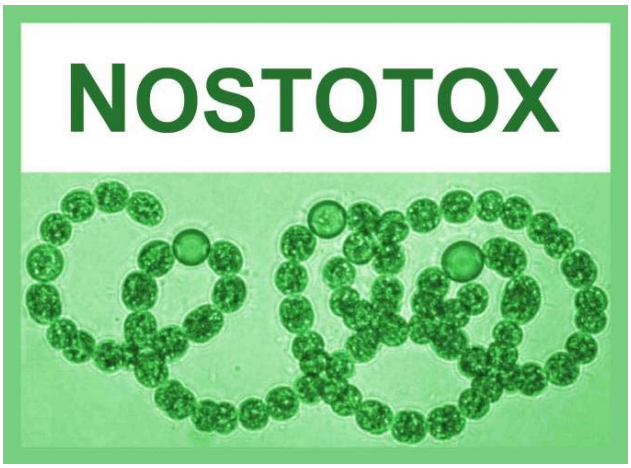
FINAL SYMPOSIUM

Toxic Nostocales (Cyanobacteria) in the course of declining trophic state and global warming

Results of the NOSTOTOX Project



5th July 2010

Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany

Toxic Nostocales (Cyanobacteria) in the course of declining trophic state and global warming

NOSTOTOX

Background:

Over the past few years it has been observed that microcystin-producing cyanobacteria (*Microcystis* and *Planktothrix*) have decreased in German lakes, while species of the order Nostocales - native species as well as invasive species from tropical regions - have increased. As a consequence, minor microcystin concentrations have been observed while the toxin cylindrospermopsin that is produced by Nostocales, has been found to be widely distributed and to exceed the recommended drinking water guideline value of 1 µg L^{-1} in many cases. Recent data on the occurrence of further neurotoxins produced by cyanobacteria of the order Nostocales did not exist. Nostocales are superior competitors under conditions of high light intensity and nitrogen depletion because they can fix molecular nitrogen. The germination of their overwintering akinetes is regulated by temperature and the temporal starting point of the pelagic population development in spring determines the population size (the earlier the larger).

Working hypothesis:

Combined effects of a declining trophic state and global warming benefit the development of Nostocales and cause a shift in species composition as well as in occurrences of certain toxins.

Aims:

Mechanisms regulating Nostocales population dynamics and their toxin production as well as the decomposition of the toxins shall be studied along nutrient, light and temperature gradients.

Design models to simulate and predict the future abundance of Nostocales as well as the concentrations of their toxins that can be expected under conditions of continued declining trophic state and temperature increase.

Create a profound scientific basis on which management recommendations for inland waters as well as decision support systems required for the risk assessment of the drinking water supply can be developed.

Duration: May 2007 - July 2010

Grand ID: **0330792 A, B, C**

PROGRAMME

8:00 Registration

9:00 Welcome
Klement Tockner, Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB)

Results of the NOSTOTOX Project

9:20 Aims and objectives of NOSTOTOX
Claudia Wiedner (IGB)

9:40 Bottom up – How changes in trophic status influence cyanobacterial and toxin composition
Jacqueline Rücker, Brandenburg University of Technology (BTU)

10:00 Is there a change in cyanotoxin occurrence - current situation in 14 lakes from North-East Germany and comparison with previous studies
Jutta Fastner, Federal Environmental Agency (UBA)

10:20 Sediment passage – a safe method for drinking water protection against toxins?!
Sondra Klitzke (UBA)

10:40 – 11:00 Coffee break

11:00 Toxic *versus* nontoxic cyanobacteria: bad guys and good guys, they all look alike
Andreas Ballot (IGB)

11:20 At the right time at the right place - recruitment of Nostocales
Matthias Knie (BTU)

11:40 Impact of global warming on the development of Nostocales
Grit Mehnert (IGB)

12:00 Modeling Nostocales population dynamics – Can we predict Nostocales occurrence?
Jacqueline Rücker (BTU)

12:20-14:00 lunch break

14:00 News from NOSTOTOX on assessing and managing cyanotoxin risks
Ingrid Chorus (UBA)

14:20 Nostocales and lake management
Brigitte Nixdorf (BTU)

Invited Contributions

14:40 Seasonal and long-term changes of cyanobacteria in Berlin surface waters: Effects of Eutrophication and Metazooplankton …
Antje Köhler, Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz Berlin

15:10 Cyanobacteria blooms in the Baltic Sea – their reasons and their effects
Norbert Wasmund, Leibniz-Institute for Baltic Sea Research (IOW)

15:40 Distribution of toxic nostocales cyanobacteria in Norwegian waters
Thomas Rohrlack, Norwegian Institute of Water Research (NIVA)

16:10 – 16:40 Coffee break

16:40 Summary and perspectives
Claudia Wiedner (IGB)

16:55 Final discussion

19:00 Barbecue in the nearby Seebad Friedrichshagen (www.seebad-friedrichshagen.de)

VENUE:

The symposium will be held at the
Leibniz-Institute of Freshwater Ecology and Inland Fisheries
Müggelseedamm 310
12587 Berlin

Information about the institute and how to get there (including by public transportation) are available at the institutes' homepage: www.igb-berlin.de
Please note that parking space directly around the institute is limited.

ACCOMMODATION

A number of rooms have been reserved from Sunday 4th till Tuesday 6th July 2010 for a special rate at:
Hotel Spree-Idyll (Single room: 59 € per night including breakfast)
Müggelseedamm 70
12587 Berlin-Friedrichshagen
++49 +30-6419400
hotel@spreeidyll.de

www.spree-idyll.de

Accommodation in the Hotel Spree-Idyll must be made directly by each participant **before 17th June 2010** (Keyword: IGB).

REGISTRATION FORM

Please return the completed registration forms by email to:
Gerlinde Wauer gerlinde@igb-berlin.de
until 20th June 2010.
We ask that you register as soon as possible, as space is limited.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Dr. Claudia Wiedner (c.wiedner@igb-berlin.de) or
Dr. Gerlinde Wauer (gerlinde@igb-berlin.de).
Leibniz-Institute of Freshwater Ecology and Inland Fisheries
Department of Limnology of Stratified Lakes
Alte Fischerhuette 2
D-16775 Stechlin-Neuglobsow

REGISTRATION FORM

First Name: _____

Last name: _____

Organisation: _____

Address: _____

_____

Phone: _____

Email: _____

Participation in the barbecue-dinner

Yes/No