

# SOLUTION OF THE PROBLEM OF THE BIRD ELECTROCUTION IN THE DAURIAN STEPPE, RUSSIA

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**The Baikal  
Lake**

**Daurian steppe**

**Period of works:  
2010-2018**





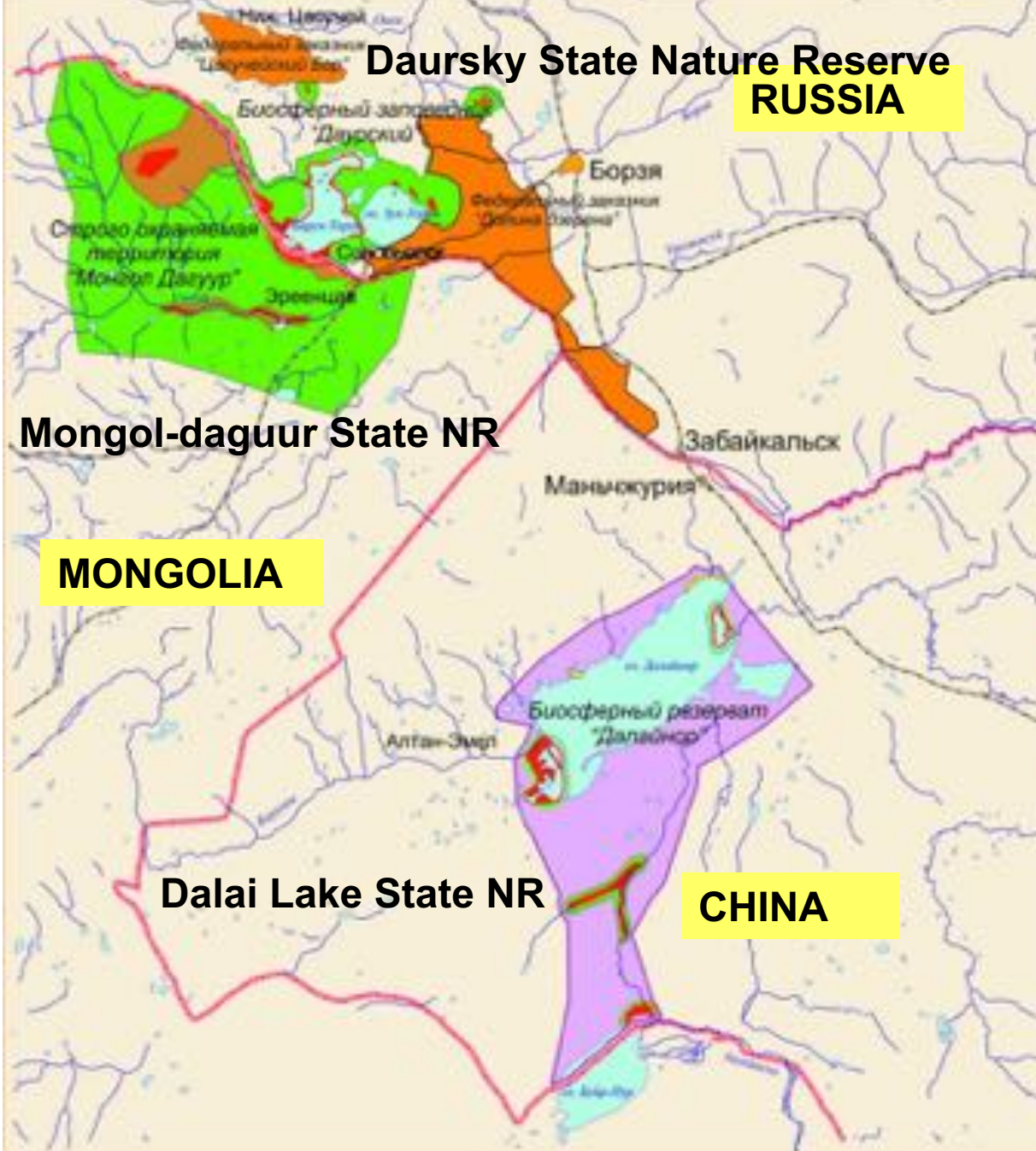
оз. Байкал  
Baikal Lake

**Россия**  
**Russia**

**Даурская степь**  
**Daurian steppe**

**Китай**  
**China**

**Монголия**  
**Mongolia**



**Daursky State Nature Reserve  
RUSSIA**

**Mongol-daguur State NR**

**MONGOLIA**

**Dalai Lake State NR**

**CHINA**

These works were carried out within the framework of the UNDP/GEF project "Improving the system and management of nature protected areas in the steppe biome of Russia" and planned works of the Daursky Nature Reserve. In 2010, the research was carried out jointly with Sibecocenter.

The Daursky Nature Reserve is part of the Russian-Mongolian-Chinese Dauria International Reserve.

Electrocution of birds on power lines (PLs) 6-10 kV is great problem in Daurian steppe in Russia and in many other regions of Russia, Mongolia and other countries. But very few works for solution this problem there.

In 2010 we first time inspected 61 km (751 pillars) of PLs on areas neighboring to the Daurian Nature Reserve.



A high level of bird mortality was registered on concrete pillars with pin insulators on iron grounded cross-arms. It make big damage to populations of raptors including many rare migratory species of falcons and eagles.



**The mortality of globally threatened Saker Falcons was extraordinarily high: in 2010 and 2011, it was much easier to find a electrocuted Saker Falcon under a PL than to record a living bird in the steppe.**

**Examples of dangerous for birds power lines (PLs) 6-10 kV in Dauria, Russia**

An average of 0,14 dead birds a pillar.  
But, near complete two-posts pillar –  
0.67, and near three-posts pillar – 0.86  
birds a pillar.

Up to 9 raptors near some pillars.

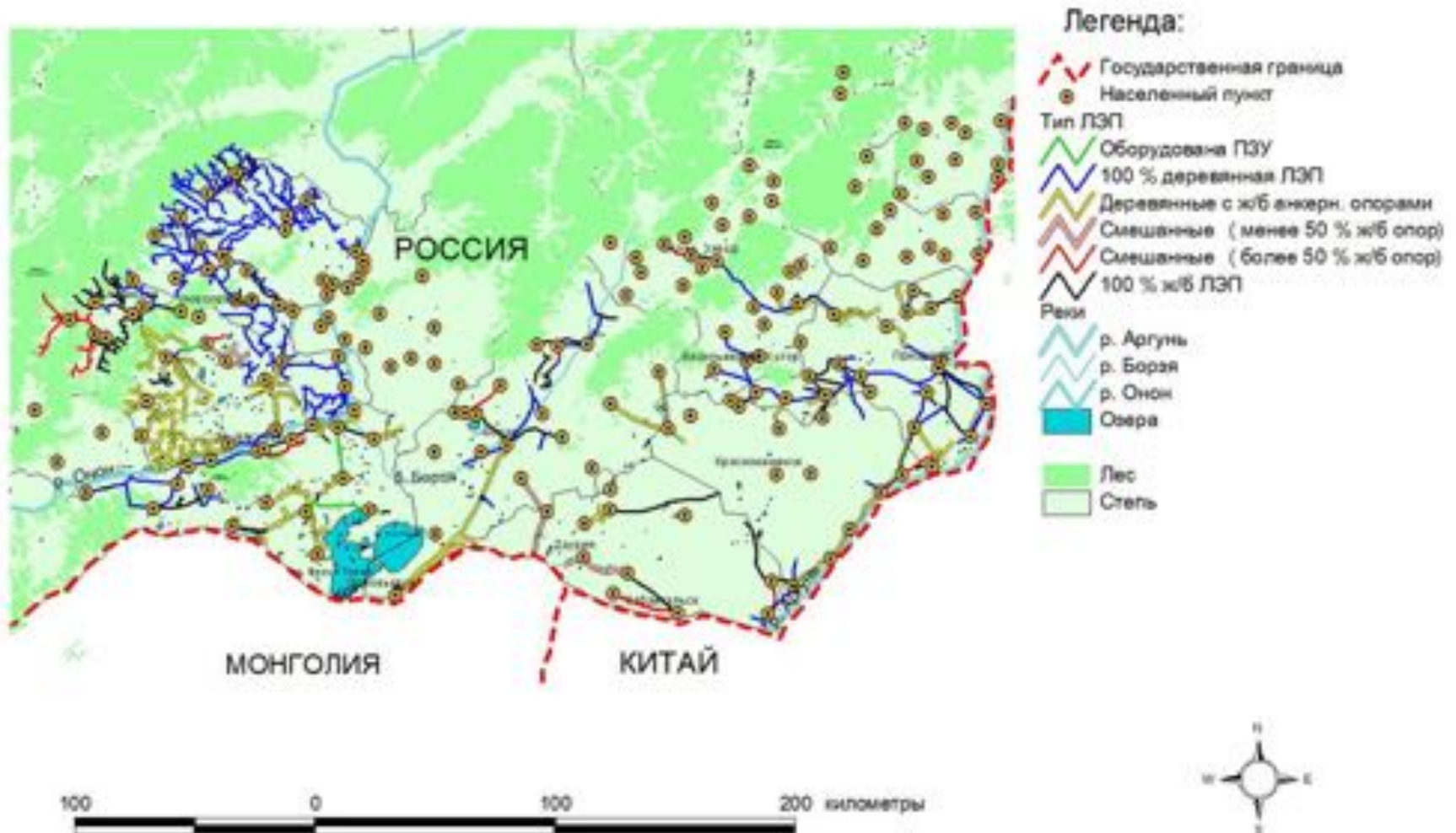


At the end of 2010, we gave to PL owners detailed report on the results of the PLs surveys, the calculation of damage, recommendations and the requirement to eliminate the problem. In 2011, the companies purchased bird protection devices (BPDs), and the company began installing them on the PLs in 2012.





In 2012, we conducted an inventory of PLs within 7 administrative districts of the region.



We used a ball evaluation of the main parameters that affect the level of bird mortality: the type of pillars; biotope; abundance of rare species of birds of prey.



After that, we conducted a field survey of a number of PLs to determine the bird mortality and clarify the hazard class of the PLs. We inspected more than 200 km of 23 PLs.

During 2010-2017, more than 300 electrocuted birds of sixteen species were found. Among them: 17 Saker Falcons, 11 Golden Eagles, 4 Steppe Eagles. Density of Saker Falcons is .6.6 electrocuted birds per 100 km PLs.



Балобан. Saker Falcon.

Беркут.  
Golden Eagle.



The length of the bird-dangerous PLs is very high. Therefore, we have developed a schedule of their step-by-step equipment by BPDs from the most dangerous PLs to the least dangerous PLs. Owners did it during 2012-2016 on areas neighboring to Daursky Nature Reserve.

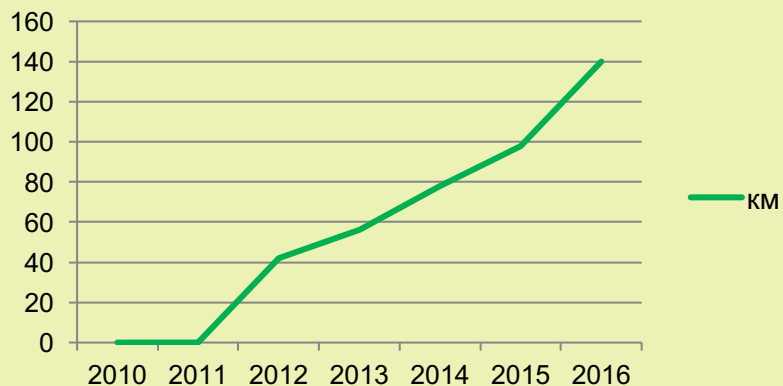


Since 2013, we monitor the condition of the BPDs on the already equipped PLs. We have identified a lot of shortcomings; the PLs owners correct them promptly. There are three main categories of problems was identified: 1) poor-quality installation of BPDs; 2) very limited lifespan of BPDs because of sharply continental climate of Dauria (very low winter temperatures, intense insolation, and strong winds). In particular, the fastening plastic bandages begin to destroy in the second-third year of operation, which leads to the loss of installed BPDs; 3) The inability of product of some companies (company "Avis": the double cap of the BPD is disconnected and loss during of strong wind the BPD is disconnected and loss during of strong wind).

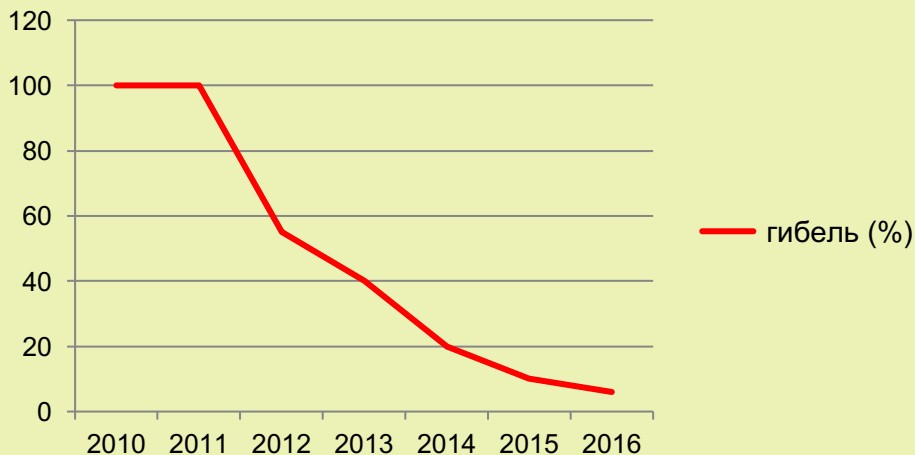


The works to solve the bird electrocution in the vicinity of the Daursky Nature Reserve have been almost completed by end of 2016: BPDs have been installed on all dangerous PLs (11 PLs with a total length of about 150 km of different companies on about 6,000 km<sup>2</sup>).

**Оборудовано ЛЭП (км).  
BPDs installed (km)**



**Гибель птиц. Bird mortality (%)**



In the reserve and its neighborhood, a fast increase of the number of population of Saker Falcon has been observed since 2014; number of nesting falcons in 2017-2018 was 3 times higher than in 2010-2011.







The next step - judicial order of other “minor” owners of dangerous PLs. In particular, materials are currently being prepared for trial in relation to small mobile communication companies.



**В Северо-Восточной Монголии ЛЭП малоопасны**

**In North-Eastern Mongolia PLs are little-danger**



**Основной тип ЛЭП в Китае (малоопасная конструкция)**  
**In North-Eastern China PLs also are little-dangerous.**





**Thank you!**

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- Staff of the Daursky Reserve
- The UNDP/GEF project "Improving the system and management of nature protected areas in the steppe biome of Russia".
- Siberian ecological center.
- Local Government.