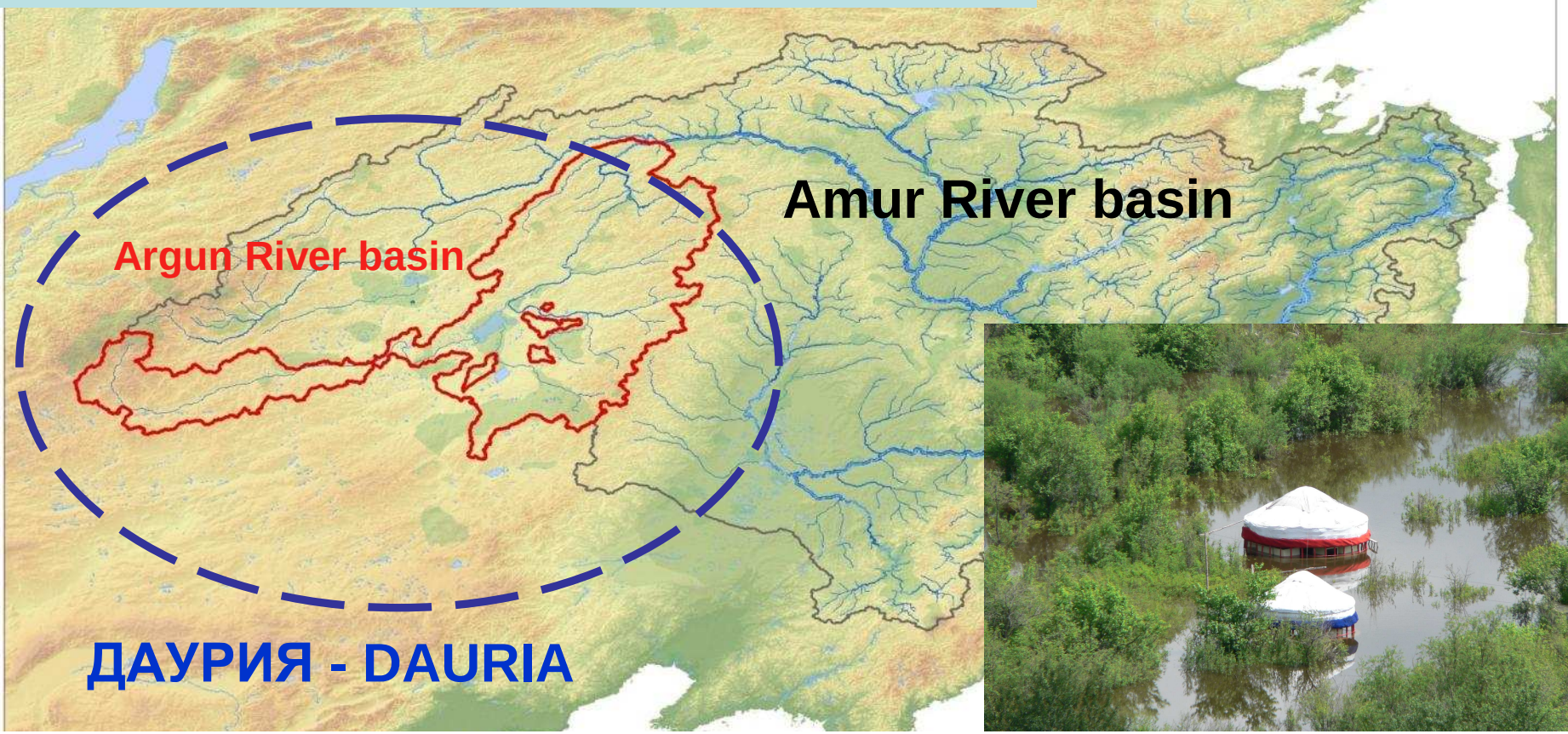
Amur Basin has 15 designated Ramsar wetlands, 5 of them in Dauria

Argun River Basin -

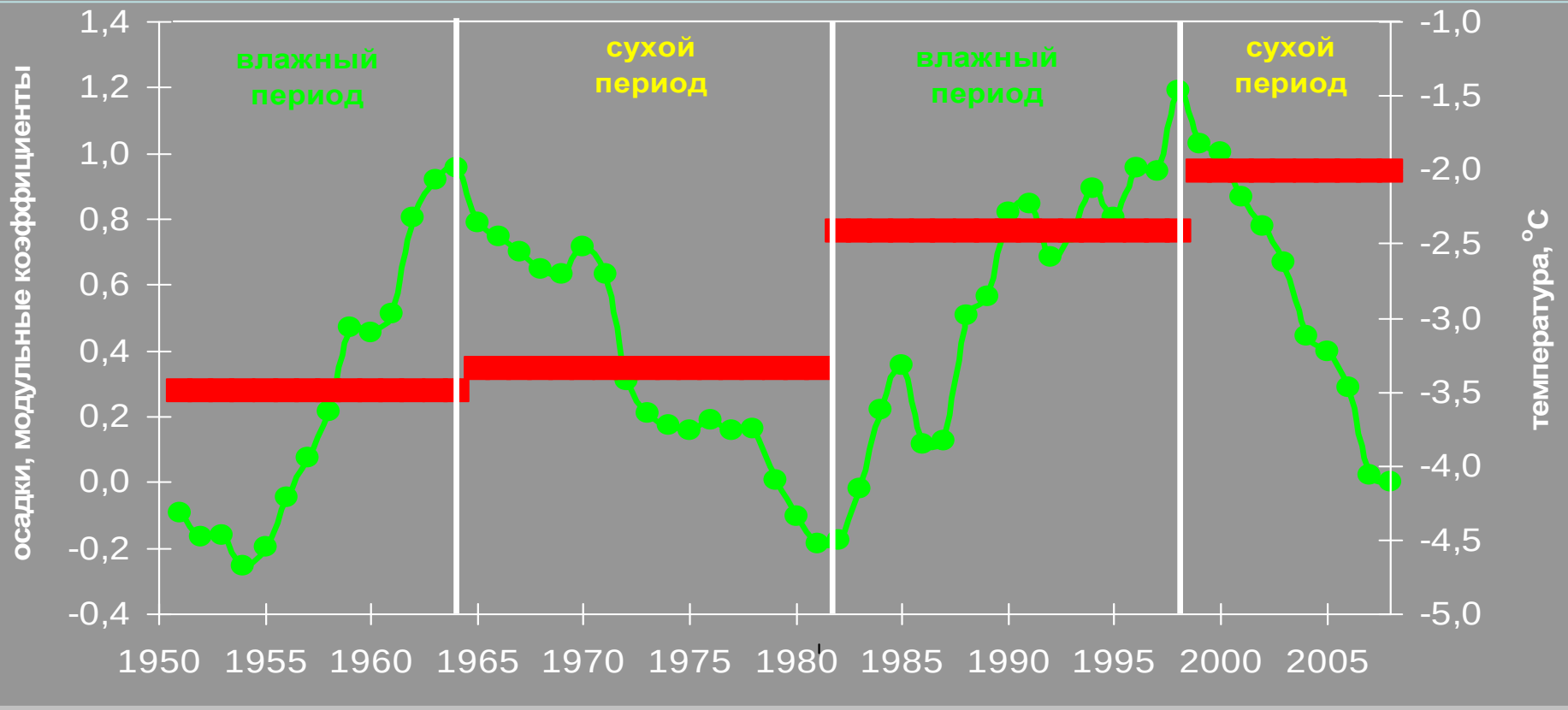
Headwaters of Amur River, principle river of Dauria steppe

Amur River Basin – 2 million sq.km
Annual discharge – 350 cubic kilometers

Argun River Basin – 0.3 million sq.km
Annual discharge at Kuti station –3,5 cubic kilometers



Cyclical change in annual rainfall (green)



Drought cycles and flooding dynamics are important factors shaping regional biodiversity.

Average temperature (**RED**) for the last 55 years has risen up for 1.5-2.0˚C that led to an increase of the period with positive temperatures in northern part of Daurian Steppe from 165-167 to 173-179 days.

Torey Lakes (Uldz river basin) dynamics:

Change of the shore line and water volume.

Coastal plant communities change

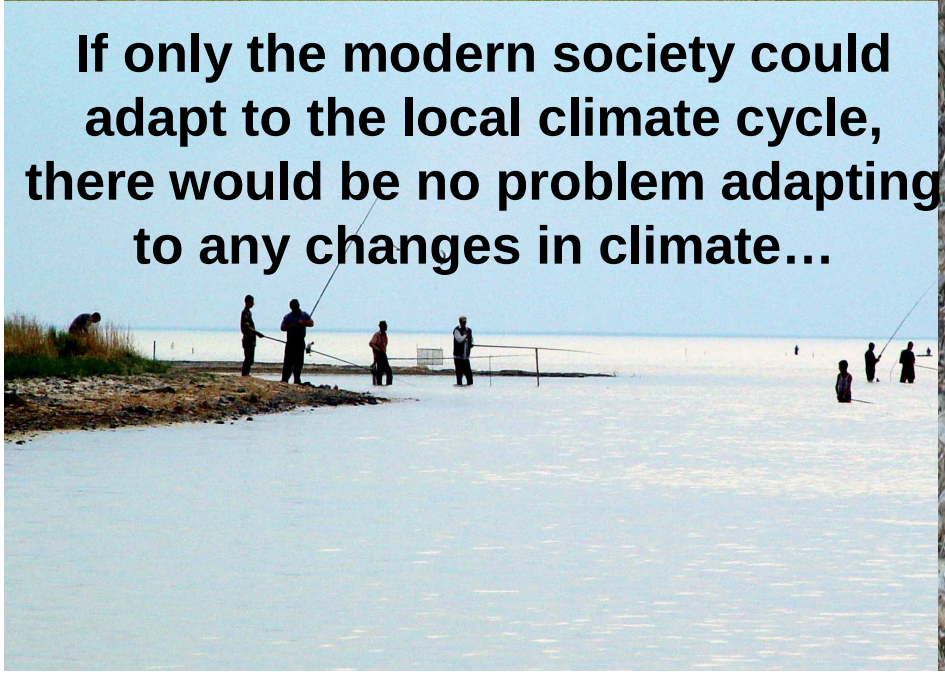
Changes in numbers and species composition of waterbirds.

In 1999 Torey lakes yielded thousand tons of fish annually, and in 2009 meadow at Barun-Torey lake bottom is a favorite pasture for Mongolian Gazelle….

Интенсивность и характер природопользования тоже меняется в ходе климатических циклов

Intensity and structure of human activity depends on phases of the climate cycle

If only the modern society could adapt to the local climate cycle, there would be no problem adapting to any changes in climate…



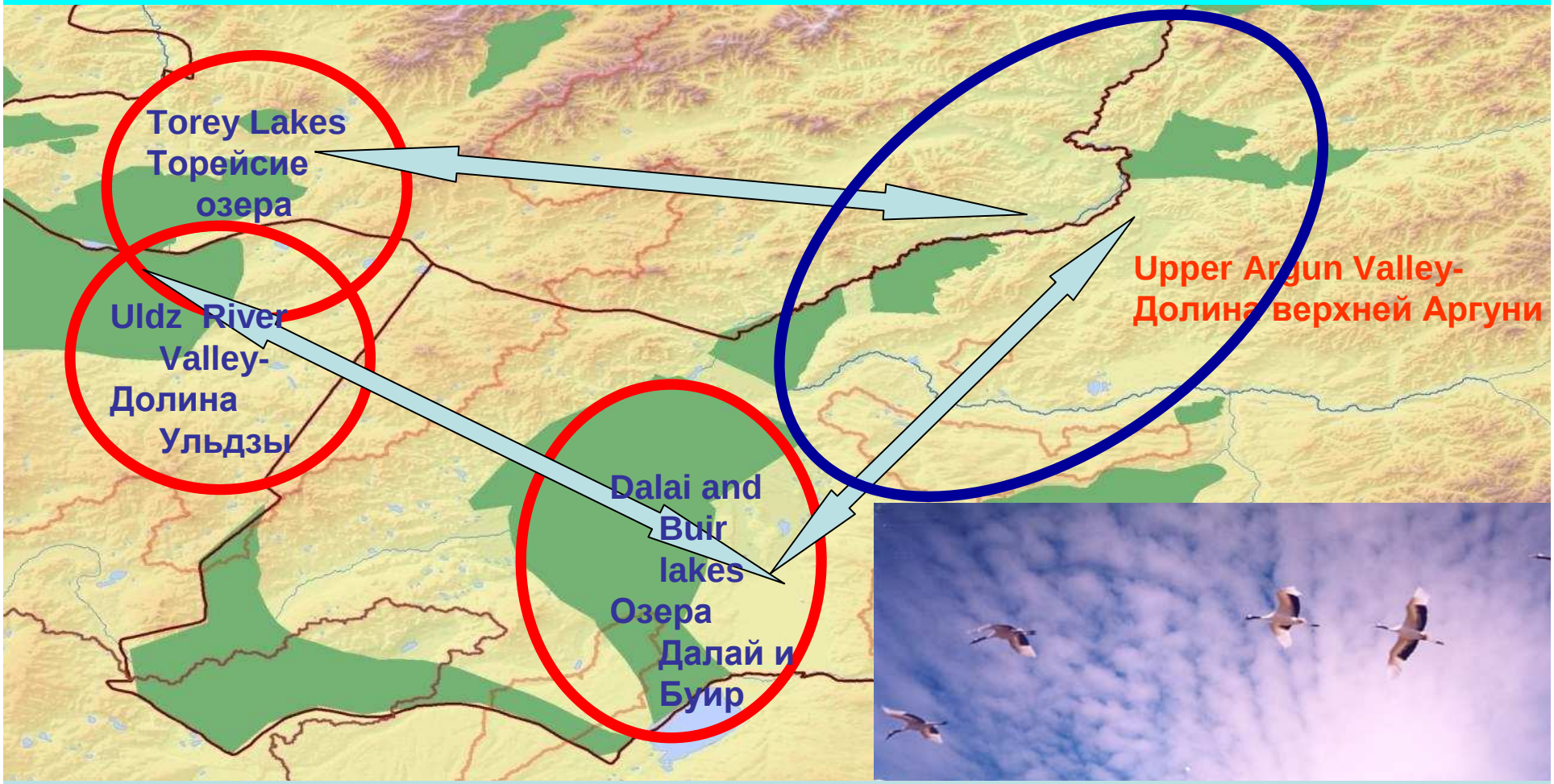
The Argun river at high flow

The Argun river at low flow

Flooding is the most important ecological process sustaining riverine wetlands

Регулярные паводки – важнейший процесс поддержания экосистем Аргунской поймы

Cyclical re-distribution of bird populations.



It makes little sense to protect one single wetland cluster in the Daurian Ecoregion, since most of the area's wildlife migrates among the steppe's scattered wetlands according to 30-year drought cycle patterns.

RED circles are protected by Dauria International Protected Area, while BLUE circle of Argun Valley is not protected internationally.

Proposed expansion of Dauria International Protected Area
Расширение Международного заповедника «Даурия»

CHINA: WATER CRISIS

PLANNED IN ADVANCE

Northeast CHINA "Revitalization of Old industrial Bases" Policy:

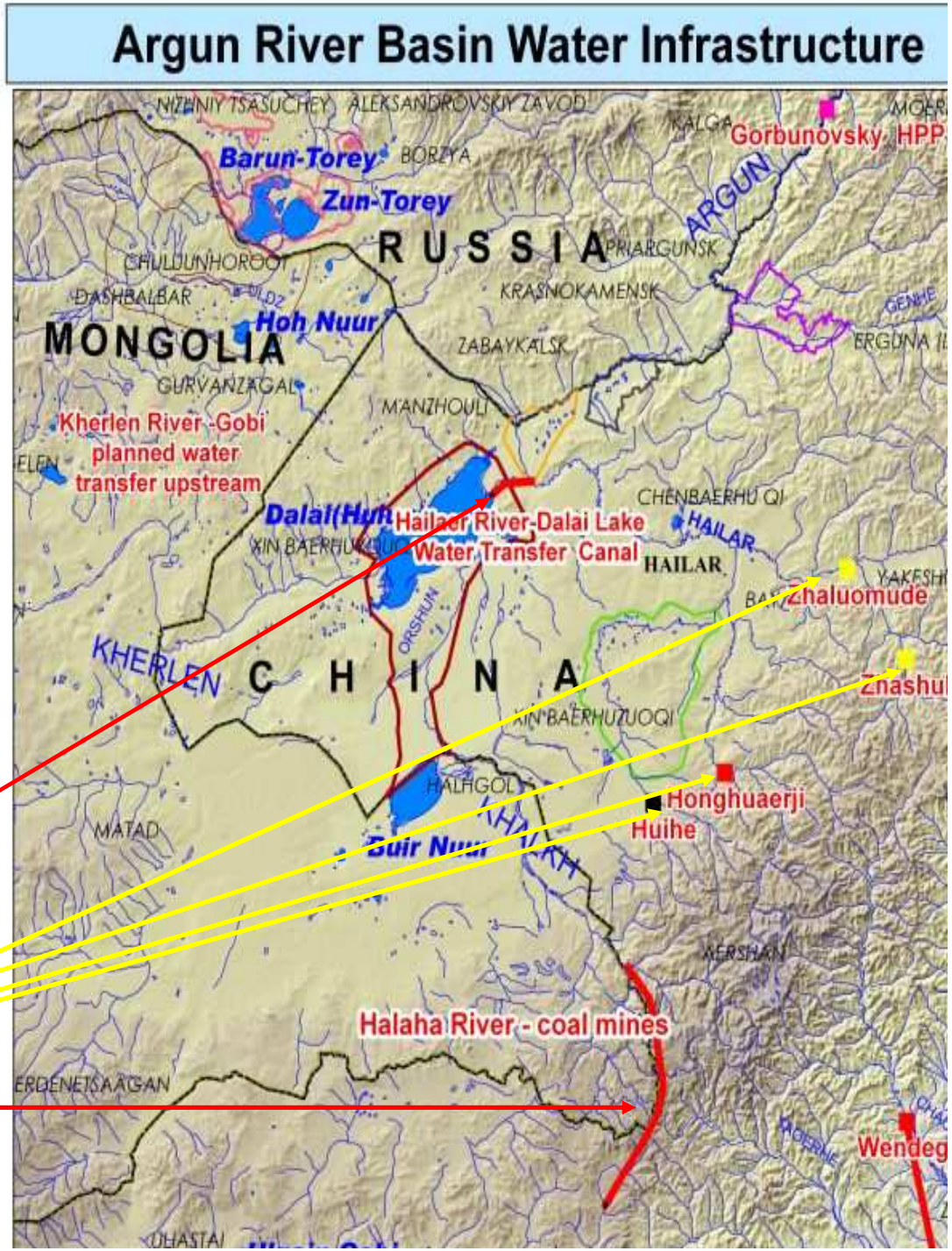
Chinese authorities plan:

1) Increase water supply from transboundary watercourses (Ussuri-Wusuli, Amur-Heilong, Argun-Eerguna).

2)Develop water transfer schemes within the Amur-Heilong River Basin and to adjacent basins, where already achi.ved water deficit is much worse.

3)Increase water consumption in Argun-Erguna River basin by 1000%.

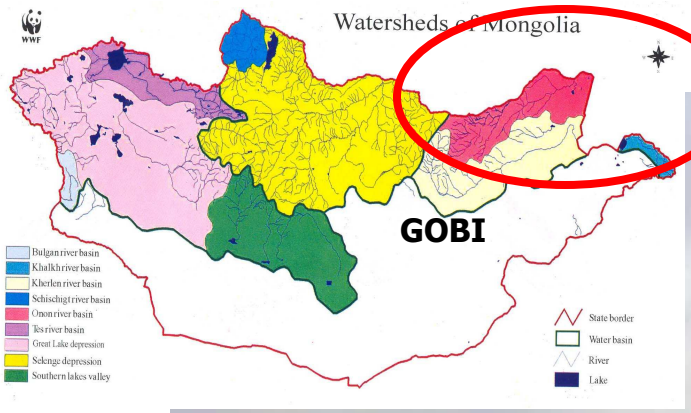
- **Hailaer-Dalai water transfer – 1.05 cubic kilometers annually**
- **Water consumption from new reservoirs upstream -1.0 cub. km. annually**
- **Halaha- Xilingol water transfer**
- **Mean annual flow of Argun-Hailaer 3.5 cub. km.**



МОНГОЛИЯ --MONGOLIA

Mongolia –changing pattern of development – growing water demand for industry, irrigation and “preventing desertification”.

Монголия – резкая смена «стратегии» развития



- Water demand from mining industries in Gobi Desert and “Green Belt of Mongolia” anti-desertification plan
- Proposed water transfers from Selenge, Onon, Kherlen, Uldz, Baldj Rivers to Gobi Desert.
- Achieving self-sufficientcy in grain through irrigated agriculture
- 2010 National Water Programme – massive intensification of water use

Развитие горнодобывающего сектора в Гоби – необходимость водоснабжения и «улучшения среды»

Самообеспечение продовольствием за счет ирригации

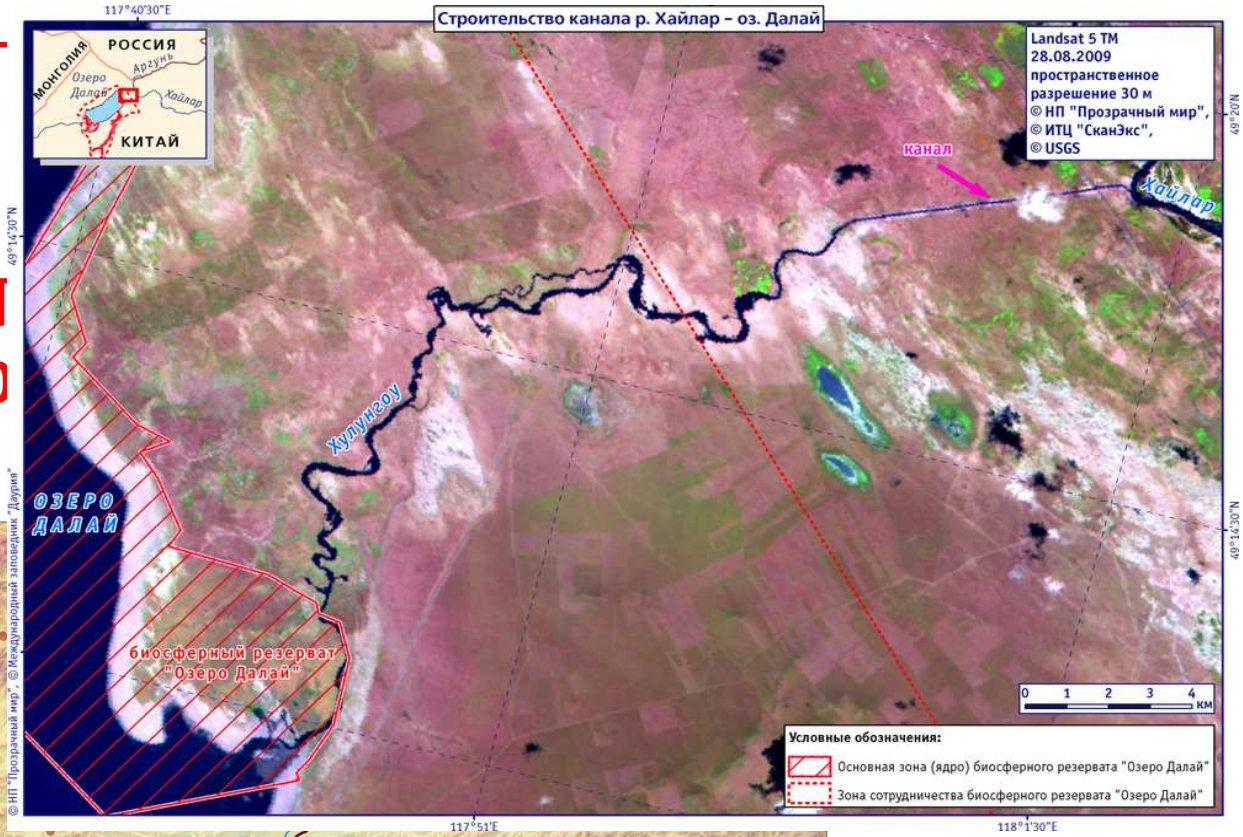
План переброски северных рек - Селенги, Керулена, Ульдзы и др.

Park of Mongolian-Russian Friendship on Kherlen River at Choibalsan

Парк hроссийско-монгольской дружбы в Чойбалсане на р.Керулен

Just one Hailaer River Dalai Lake water transfer project

Protected areas that coul be affected occupy 1 000 000 ha.



Seriously affected wetland ecosystems occupy 380 000 ha

Suggested activities

1.Strategic assessment of river management options and environmental impacts in the light of climate adaptation in the Dauria region

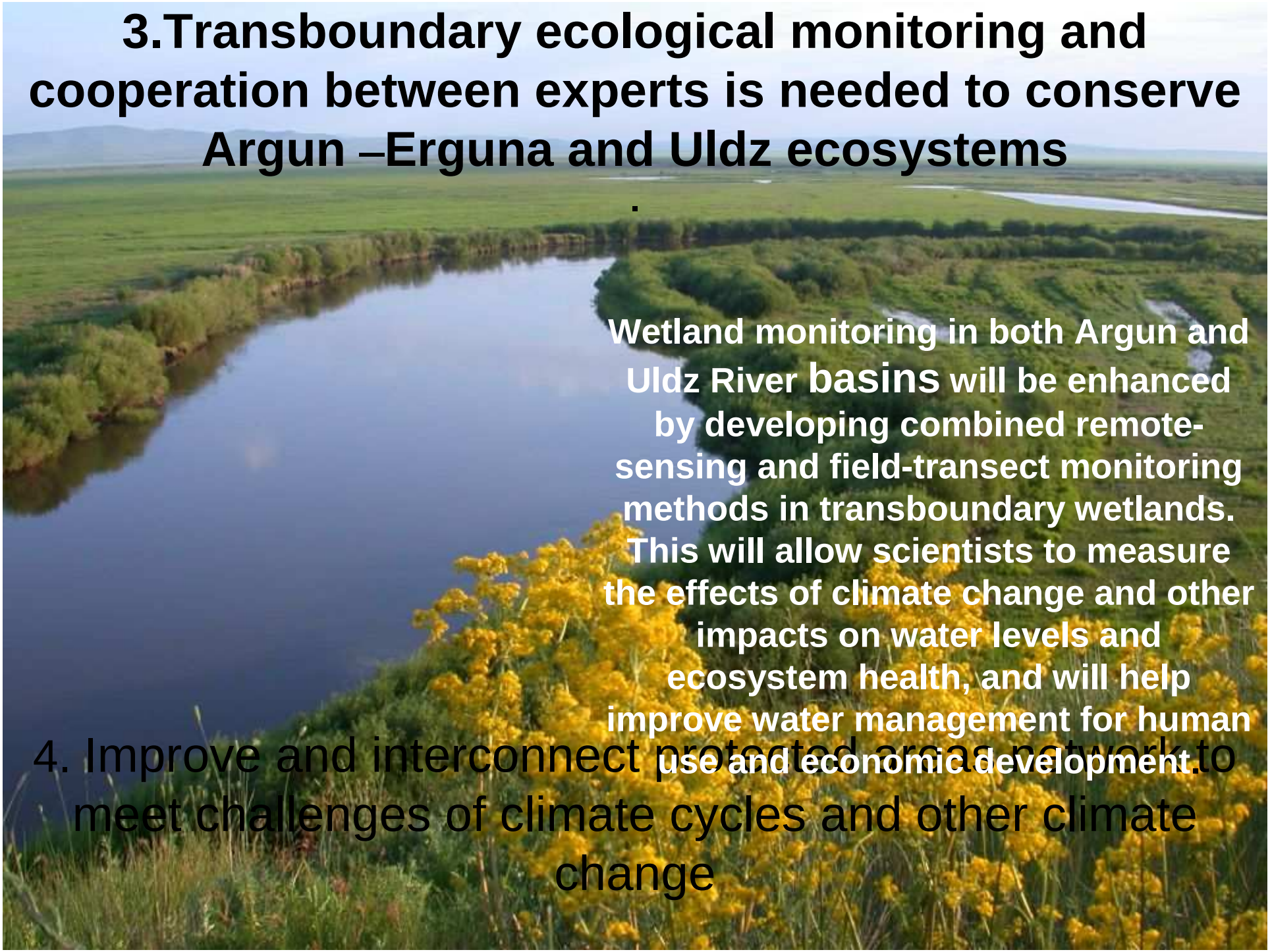
Use "GUIDANCE ON WATER AND ADAPTATION TO CLIMATE CHANGE.“and Espoo Convention Protocol on Strategic Environmental Assessment (Kiev, 2003)

The assessment will identify key threatening processes to the Dauria water systems and prescribe both Russian domestic and cooperative transboundary actions to prevent and remove these threats. Preparation of such policy document will introduce modern approaches to transboundary river basin management into decision-making in the region and establish links to relevant international institutions

2. Develop environmental flow norms for the Argun and Uldz Rivers

Scientific research will be undertaken on the environmental flow requirements of the Argun and Uldz rivers during different phases of the climate cycle. The research will be collated into a technical guidance document, and the environmental flow concept will then be promoted and instituted amongst key water management agencies. This will provide the technical foundation for harmonizing bilateral water management policies with Mongolia and China

- **Results will be used to promote the critical need for implementation of the existing Sino-Russian provincial agreement on the conservation of the Argun River Basin. The project will also develop another environmental flow case-study for model transboundary Uldz river basin, where Daursky and Mongol-Daguur Biosphere Reserves are located.**



3.Transboundary ecological monitoring and cooperation between experts is needed to conserve Argun –Erguna and Uldz ecosystems

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Wetland monitoring in both Argun and Uldz River basins will be enhanced by developing combined remote-sensing and field-transect monitoring methods in transboundary wetlands. This will allow scientists to measure the effects of climate change and other impacts on water levels and ecosystem health, and will help improve water management for human use and economic development.

4. Improve and interconnect protected areas network to meet challenges of climate cycles and other climate change

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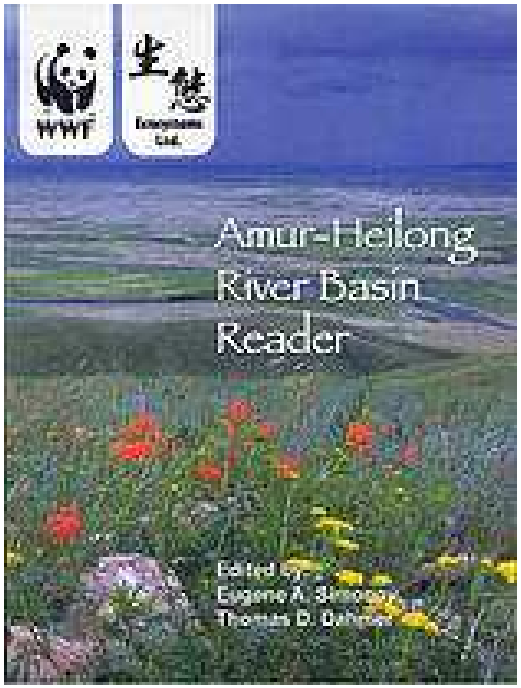
- **Wetland protected area network enhancement.**
- One of obvious key adaptation measures is development of nature reserve network that provides for migration and breeding of species in all phases of region-wide drought cycle and preserves key hydrological features and all important refugia (fragmentation avoidance, promoting connectivity, and protection of climate refuge with especially resistant habitats.
- As a first step, the spatial and temporal requirements for the conservation of all Dauria wetlands throughout all phases of the climate cycle will be analyzed. This information will be essential in informing the planning and establishment of priority protected areas. In concert with expanding the PA network, co-management projects with local herdsmen, hunters, and fishermen will be designed and negotiated.

5. On-going awareness raising and public education on water management and climate adaptation in transboundary Dauria

Trilingual web-resource.

Трехъязычный сайт по рекам Даурии Коалиции "Реки без границ"



ПОЛНАЯ ИНФОРМАЦИЯ НА
WWW.ARGUNCRISIS.RU
MORE ON WWW.DAURIARIVERS.ORG
http://www.ergunariver.cn/

Amur Information Center- open for partnerships

общедоступный Амурский Информационный Центр
http://amur-heilong.net/vicarr/index.php

Amur River Reader - comprehensive environmental encyclopedia on transboundary basin.

Амурская хрестоматия – свод экологической информации о бассейне

5. Educational program and information sharing

- The communication strategy for Dauria that makes climate cycling/climate change and limitations/advantages it brings better understood by local people and considered by governments in key planning/decision-making.
- An awareness raising program targeting regional policy makers and local communities will provide guidance on adaptation to the cyclical availability of resources while conserving the resilience of the natural steppe and wetlands. Popularization of water-saving technologies and appropriate resource-use practices will be carried out. The pilot program may initially target Zabaikalsk in Russia and Manzhouli City in China and the mining/energy industry that has rapidly developed throughout Dauria.
- Expanding trilingual web-resources and supporting services of the Amur Information Center

Riverscape today and tomorrow: What do we choose???

Argun River valley today

Do we want
SUCH a future???