

13th International Conference on Salt Lake Research

Ulan-Ude, August 20-23, 2017

Photo by mobile phone
N.V. Aladin

**13-я Международная
конференция по изучению
соленых озер**

Улан-Удэ, 20-23 августа 2017 г.

Фото с мобильного телефона
Н.В. Аладин



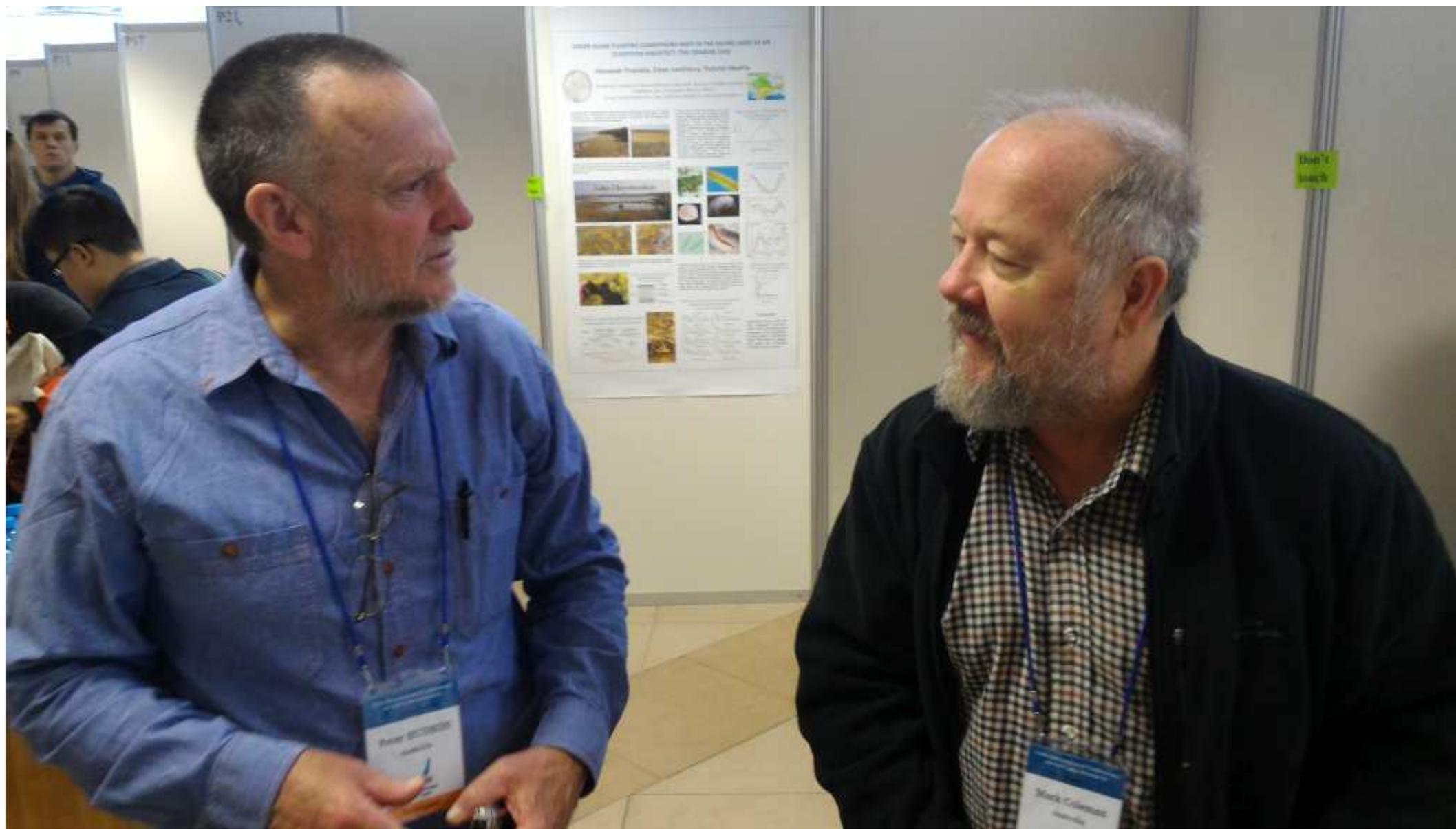












Wetland Ecosystems: From the Ground Up
A poster featuring a map of Sweden and several photographs of wetland landscapes and ecosystems.

Don't touch

Peter Schmitt

Mark Coleman



**13th International
Conference on Salt
Lake Research**

ICSLR-2017
Ulan-Ude
Russia

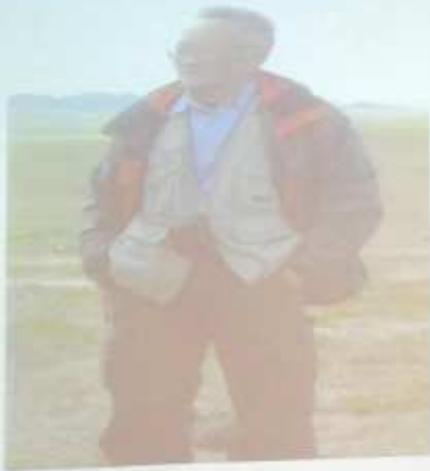
21-25 August, 2017

Conference
Hall









BAIR NAMSARAEV
(1943-2015)





Climate change effects
On lakes: similarities and
differences in response of
freshwater and saline lakes
Focus on trophic structure
Erik Jeppesen and many others – La
group, Aarhus University, Uruguay,
Brazil, Spain, Turkey, China etc.





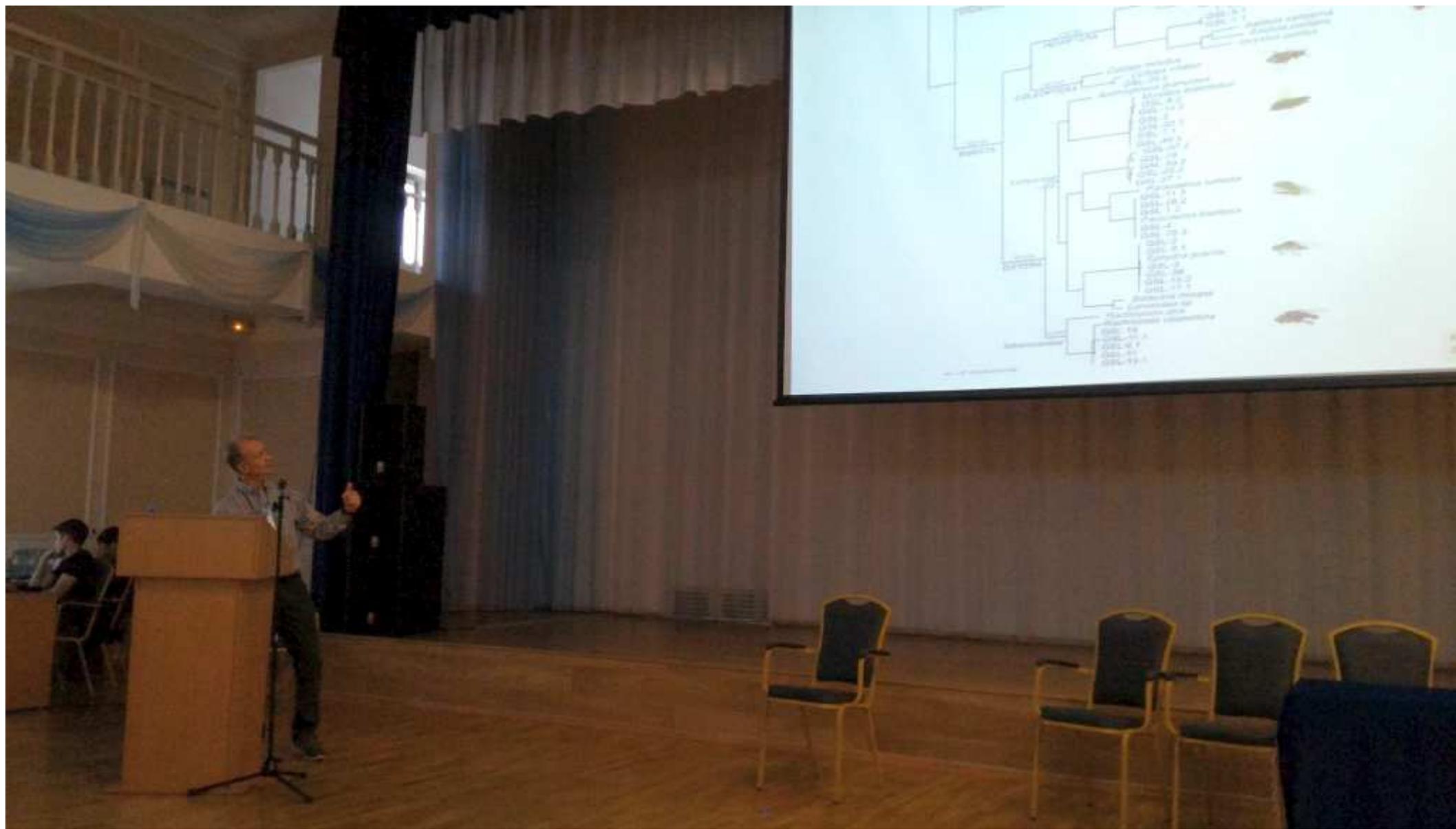
















УНИВЕРСИТЕТ ИМЕНИ
АБДУЛКАДИРА
НАЗАРОВА

АБДУЛКАДИР
НАЗАРОВ
1881-1951



Archaea and Bacteria Diversity along an Increasing Salt Gradient in Alkaline Lakes

Svetlana Zaitseva

Elena Abidueva

Olga Dagurova

Aryuna Radnagurueva

and Sokto Bazarov

Laboratory of microbiology

Institute of General and Experimental Biology SB RAS







Urmia University

3D numerical simulation of flow and salinity regimes in Lake Urmia

Hemmati M.

Pirani Z., Ahmad H.

Urmia Lake Research Institute





Umm Al-Qura University
Department of Water Engineering

Numerical modeling of Saltwater Wedge Under Intruding and Receding Conditions

By:

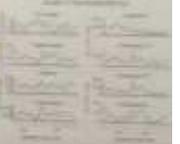
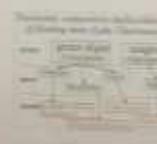
Hajar Alzahrani



GREEN ALGAE FLOATING CLADOPHYTES MATS IN THE SALINE ECOSYSTEM ARCHITECT: THE CRIMEAN CASE

Alexandr Prazukin, Elena Anufrieva, Nikolai N.

Academy of Sciences of Ukraine Biological Research, Russian Academy of Sciences, Institute of Botany, St. Petersburg, Russia, 199201



Abstract: A new anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass.

Introduction: Electrode was made of silver chloride (AgCl) and silver (Ag) in the form of a mesh. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass.

Materials and Methods: Electrode was made of silver chloride (AgCl) and silver (Ag) in the form of a mesh. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass.

Results and Discussion: The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass.

Conclusion: The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass. The anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC) is the solution of effective electrogenetic energy and efficient biomass.

Figure 1: Schematic diagram of the anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC). The diagram shows a cross-section of the electrode assembly with labels: Anodic electrode, Anodic chamber, Plug for sealing to cathode, and Porous anion exchange membrane. Below the diagram is a photograph of the physical electrode assembly.

Figure 2: Graph showing the anodic oxidation current (mA) versus time (h) for the anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC). The current increases from 0 to approximately 2500 mA over 100 hours.

Figure 3: Graph showing the anodic oxidation current (mA) versus time (h) for the anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC). The current remains relatively stable around 1000 mA over 100 hours.

Figure 4: Graph showing the anodic oxidation current (mA) versus time (h) for the anodic oxidation method of microorganisms (MFC) for use in microbial fuel cells (MFC). The current shows a slight increase from 0 to approximately 500 mA over 100 hours.

Don't touch

The photograph shows an exhibition hall with several people looking at scientific posters. The posters are labeled with numbers like P32, P28, P24, and P20. A woman in a blue shirt and a man in a blue jacket are in the foreground, and other people are visible in the background.

2017

OF SODA-SALINE AND FRESH LAKES OF BURYATIA (REPUBLIC OF BURYATIA, RUSSIA)

D. Barkhutova*, O.P. Dagurova*, Z.B. Namsaraev**
 and Experimental Biology SB RAS, Ulan-Ude, Russia
 Kurchatov Institute, Moscow, Russia

Soda-saline and fresh lakes are common in the Brackish and saline lakes are unique items with extremely high pH values and mineralization levels (up to saturating concentrations). These lakes are inhabited by philic microorganisms, including bacteria.

Objects of the study were lakes of the baikalian region (Khilganta, Doroninskoe, Inka, Ekhe Torom, Dzun-Holvo, Dzun-Torky, h-Nusur, Babie) and Republic of Buryatia (Solonoe, Sulfatnoe, Verkhnee Beiso, be, Krugloe, Diloe, Kotokelskoe).

Figure 1: Location of the studied reservoirs of Transbaikalia and the Trans-Baikal Territory. Figure 2: Lakes of the Republic of Buryatia.

The lakes were classified as fresh and brackish. In the investigated lakes, a lot of cyanobacteria species were identified from the investigated lakes and halobacterial organisms were identified to 50 g/L. The results of the microbiological analysis of the samples of the lakes are presented in the table below.

Lake	Number of species
Khilganta	5.11
Doroninskoe	42.28

Assessment of phytoplankton community structure of Lake Balkhash using a FlowCam imaging flow cytometer

Virinka Dushkova^{1,2}, Dmitry V. Malashenko^{1,2}, Ivan Vorobjev³, Natasha S. Barteneva^{1,4}

¹Department of Biology, Kazan Federal University, Kazan, Russia; ²Department of Microbiology, Kazan Federal University, Kazan, Russia; ³Department of Immunology, Kazan Federal University, Kazan, Russia; ⁴Department of Cell and Tissue Biology, Institute of Cell and Tissue Biology, Kazan Federal University, Kazan, Russia

1 Introduction

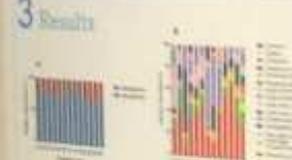
Lake Balkhash is a unique natural reservoir, a large water body covering of brackish water in the eastern part and fresh water in the western part. The lake covers the total area of 16,620 km² divided into 10 sub-lakes, water area and water volume varied significantly (up to 100 km³ in the western part). The varying degree of atmospheric precipitation and wind caused various hydrological regimes. This makes the lake a highly diverse and ecologically important system with various biological communities. The aim of the present study was to assess the phytoplankton community structure using the environmental gradient using a FlowCam imaging cytometer. This is the first time the method of the imaging cytometry is applied to the assessment of the phytoplankton community.



2 Methods

Water samples were collected from surface layer during May to September in 2016 and July 2017 from 13 sampling stations covering spatially heterogeneous sites with varying degree of salinity and atmospheric load. Water parameters (pH and atmospheric load, water conductivity, salinity, water temperature, pH, conductivity, salinity, dissolved oxygen (DO), content of biogenic elements (nitrate, nitrite, ammonium, phosphate) and heavy metals were measured for each sampling site. Phytoplankton composition and abundance were assessed using an imaging flow cytometer FlowCam (Imaging Fluid Technologies, Yarmouth, ME, USA). Classification of phytoplankton classes based on morphology was performed by VisualSpreadSheet software (Fluid Imaging Technologies, USA) followed by manual sorting. Relationships between phytoplankton community and environmental parameters were assessed using Redundancy analysis (RDA) using statistical software Canoco 5 (for Windows, Braconer, 2012).

3 Results



4 Conclusion

Phytoplankton community structure was assessed using the imaging flow cytometer. The community structure was assessed using the environmental gradient using a FlowCam imaging cytometer. This is the first time the method of the imaging cytometry is applied to the assessment of the phytoplankton community.

SP...
COM...
 Dmitry V. Mal...

INTRO...













БАЙКАЛЬСКИЙ ГОСУДАРСТВЕННЫЙ ПРИРОДНЫЙ БИОСФЕРНЫЙ ЗАПОВЕДНИК





















Байкал
заповедный
визит-центр







**Байкальский
чёрный хариус**
Самец в брачном наряде
Male black Baikal
grayling in mating colors



**Омуль
байкальский**
Baikal omul

**Байкальская
желтокрылка**
Самец в брачном наряде
Male yellow-fin Baikal
sculpins in mating colors



**Большая
голомьянка**
Big Baikal oilfish









ФЕДЕРАЛЬНАЯ АКАДЕМИЯ
ОСОБО ОХРАНИМАЕМАЯ
ПРИРОДНО-ТЕХНИЧЕСКАЯ
РОССИЙСКОЙ ФЕДЕРАЦИИ

- 102 государственная
- 47 территориальная
- 68 государственная

Кто ты для Байкала?

Ответь на все вопросы и узнай, кто ты на самом деле!

Who are you to Lake Baikal?
Answer all the questions and find out who you really are!

Будущее Байкала в твоих руках!

Чистишь или загрязняешь?

Думал ли ты, что обычные бытовые посуды может навредить Байкалу? Конечно, смотри что есть!

Do you clean or pollute?
Did you think that ordinary household items could harm Lake Baikal? Of course, look what you use.



пылесосить пылесос

- Электрическая зубная щетка
- Посуда из пластика
- Средства для чистки унитаза

Даже обычная «бытовая» посуда может стать врагом!

Продли жизнь Байкалу

Помогите, используя правильные привычки и правила. Справиться с загрязнением Байкала можно, если соблюдать простые правила.

Help Baikal live longer!
Contribute by following the correct rules and habits. It is possible to deal with pollution of Lake Baikal if you follow simple rules.



использовать многоразовую посуду

- использовать многоразовую посуду
- использовать многоразовую посуду
- использовать многоразовую посуду

А в не мой посуду! Мне прощай!

использовать многоразовую посуду

Кто виноват?

Кто виноват в загрязнении Байкала?



Кто виноват в загрязнении Байкала?

Это сделали люди

Это — вы! Вы создали мусор, который загрязняет окружающую среду, убивает животных, отравляет птиц, попадает в реки, озера, моря, и собирается в кучи мусора.

It was the people

Мина замедленного действия

Вы это сделали — выкинули или вылили в Балтийское море, и теперь оно там.

Time bomb



Задумайтесь о будущем!

Если вы не хотите увидеть Балтийское море мертвым, не выбрасывайте мусор!

Кто убивает Балтику?







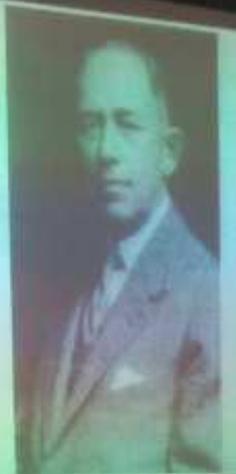








Today the Dead Sea Works (Israel) and the Arab Potash Company (Jordan) exploit the mineral resources of the Dead Sea and produce potash, bromine, elemental magnesium, and halite, based on processes established during the pioneering work of Moshe Novomeysky





Tianjin Univ. Sci. & Technol.

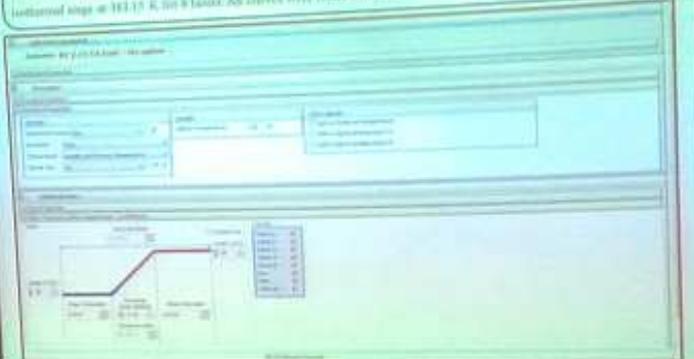
Established Database on the Salt-water Systems

website: www.ourwaystd.com



>Setup program

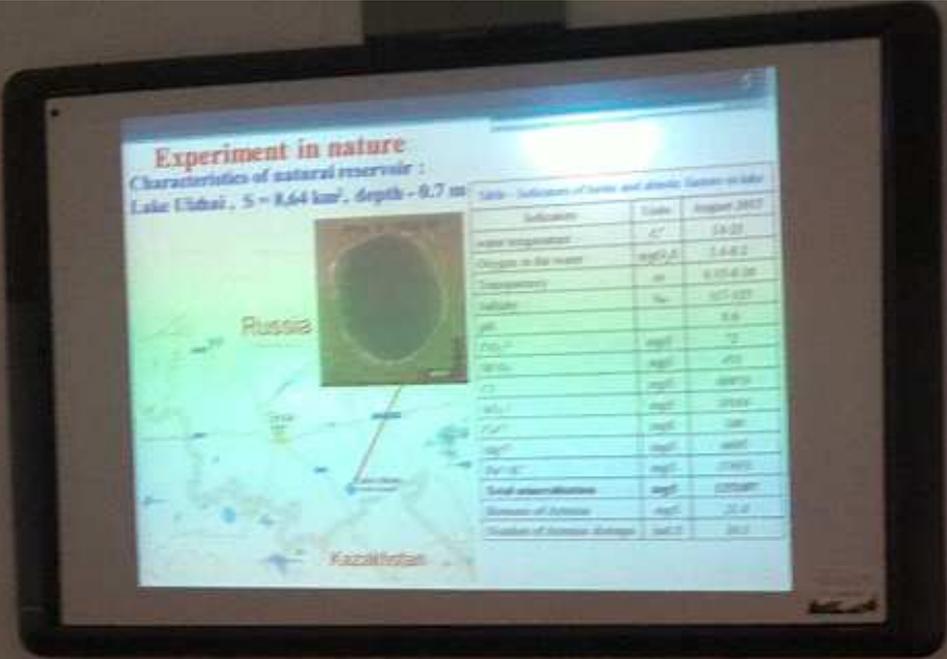
When the sample cell and the reference cell reached the dynamic balance at low pressure, the program was turned up on control of the actual temperature. For each run, the method used consisted a 3-stage isothermal process at 293.15 K, followed by a temperature ramp from 293.15 to 343.15 K at a heating rate of 0.02 K/min, and then a final isothermal stage at 343.15 K for 8 hours. All curves were then averaged.



The screenshot shows a software interface with a graph at the bottom left and a data table at the bottom right. The graph plots a variable against time, showing a ramp from 293.15 K to 343.15 K. The data table has columns for 'Time (min)', 'Temperature (K)', and 'Heat Flow (mW)'. The table contains 8 rows of data, with the first row showing a value of 0.000 for Heat Flow at 293.15 K, and the last row showing a value of 0.000 at 343.15 K.

Time (min)	Temperature (K)	Heat Flow (mW)
0	293.15	0.000
1	293.15	0.000
2	293.15	0.000
3	293.15	0.000
4	293.15	0.000
5	293.15	0.000
6	293.15	0.000
7	293.15	0.000
8	343.15	0.000





Biophysics Siberian Division of Russian Academy of Sciences

Diatoms in bottom sediments of closed-basin lakes of Khakasia

Bolobanshchikova G.N., Rogozin
D.Y.



Introduction

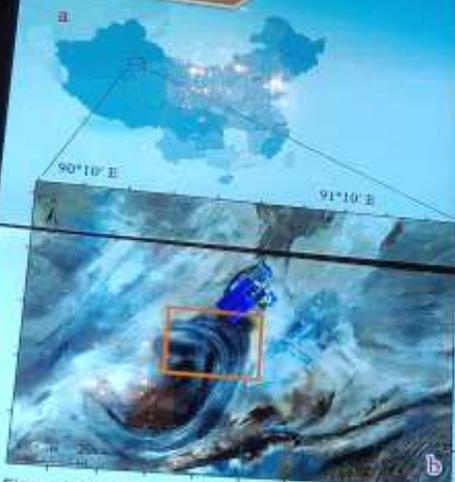


Figure 1. a) The location of Lop Nur. b) Image from a GF-1 multispectral camera with 8-meter spatial resolution (R: Band 3, G: Band 2, B: Band 1).

Playa Lop Nur

- locate in northwestern China
- lowest part of Tarim Basin
- 5,500 km²
- 780 m above sea level
- Dried out from 830 A.D. to 1971
- human ear, darker than others
- historical shorelines

Annual average temperature	11.6°C
Maximum temperature	≥40°C
Minimum temperature	≤-20°C
Annual average precipitation	≤20 mm
Annual average evaporation capacity	>3,000 mm
Prevailing wind direction	NE

www.radi.cas.cn



Lake Shira

Москва

Красноярск

Улан-Удэ

Siberia



Institute of Remote Sensing and Digital Earth
Chinese Academy of Sciences

Polarimetric SAR Data for Subsurface Lacustrine Deposits Detection and Evolution of the Vanished Lake Lop Nur

Yun Shao, Huaze Gong, Yuyang Geng
Institute of Remote Sensing and Digital Earth
Chinese Academy of Sciences

August 24, 2017



- ◆ At the Little Ice Age (620 to 45cal aBP) (zone3-4), the pollen concentrations averagely decreased below 2100 grains/g, especially from 490 to 250cal aBP, the pollen concentrations reduced to 1000 grains/g, combined by the highest drought index value (average 3.63) and alkali index value (average 1.67).
- ◆ Since 45cal aBP (zone 5), the climate became a little warm and wet represented by lower drought index and alkali index, but the content of the lake carbonate got much higher than before, represented by higher CaO/MgO values (more than 1), suggest that the lake areas and depth continue shrink. That should be affected by serious human activities and the reconstruction reservoir in the river upstream.















Travel Award
to
Attend the 13th International Conference
on Salt Lake Research
Awarded to
Lucila Belén Castro

Walter R. Boyer, President
International Society for Salt Lake Research

Aharon Green
Israel

Lucila Belén Castro









SALINOLOGY AWARD



Winner of Best Oral Presentation

Eugene Santos

13th International conference on salt lake research
Awarded by President of International Society on Salt Lake Research











on Salt Lake Research























































Green - the uptake of carbon.
Grey - respiratory processes producing or consuming CO₂.
Yellow - activities linked to the sulphur cycle.
Blue - activities linked to nitrogen cycle.
Red - activity linked to iron cycle.

Chemocline

Callanan, S.J. and Carstner, Biological and Fisheries Sciences, St. John's University, New York, USA. www.sju.edu/~scallanan/chemocline.htm









