



in the swirl of change

THE INTERPLAY OF WATER, LIFE AND CLIMATE

**Symposium on the environmental
and climate changes with their impact
on our waters and biodiversity**

Ljubljana, October 14 – 15, 2021

ORGANIZERS

National Institute of Biology (NIB), <https://www.nib.si>
Movement Youth for Climate Justice (YCJ),
<https://mzpp.si/>

ORGANIZING AND SCIENTIFIC COMMITTEE

General Chair

Tamara Lah Turnšek, NIB

Executive Chairs

Marina Dermastia, NIB

Izidor Ostan Ožbolt, YCJ

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Matjaž Kuntner, NIB

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Lovrenc Lipej, NIB

Maja Ravnikar, NIB

Timotej Turk Dermastia, NIB

Darja Stanič, NIB

Al Vrezec, NIB

Secretariat of symposium and the contact person:

Katja Sinur, katja.sinur@nib.si

The official language of the symposium will be Slovene.



NACIONALNI INŠTITUT ZA BIOLOGIJO
NATIONAL INSTITUTE OF BIOLOGY



**MLADI ZA
PODNEBNO
PRAVIČNOST**

In ancient Greece, symposium was a part of a banquet held after a meal, where drinking was accompanied by music, dancing, recitation, or conversation. In modern usage, it now means an academic or scientific conference or meeting. The "In the Swirl of Change" symposium takes place at the end of the "meal" in which we have already changed nature so that the dance of water, biodiversity and climate change is at its peak.

Scientists know that there is something very wrong with our planet. Today there is no doubt in the scientific community that global change is largely man-made. While policymakers prefer to focus on short-term topics, we need to act long-term and intergenerational in order to save the planet. The Paris Agreement was an important step forward in reducing excessive human impact on the environment, and an international movement embodied by Greta Thunberg voices to politicians that

half-hearted solutions are unacceptable for the young people. At the National Institute of Biology, we offer a platform with our knowledge and research to present our work on the functioning and response of the environment to global change, and to enable dialogue between science, decision makers and young people whose future is tightly interlinked with our planet's health. The symposium will focus on aquatic ecosystems, as water enables life and also connects most of our research. Slovenia likes to highlight its water wealth, and water is also the focus of Slovenia's six-month Presidency of the Council of the European Union. We will raise the question of whether we really have such a sacred attitude towards water as we often claim. We will try to answer what our research says in the light of climate change and what is the state of our water resources and the biodiversity that depends on them. Our core message is that immediate action and conservation is much more economical than renaturation. Our symposium will explain why protecting the environment pays off and is in the best interest of people today and in the future. We will show how National Institute of Biology is involved in global research on biodiversity and climate change, how it works with young people and decision-makers in these issues, and where we need to do better as a society and as individuals.

14th October, 2021

Earth, we have a problem

*Only
when the last
tree has died and the
last river been poisoned
and the last fish been caught
will we realize we cannot
eat money.
– Cree proverb*

The morning session will outline the ideas we know as the five ecological horsemen of the apocalypse: unsustainable use of natural resources, climate change, habitat degradation and loss, pollution, and invasion by alien species. At the beginning of the first part, speakers will present this idea from a historical perspective, and Youth for Climate Justice will conclude it with a look into the future.

- 9:00 – 9:10 **Tamara Lah Turnšek** and **Izidor Ostan Ožbolt**, President of the symposium and a representative of MZPP
Welcoming speech
- 9:10 – 9:40 **Lučka Kajfež Bogataj**, A member of the Intergovernmental Panel on Climate Change, 2007 Nobel Peace Prize laureate
Opening speech: Response to climate crisis - prompt, wise and systemic
- 9:40 – 9:55 **Anamarija Žagar**, NIB
Impact of global environmental changes on biodiversity
- 9:55 – 10:10 **Shé Mackenzie Hawke**, Mediterranean Institute for Environmental Studies, ZRS Koper
Changing the face of the Earth and its waters: cross examination of the human race
- 10:10 – 10:25 **Miha Mikelj**, MZPP
Borders and the American doughnut: prosperity within natural boundaries
- 10:25 – 10:40 **BREAK**

The topics highlighted in the first part are presented by researchers from the National Institute of Biology, using their research on aquatic ecosystems or drought as examples.

- 10:40 – 10:55 **Nina Bednaršek**, NIB
The effect of climate changes and the Mediterranean Sea acidification on marine ecology, economy and society
- 10:55 – 11:10 **Matjaž Ličer**, Slovenian Environment Agency and NIB
Climate changes in the Northern Adriatic: average sea level rise and marine heatwaves
- 11:10 – 11:25 **Patricija Mozetič** and **Tinkara Tinta**, NIB
Microorganisms in the sea of climate changes and anthropogenic pressures
- 11:25 – 11:40 **Lovrenc Lipej**, NIB
The effects of climate changes on the Mediterranean marine biodiversity: experiences from the Slovenian Adriatic
- 11:40 – 11:55 **Nataša Mori**, NIB
The condition and importance of the biodiversity of Slovenian inland water ecosystems
- 11:55 – 12:15 **Tina Eleršek**, NIB
Climate changes and cyanobacteria in inland waters
- 12:15 – 12:30 **Maruša Pompe Novak**, NIB
Development of super-resistant species of grapevine, as adaptation to environmental changes
- 12:30 – 13:00 PLENARY DEBATE, moderators: **Marina Dermastia** and **Timotej Turk Dermastia**

We
forget that
the water cycle
and the life are one
– Jacques Yves
Cousteau

Scientists have been warning about the five ecological horsemen of the apocalypse for decades, but the results of their research are often understood differently in different professional, political or public circles. The result is many different commitments that should lead to solutions. Despite examples of good practice in solving problems related to this issue, solutions are often not found or are diametrically opposed to expectations. This series of contributions aims to shed light on both sides.

- 14:00 – 14:15 **Blaž Kurnik**, European Environment Agency (EEA)
International environmental negotiations and European green legislation: what does it mean for Slovenia?
- 14:15 – 14:30 **Izidor Ostan Ožbolt**, Young People for Environmental Justice
Reflection of the key European and Slovenian environmental legislation and concrete suggestions for the way forward
- 14:30 – 14:45 **Mihael J. Toman**, Biotechnical Faculty, University of Ljubljana
A boat floats on water or it sinks. What do we want?
- 14:45 – 15:00 **Robert Turk**, former director of the Institute of the Republic of Slovenia for Nature Conservation, Regional Unit Piran
Challenges of protecting the sea and the inshore belt
- 15:00 – 15:15 **Benoît Terrier**, Agence de l'eau Rhône Méditerranée Corse, Franciaja
Protecting and restoring rivers in France
- 15:30 – 16:00 BREAK
- 16:00 – 16:15 **Matjaž Mikoš**, Faculty of Civil and Geodetic Engineering, University of Ljubljana
Improving the hydromorphological condition of Slovenian watercourses
- 16:15 – 16:30 **Adalberto Luis Val**, Instituto Nacional de Pesquisas da Amazônia (INPA), Brazil
Global change and fish of the Amazon
- 16:30 – 16:45 **Al Vrezec**, NIB
Extinction of species and degradation of ecosystems on our doorstep
- 16:45 – 17:00 **Tomaž Grušovnik**, Faculty of Education, University of Primorska
Intentional ignorance and environmental crisis: a challenge for the ethics and education
- 17:00 – 18:00 PLENARY DEBATE, moderators: **Tamarara Lah Turnšek** and **Marina Dermastia**

You
cannot get through
a single day without having
an impact on the world around you.
What you do makes a difference. And
you have to decide what kind of difference
you want to make.
– Jane Goodall, British primatologist,
a UN Messenger of Peace, and an
honorary member of the World
Future Council

*The
best time to
plant a tree was
twenty years ago. The
second best time is now.
– Chinese proverb*

15th October, 2021

Will we become part of the solution or shall the problem model stay?

In three discussion sessions, involving different stakeholders, we will address three different problems related to the symposium and try to find/propose concrete solutions to each problem.

9:00 – 10:30 **Topic No. 1:**

EXTINCTION OF SPECIES

addressed listener: **Maja Prijatelj Videmšek**

The extinction of species is a fact and is also happening in Slovenia before our eyes. Despite the efforts of conservationists to preserve ecosystems and thus organisms in nature, this struggle is often unsuccessful. While we will emphasize the importance of protecting organisms in their ecosystems and in artificial environments, the last resort is the preservation of their frozen tissues and genetic material in so-called cryo collections. Such collections are a necessity at national and international levels. Such initiatives open up new challenges for science and conservation in returning reconstructed organisms to natural or surrogate ecosystems.

CHAIRMEN: Matjaž Kuntner and Al Vrezec

Boris Kryštufek, PMS

Jonathan Coddington, Smithsonian National Museum of Natural History (Genome Initiative)

Dixon Kingsley, King's Park and Botanical Garden

Lovrenc Lipej, MBP, NIB

Martina Orlando Bonaca, MBP, NIB

Barbara Mihelič, ZOO Ljubljana

11.00 – 12.30 Topic No. 2:
INTERVENTIONS AND WATERS
addressed listener: **Borut Tavčar**

Clean water is one of Slovenia's greatest natural resources. As a right of everyone, clean and accessible water is even enshrined in our Constitution. But we also need to preserve water first and foremost, and therefore it is the duty of us scientists to present the effects of various interventions in water on the life in it. Where the state of water is not good, measures to restore it to its natural state must be tackled across the board and on the basis of expertise, in order to restore the most valuable ecosystems so as to achieve the maximum with limited resources.

CHAIRLADY/CHAIRMEN: Darja Stanič, Miha Mikelj and Borut Mavrič

Mihael J. Toman, Biotechnical Faculty, University of Ljubljana

David Stankovič, NIB

Miha Naglič, Institute of the Republic of Slovenia for Nature Conservation

Lidija Globevnik, Thematic Center for Water Research, Studies and Project Development, Ltd

Petra Repnik, Slovenian Water Agency

Borut Rožkar, VGP DRAVA Ptuj d.o.o.

13.00 – 14.30 Topic No. 3:
NATURE-FRIENDLY DECARBONISATION OF THE ENERGY SECTOR IN SLOVENIA: HOW TO PREVENT NEW ENERGY-GENERATION FACILITIES FROM DEEPENING THE BIODIVERSITY CRISIS?
addressed listener: **mag. Aleksander Mervar, ELES**

In modern societies, electricity is crucial. It has penetrated every pore of our lives and has become something taken for granted. Yet, changes are taking place in the energy sector lately that will have an impact on all living things. One key change is the move away from fossil fuels and their replacement with low-carbon sources. The latter reduce greenhouse gas emissions, but with the wrong approaches to their use, we can destroy nature, fragment ecosystems and further contribute to the biodiversity crisis. Therefore, we need to think carefully and find answers to one of the key questions of the future: How can the electricity system be decarbonised in such a way that the climate crisis is not solved at the expense of the destruction of nature and the further decline of biodiversity?

CHAIRMEN: Izidor Ostan Ožbolt and Matjaž Ličer

Tomaž Mihelič, DOPPS

Brina Sotenšek, fishery expert

Andrej Gnezda, Umanotera, Slovenian Foundation for Sustainable Development

Marko Topič, Faculty of Electrical Engineering

Iztok Tiselj, IJS

Uroš Salobir, ELES