

Pflanzenleben in extremer und sich ändernder Umwelt **- Plant life in an extreme and changing environment**

**Meeting of the specialist groups “Experimental Ecology” and “Desert Ecology” of the Ecological Society of Germany, Austria and Switzerland (GfÖ
- Gesellschaft für Ökologie)
in cooperation with
German Society of Limnology (DGL - Deutsche Gesellschaft für Limnologie)**

Tharandt, Germany
March 31 – April 2, 2008



Objectives and overview

We will bring together specialist groups of different research fields to discuss current progress and challenges of functional plant ecology. We want to present process related experimental ecological research on different scales – from plant parts to terrestrial and aquatic ecosystems – focused on:

- additive, synergistic and antagonistic effects of environmental factors
- down and up scaling from pattern to processes and vice versa
- linkage and different causes of oxidative stress
- adaptation of plant and associated living beings as emergent basic units of productivity under stress in a changing world

The meeting will cover the following special themes:

- Adaptation to drought and salt stress
- Temperature tolerance
- Water logging and anaerobic stress
- Response to air pollution and wind environment
- Tolerance to acidic and alkaline water and soil
- Heavy metals and arsenic as stress factors
- Biotic stress



Welcome to the workshop

“Plant life in an extreme and changing environment” at Dresden University of Technology, Campus Tharandt

The special working groups “Experimental Ecology” and “Desert Ecology” of the GfÖ (Gesellschaft für Ökologie: Ecological Society of Germany, Austria and Swiss) and the DGL (German Society of Limnology) organizing committee encourages you to join us for a workshop in an exhilarating forested river valley atmosphere below a romantic middle age castle scenery in new buildings and a reconstructed university campus after the heavy flooding and destruction in August 2002.

Sessions during the meeting combine topics along time axis, including succession and short term processes (like water flux including regulation of stomata conductivity), and space, from single cell level to ecosystems. The progress in our science is based on innovative methods. Some will be presented exclusively in the sessions. All is related to plant life under environmental stress, biotic stress included. See the topics of sessions in the program.

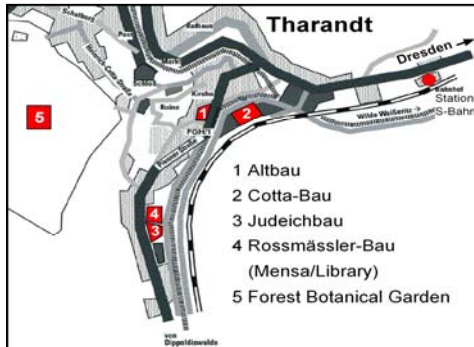
Please bear in mind that the poster session is an important part of the meeting and provides valuable contributions to general topics and more special topics. We are open for last minute posters. Hence, anybody who would like to participate but has not yet submitted an abstract should do so as soon as possible. You will be informed on details for the poster session in the final program at the beginning of the workshop. Finally, please do not forget your registration.

Make plans to arrive early! This years meeting will begin on Monday morning at 10 a.m. with short opening key note addresses and starts with the first session on “Survival and Productivity under Multiple Stress” before noon. Dresden City is nearby! Hence, if you arrive on Sunday sightseeing is recommended. The city train (S-Bahn) from Tharandt reaches Dresden Main Station (Hauptbahnhof, Dresden-Hbf.) within 20 minutes. From there you can walk to museums and galleries in the Dresdener Zwinger, the rebuild Frauenkirche, and the cathedral and renaissance castle with the treasury of Saxon kings (“Grünes Gewölbe”) reopened in the original but reconstructed rooms (61 years after destruction).



General Information

Location, Registration and Schedule



All sessions and the poster presentation will be held at the Judeich-Bau in Tharandt near Dresden, Piennner Strasse 19 (Campus of the Department of Forestry of the Faculty Forest-, Geo- and Hydro-Sciences).

Tharandt is a small city, situated nearby Dresden (15 km), from where it is easily accessible by train (City train: S-Bahn), within 20 minutes from Dresden main station

(Hauptbahnhof), and a small distance to walk (10 minutes). The airport Dresden-Klotzsche has a train (S-Bahn) connection with the Dresden main station (Hauptbahnhof). Tharandt is also accessible by car via Dresden (Highway A 4 or A 21).

The registration desk will be open in the lobby of the Judeich-Bau on Monday, 31st March, from 9 am to 6 pm and Tuesday, April 1st, from 8 am to 7 pm and on Wednesday, April 2nd from 8 am to 10 am.

Registration fee/Payment

- | | | | |
|-----------------------------|----------|--------|-------------|
| <u>Registration fee:</u> | 120,00 € | before | Jan 31 2008 |
| | 150,00 € | after | Jan 31 2008 |
| Special price for students: | 80,00 € | before | Jan 31 2008 |
| | 100,00 € | after | Jan 31 2008 |
- Payment is possible by bank transfer or at the registration desk.

Überweisungen aus Deutschland:

Kontoinhaber:	Dudel-GFOE-2008
Konto-Nr.:	4201019867
BLZ:	85050300
Verwendungszweck:	GFOE-2008- <i>"Ihr Name"</i>

International remittance:

Account holder	Dudel-GFOE-2008
IBAN	DE 48850503004201019867
SWIFT-Code	OSDDDE81
Purpose	GFOE-2008- <i>"Your Name"</i>

The workshop will start on Monday, 31st March at 10 am. For more information on the schedule see the preliminary program on the following pages. The schedule is subject to changes, however only if there will be relevant cancellations.

Meals and Informal get together

Daily lunches are provided in the new “Mensa Tharandt” (Rossmässler-Bau) directly beneath the lecture room building (Judeich-Bau). Vegetarian meals will be available. Lunch includes main dish, dessert and a drink *but not* salads from the self service salad desk.

Morning and afternoon coffee/tea breaks take place on the session site (Judeich-Bau). The opening reception and informal get together on Monday evening starts with a buffet dinner. Snacks and drinks will be available at the informal get together during the poster presentation on Tuesday afternoon.

Lunches, dinner on and coffee/tea breaks will be free of charge for registered participants (full fee and students fee). However, drinks at the dinner on Monday have to be paid for.

Transportation service

A shuttle service will be provided between the workshop site (Campus Tharandt) and Hotels in Kurort Hartha and the youth hostel (“Jugendherberge”) both near Tharandt City. Please inform us in case you need the service.

Instructions for presenters

Poster Presentation

The poster session is an important part of the meeting and provides valuable contributions to general topics and special topics. Posters will be on display in the poster/reception area in the lounge (foyer) of the Judeich-Bau from 8 am on Tuesday, April 1st, to 10 am, Wednesday, April 2nd. The authors should be available for presenting and further discussion of their posters during the poster session on Tuesday afternoon latest from 3 pm.

When preparing your poster for presentation, please note, that the poster size shall not exceed 1.4 (height) x 1.0 (width) meter (upright format!). There will be no more space available. Pushpins are provided. It is important that poster presenters adhere to the designated set up and tear down instructions and time. Posters may be set up already on Monday, March 31st. All posters must be set up and ready for viewing on Tuesday, April 1st, prior to the beginning of the guided poster session in the afternoon, 3 pm. All posters must be removed on Wednesday afternoon.



Refreshments will be served during the poster session which will then lead over in an informal get together on Tuesday late afternoon.

Oral Presentation

All sessions will take place in the lecture hall of the Judeich-Bau in Tharandt, Piennner Strasse 19. Oral Presentations shall not exceed 30 minutes, including set up, questions, and discussion. Please plan to provide the last 10 minutes for questions and discussion time. The chairmen are instructed to strictly adhere the schedule. In case presentations are cancelled just before a session, this time should be used for additional discussion or a stretched break.

Presenters will not be allowed to provide their own laptop computer, and, in fact, personal laptop computers cannot be plugged into the preinstalled projector in the lecture hall. Please, prepare a copy of your presentation on CD-ROM or (better) on USB-stick (see guideline below).

In the lecture hall an overhead projector is also available and can be used parallel to the presentation. Exceptionally slides could be accepted. However, please inform us as soon as possible in case you want to present conventional slides.

Speaker ready room

A speaker ready room (R. 022) is located well behind the lecture hall of the Judeich-Bau, for presenters to preview their material, run through their presentation and copy the presentation into the session file. The speaker ready room will be open from 9 am to 5 pm on Monday, March 31st, from 8 am to 3 pm on Tuesday, April 1st, and on Wednesday from 8 to 10 am. You must bring your PowerPoint presentation to the speaker ready room in advance, at least one hour before your session.

Electronic presentation guideline

The computer in the lecture room and speaker ready room works with Microsoft Office 2003® only. PowerPoint presentations should be made compatible with this platform (especially when using MAC-OS and even when using Microsoft Office 2007). Presentations should be reviewed in the speaker ready room to make sure all fonts are present in the form they were created. MAC-OS users should name their presentation with a “.ppt” suffix (Example: presentation.ppt).

Media support

We recommend you to bring at least two copies of your presentation to the meeting in case there is a problem with one of them. When bringing your presentation on a disk, it may be on CD-R, CD-RW, Compact flash card or best on Memory stick (USB stick). It is recommended that at least one backup copy of your presentation is brought to the speaker ready room when you check in.



Meeting Team

Main Organisers and Scientific Board

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Preliminary Meeting Schedule

Monday, March 31

- 8:30 **Registration open**
Foyer, Judeich-Bau
- 10:00 - 10:30 **Workshop Opening**
Lecture Hall, Judeich-Bau
- Opening remarks
 - Introduction of Dresden University of Technology
 - Opening in behalf of the University,
Faculty Forest-, Geo- and Hydro-Sciences and
Department of Forestry

Sessions

Lecture Hall, Judeich-Bau

Survival versus productivity under multiple stress

Chair: n.n.

- 10:30 – 11:30 **Siegmar Breckle**
Drought and salt stress, frost and heat stress, water logging
and anaerobic stress at one site: the Aralkum
- 11:30 – 12:00 **Christiane Werner Pinto et al.**
Disentangling components of drought induced changes in
ecosystem carbon fluxes and driving environmental factors -
an isotopic model approach
- 12:00 – 12:30 **Werner Leo Kutsch et al.**
Ecophysiological traits of grass species explain flux
conversion of two savanna ecosystems in southern Africa
- 12:30 – 13:30 **Lunch** (Mensa Tharandt)



Drought stress: Water limitation and extreme temperatures

Chair: n.n.

- 13:30 – 14:00 **Dieter Overdieck & Y. Li**
H₂O gas exchange of *Populus euphratica* during summer
under the semiarid conditions of NW-Xinjiang, China
- 14:00 – 14.30 **Alzbeta Rejsková et al.**
Is the transpiration and evapotranspiration rate of a
herbaceous wetland dominated by *Phalaris arundinacea*
limited by extreme temperatures?
- 14:30 – 15:00 **Hartmut Kaiser**
The relation between stomatal aperture and gas exchange
revisited
- 15:00 – 15.30 **Coffee/tea break**

Enhanced resource availability and partitioning

Chair: n.n.

- 15:30 – 16:00 **Vanessa M. Stahl et al.**
Nitrogen-source partitioning varies in different early
successional stages in sandy ecosystems
- 16:00 - 16:30 **Hardy Pfanz & Frank Saßmannshausen**
Geogenic CO₂-Exhalations and Vegetation – Mofette Plants
- 16.30 – 17:00 **Enrico Nozinski et al.**
Consequences of elevated atmospheric CO₂ for water
balance and assimilation of maize
- 18:00 - ... **Welcome reception – Buffet Dinner – Informal get
together**
Mensa Tharandt (Rossmässler Bau)



Tuesday, April 1

Biotic interaction: Stress and compensation

Chair: n.n.

8:30 – 9:00

Elisabeth Gross

Impact of abiotic and biotic stressors on phenolic allelochemicals in *Myriophyllum spicatum*, a submerged macrophyte

9:00 – 9:30

Sabine Hilt et al.

Shading by periphyton - critical stress factor of submerged macrophyte re-colonization in a eutrophic river-lake system

9:30 – 10:00

Wolfgang Beyschlag et al.

Bark Mulch: A Man-Made Extreme Environment for Plant Life

10:00 – 10:30

Yelena Lyubun et al.

Involvement of associative rhizospheric bacteria in plant tolerance for and accumulation of arsenic

10:30 – 11:00

Coffee/tea break

Stress induced by Radiation (UV) and Ozone

Chair: n.n.

11:00 – 11:30

Angela Nunn et al.

Phenological events in *Fagus sylvatica* and *Picea abies* of eight succeeding years in relation to annual climatic conditions and disturbance by elevated ozone concentrations

11:30 – 12:00

Ursula Metzger et al.

Calculating O₃ uptake via sap flow measurement: Comparison of branch and trunk level data

12:00 – 12:30

Franziska Gladis et al.

Microalgal growth on buildings - Ecophysiological performance and control

12:30 – 13:30

Lunch



Water Logging and Adaptation to Anaerobiosis

Chair: n.n.

13:30 – 14:00

Joachim Busch

More than just snorkels - New aspects on aeration mechanisms in wetland plants

14:00 – 14:30

Stephan Blossfeld et al.

Hybrid optodes – state-of-the-art sensors for non-invasive and simultaneous 2D imaging of rhizospheric pH and O₂ dynamics

14:30 – 14:45

Kerstin Schlotter et al.

Endophytic symbiosis between methanotrophic bacteria and *Typha angustifolia* and *T. latifolia*: I. Aerenchyma structure and proof for methanotrophic bacteria

14:45 – 15:00

Manuel Zak et al.

Endophytic symbiosis between methanotrophic bacteria and *Typha angustifolia* and *T. latifolia*: II. Evidence for carbon assimilation from methylotrophic methane oxidation

15:00 – 15:30

Coffee/tea break

15:30 ...

Poster Session – Informal get together

Foyer Judeich-Bau

18:00

Parallel working group sessions

- Specialist group “**Experimental Ecology**”
Altbau, Room A2 (Lecture room, first floor)
- Specialist group “**Desert Ecology**”
Altbau, Sitzungszimmer (first floor)
Piener Strasse 8 (see map)



Wednesday, April 2

Heavy metal and arsenic stress and tolerance at different levels of complexity

Chair: n.n.

8:30 – 9:00

Elly Spijkerman et al.

Stress responses and metal tolerance of *Chlamydomonas acidophila* in metal-enriched lake water and artificial medium

9:00 – 9:30

Martin Mkandawire & E. Gert Dudel

Interplay of resource and heavy metal stoichiometrics and the homeostatic regulation in metal uptake and accumulation by aquatic macrophytes: the *Lemna* sp paradigm

9:30 – 10:00

Carsten Brackhage et al.

Uptake and distribution of uranium in *Alnus glutinosa* (L.) Gaertn. under conditions of low water content in the substrate

10:00 – 10:30

Coffee/tea break

10:30 – 11:00

Jan Vymazal et al.

Removal of Arsenic in Constructed Wetlands with Horizontal Sub-Surface Flow

11:00 – 11.30

Stojan Groudev et al.

Characterization of a Neutral Wetland Used for Treatment of Acid Mine Drainage in a Uranium Deposit

11.30 – 12:00

Closing of the meeting

12:00 – 13:00

Lunch

13:30 – 16:00

Excursion to the Forest Botanical Garden and Saxonian Forest Park, Tharandt Forest

Guidance: Andreas Roloff, n.n.