Book of Abstracts

- COMMISSION AND TASK FORCE SESSIONS
- JOINT SESSIONS
- THEMATIC SESSIONS
- SPECIAL SESSIONS
- LECTURES OF INVITED SPEAKERS
Bringing together Selenga-Baikal research 2015

Chairperson(s): Jerker JARSJÖ, Daniel KARTHE, Ekaterina PROMAKHOVA

- Vegetation dynamics of dry climatic zones from NDVI time series analysis and field investigations
  

- Steppe plant communities of Mongolian dry climatic zones
  
  Zhaargalma ALYMBAEVA, E.Zh. GARMAEV, B.Z. TSYDYPOV, E.A. BATOTSYRENOV, A.A. AYURZHANAEV, D.V. SANDANOV, G. UDVAL (Russian Federation)

- The transformation of the landscape of the Selenga River Delta under the influence of hydrological regime
  
  Maksim PAVLOV, Elena ILICHEVA (Russian Federation)

- Dendrochronological reconstruction of Selenga River and its main tributaries runoff
  
  Endon GARMAEV, S.G. ANDREEV, A.A. AYURZHANAEV, B.Z. TSYDYPOV (Russian Federation)

- Lake Baikal as a natural phenomenon and which fingerprint was caused by use of its natural resources
  
  Christian OPP, Endon GARMAEV, Tatiana ABIDUEVA (Germany)

- Specific Features of the Accumulation and Spatial Distribution of Heavy Metals and Metalloids in Soils of Mining Landscapes (Zakamensk, Buryatia)
  
  Ivan V. TIMOFEEV, Natalia E. KOSHELEVA (Russian Federation)

- Geochemical changes of landscapes due to brown coal mining at the Sharyngol deposit in the Central Mongolia
  
  Alexey ALEKSEENKO, Natalia KOSHELEVA, Nikolay KASIMOV, Sandag ENKH-AMGALAN (Russian Federation)

- Assessing the role of placer mines in sediment delivery to the Tuul River (Mongolia)
  
  Jan PIETRON, Jerker JARSJÖ (Sweden)

- The Role of Urban Areas for IWRM Implementation in Mongolia: Experiences from Catchments of the Kharaa, Tuul and Orkhon Rivers
  
  Daniel KARTHE (Germany)

- Urban and Mining Geochemical Impact on Aquatic Systems of the Selenga River Basin
  
  Mikhail LYCHAGIN, Sergey CHALOV, Galina SHINKAREVA (Russian Federation)

- Impacts of climate and socio-economic change on water quality in the Selenga river basin: a model-based scenario analysis
  
  Marcus Friedrich MALSY, Martina FLÖRKE, Joseph ALCAMO, Dietrich BORCHARDT (Germany)
IGU 2015 Book of Abstracts

IGU2015 – 4521

**Geochemical changes of landscapes due to brown coal mining at the Sharyngol deposit in the Central Mongolia**

*Alexey ALEKSEENKO, Natalia KOSHELEVA, Nikolay KASIMOV, Sandag ENKH-AMGALAN (Russian Federation)*

The geochemical transformation of landscapes near Sharyngol brown coal open-pit in the Central Mongolia was considered. For this purpose, the landscape and land-use zoning was done, the levels of accumulation of heavy metals and metalloids in allocated zones were defined and the main factors that govern the geochemical changes during the deposit mining were identified. The study is based on the data of soil-geochemical survey in 2013. These include the contents of 20 metals and metalloids in 65 samples of topsoils (0-5 cm) and technogenic surface formations (TSF) which determined by mass spectrometry with inductively coupled plasma. The content of organic matter and the actual acidity were also determined. The analysis of the data showed that the geochemical transformation of steppe landscapes under coal mining impact is manifested in the formation of multielemental anomaly in dumps and the accumulation of pollutants in the adjacent city with their subsequent migration into the surrounding landscapes. Sharyngol coal mine dumps represent a source of landscapes pollution by the association of As-Bi-W-Mo, contents of which are much higher than abundances in lithosphere and sedimentary rocks and exceed the MPC of As up to 18 times; Mo – in 6 times; V – in 1.5 times. Due to the heating with coal and transport impact, the anomalies of Pb-Zn-Sb and PAHs are formed in the urban soils. Moreover, the urban soils are alkalized: the pH value changes from the background range of 6.2-6.7 to the values of 8.2-8.7. The basic landscape and soil parameters which control the accumulation of As, Bi, W, Mo, Pb and Zn is the type of land use, as well as the physical and chemical properties of storage media including the amounts of oxides of Fe, Mn and the pH value.