
3 DEPARTMENT OF FOREST SCIENCES

3.1 INSTITUTE OF FOREST BOTANY AND FOREST ZOOLOGY

Professorship in Forest Botany

Prof. Dr. forest. habil. Andreas Roloff

Professorship in Forest Zoology

Prof. Dr. rer. nat. habil. Mechthild Roth

Office: Pienner Str.7, 01737 Tharandt, Cotta-Bau
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31202
E-Mail: forstbot@forst.tu-dresden.de
forstzoo@forst.tu-dresden.de



Cotta-Bau

Courses

The Institute is concerned with biological education at TU Dresden for the courses Forest Sciences, Tropical Forestry and Management, Wood Technology and Timber Industry, Environment Protection und Regional Planning, Landscape Architecture, Geography, Education in following subjects:

- General and Applied Botany
- Tree physiology, ecology and functional anatomy
- Systematic Botany (Dendrology)
- Fundamentals of genetics
- Bioindication
- Tree care
- Phytopathology
- Tropical botany
- General zoology
- Systematic zoology
- Faunal ecology
- Zoologic species protection
- Wildlife biology and wildlife management in the tropics
- Tropical forest entomology

- Biological and ecological foundations in UNEP/UNESCO postgraduate study
- Soil biology
- Restoration ecology
- Biotechnology

Research Areas

- Investigations of water transport and storage processes in trees
- Field experiments and pot trials for characterizing photosynthesis, respiration, anatomy and morphology of trees
- Molecular-genetic characterization of various tree species
- Dendro-ecological research on competition dynamics in mixed stands
- Systematics of woody plants
- Bioindication with the help of mosses, lichens and fungi
- Population-genetic investigations of deciduous mixed stands
- Faunistic control of soil processes in forest and agrarian ecosystems
- Autecology and population ecology of carnivore mammals
- Space use of Cervidae and Bovidae
- Space-time patterns of epigeal predator arthropods and parasitoids
- Ecology of invasive animal species (Carnivora)

Special Tasks

In co-operation with Saxon Arboretum and Tharandt Botanic Garden the institute works on inquiries and contributions of practical forestry, other institutions and the population. It offers information and expert opinion concerning the following topics:

- Determination of plants, fungi and selected groups of animals
- Species protection and biotope management
- Causes of diseases and damage to woody plants, problems of urban trees
- Growing and use of trees and shrubs
- Apiculture
- Nomination of the "Tree of the Year "

Technical Facilities

- Ecophysiological labs
- Anatomy and Dendroecological lab
- Molecular-genetic labs
- Phytopathological lab
- Ecophysiological outdoor-equipment (parameter etc.)
- Culture collection (living fungi)
- Demonstration apiary

- Botanical and zoological collections for teaching and demonstration
- Soil-zoological laboratory

Publications (Selection)

KRABEL, D. (1998): Mikroanalytische Untersuchungen zur Physiologie des Baumkambiums am Beispiel von *Thuja occidentalis* L. und *Fagus sylvatica* L. Forstwiss. Beitr. Tharandt / Contr. For. Sc. 2: 1 – 97

PIETZARKA, U. (2005): Zur ökologischen Strategie der Eibe (*Taxus baccata* L.) – Wachstums- und Verjüngungsdynamik. Forstwiss. Beitr. Tharandt/ Contr. For. Sc. 25: 1 – 195

ROLOFF, A.; BONN, S. (Hrsg., 2002): Ergebnisse ökologischer Forschung zur nachhaltigen Bewirtschaftung von Auenwäldern an der Mittleren Elbe. Tharandt/ Contr. For. Sc. 17: 1-227

ROLOFF, A. (2001): Baumkronen. Ulmer Verlag, Stuttgart

ROLOFF, A. (2004): Trees – Phenomena of Adaption and Optimization. Ecomed Verlag, Landshut

WEISS, H. (2001): Informationsverwaltung in Botanischen Gärten am Beispiel des Forstbotanischen Gartens Tharandt. Forstwiss. Beitr. Tharandt / Contr. For. Sc.14: 1-198

JUNKER, E.A.; RATSCHKER, U.M.; ROTH, M. (2000): Impacts of silvicultural practice on spider coenosis (Arachnida: Araneae) of mixed mountain forests at the Chiemgau Alps. Ekologia (Bratislava). 19 Supplement 3: 107-117.

RATSCHKER, U.M.; ROTH, M. (2000): Studies on ground dwelling spiders of agrarian habitat types in Northeast Germany: ecological and nature conservation aspects. Ekologia (Bratislava) 19 Supplement 3: 213-225.

DRYGALA, F.; STIER, N.; ROTH, M. (2002): Erste Ergebnisse zu Nahrungsökologie, Home-Range und Habitatnutzung des Marderhundes (*Nyctereutes procynoides*) – eines invasiven Caniden in Ostdeutschland. Artenschutzreport 12: 48-54

ELMER, M.; LA FRANCE, M.; FÖRSTER, G.; ROTH, M. (2004): Changes in the decomposer community when converting spruce monocultures to mixed spruce/bech stands. Plant and Soil 264: 97 – 109

JÄKEL, A.P.; ROTH, M. (2004): Conversion of single-layered Scots pine monocultures into close-to-nature mixed hardwood forests: effects on parasitoid wasps as pest antagonists. European Journal of Forest Research, 123: 203-212

3.2 INSTITUTE OF SOIL SCIENCE AND SITE ECOLOGY

Professorship in Soil Science and Soil Protection

Prof. Dr. rer. silv. habil. Franz Makeschin

Professorship in Site Ecology and Plant Nutrition

Prof. Dr. rer. nat. habil. Karl-Heinz Feger

Office: Pienner Str.19, 01737 Tharandt, Judeichbau
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31307
E-Mail: Brigitte.Eger@forst.tu-dresden.de



Judeich-Bau

Courses

The Institute focuses on the following subjects:

- Geological basics of soil science and site ecology
- Soil mineralogy, soil physics, soil chemistry, soil biology, soil genetics, soil systematics, soil geography, soil fertility
- Soil Protection and soil remediation, plant nutrition and fertilization
- Water dynamics of sites and landscapes
- Biogeochemistry of terrestrial ecosystems and linked aquatic systems
- General and forest site ecology including site classification, land evaluation and mapping

in the following courses:

- Diplom* courses: Forest Sciences, Geography, Biology, Landscape Architecture
- Water Management, Waste Management, Hydrology, Environmental Education
- Postgraduate courses: Environmental Protection and Regional Planning
- Master courses: Tropical Forestry and Management, Hydro Sciences and Engineering
- DFG (German Research Foundation) - PhD Research Group 402
- UNEP/UNESCO Postgraduate Studies
- Studium generale Technische Universität Dresden

* academic degree at German Universities, similar to Master degree

Research Areas

- Chemical, physical and biological characterization of forest soils and sites
- Relationships between site, forest nutrition and growth
- Water dynamics of soils and landscapes including modeling
- Biogeochemical cycling in terrestrial ecosystems and catchments
- Land-use effects on water quality
- Land-use effects on flood formation
- Microbial and biochemical processes in soils
- Cycles of matter in soils, referring to various types of land-use
- Matter cycling and management in agricultural soils
- Assessment and planning of forest management in regions affected by immissions
- Carbon cycling in temperate, tropical and boreal forests

Special Tasks

- Expert consultancy for DFG, BMBF, BMVEL, DBU, Forschungszentrum Karlsruhe, German-Israeli Foundation, Robert Bosch Foundation, German Foundation for the Environment (DBU), National Research Foundation of Austria
- Member of acatech (Council for Engineering Sciences at the Union of the German Academies of Science and Humanities)

Prof. Makeschin - Special Tasks:

- Subject Editor "European Journal of Forest Research"
- Member of the editorial board "Forest Ecology and Management"
Coordination of the BMBF joint project „ENFORCHANGE“
- President of the German Society of Soil Science (DBG)
- Member of the Saxon Academy for Sciences at Leipzig

Prof. Feger - Special Tasks:

- Editor-in-chief "Journal of Plant Nutrition and Soil Science"
- Member Editorial Board „Bodenschutz“ Bundesverband Boden
- Member of Dresden Flood Research Center
- Member of the managing Board Foresters' Association of Saxony
- Steering Committee Dresden Water Research Center (DKW Dresdner Kompetenzzentrum Wasser)
- National representative EU-COST Action E25 ENFORS (European Network for long-term Forest Ecosystem and Landscape)

Technical Facilities

- Labs for soil mineralogy, soil microbiology, trace element analysis, organic and inorganic soil, water and plant analysis, mass spectrometry for C and N
- Soil-hydrological lab
- Collection of soil profiles, rocks and minerals
- Experimental station for plant pot trials
- Forest hydrological field station (Tharandt Forest)
- Experimental catchment Rotherdbach (Ore Mtns.)
- Forest fertilization and amelioration experiments

Publications (Selection)

ANDERSSON, F.; ANGELSTAM, P.; FEGER, K.H.; HASENAUER, H.; KRÄUCHI, N.; MÅRELL, A.; MATTEUCCI, G.; SCHNEIDER, U.; TABBUSH, P. (EDS.) (2005): A research strategy for sustainable forest management in Europe. Technical Report 5, COST Action E25. ECOFOR, Paris, 166 pp.

ARMBRUSTER, M.; FEGER, K.H. (2004): Temporal trends in the chemical composition of precipitation, soil seepage and streamwater in two forested catchments in the Black Forest and the eastern Ore Mountains (Germany). – Regionalny Monitoring Środowiska Przyrodniczego (Regional Monitoring of Natural Environment), Kielce/Poland, KTN 5/04, 129-148.

ARMBRUSTER, M.; ABIY, M.; FEGER, K. H. (2003): The biogeochemistry of two forested catchments in the Black Forest and the eastern Ore Mountains (Germany) – Effects of changing atmospheric inputs on soil solution and streamwater chemistry. *Biogeochemistry* 65, 341-368.

ARMBRUSTER, M.; SEEGERT, J.; FEGER, K.H. (2004): Effects of changes in tree species composition on water flow dynamics – model applications and their limitations. *Plant and Soil* 264, 13-24.

FEGER, K.H.; FÜRST, C.; SCHURR, C. (2004): Wald und Wasser - Traditionelle und neue Bedeutungsfelder - Herausforderungen für Wissenschaft und Praxis. - *Forst und Holz* 59, 501-503.

LANDGRAF, D.; BÖHM, C.; MAKESCHIN, F. (2003): Dynamic of different C- and N-fractions in a Cambisol under five year succession fallow in Saxony. *J. Plant Nutr. Soil Sci.* 166, 319-325.

LORENZ, K.; PRESTON, C.M.; KRUMREI, S.; FEGER, K.H. (2004): Decomposition of needle/leave litter from Scots pine, black cherry, common oak, and European beech at a conurbation forest site. – *Europ. J. For. Res.* 123, 177-188.

KLOSE, S., MAKESCHIN, F. (2004): Chemical properties of forest soils along a fly ash deposition gradient in eastern Germany. *Europ. J. For. Res.* 123, 3-11.

KLOSE, S.; WERNECKE K. D.; MAKESCHIN F. (2003): Microbial biomass and enzyme activities in coniferous forest soils as affected by lignite-derived deposition. *Biol. Fert. Soils* 38, 32-44.

KOCH, J., MAKESCHIN F. (2004): Carbon and nitrogen dynamics in topsoils along forest conversion sequences in the Ore Mountains and the Saxonian lowland, Germany. *Europ. J. For. Res.* 123, 189-201

MACK, U.D.; FEGER, K.H. GONG, Y.; STAHR, K. (2005): Soil water balance and nitrate leaching in winter wheat - summer maize double cropping systems with different irrigation and N fertilization in the North China Plain. - *J. Plant Nutr. Soil Sci.* 168, 454-460

SCHEUNER, E.T.; MAKESCHIN, F.; WELLS, E.D.; CARTER, P. (2005): Short-term impacts of harvesting and burning disturbances on physical and chemical characteristics of forest soils in western Newfoundland, Canada. *Europ. J. For. Res.* 123, 321-330.

ZHONG, Z.; MAKESCHIN F. (2004): Comparison of soil nitrogen dynamics under beech, Norway spruce and Scots pine in Central Germany. *Europ. J. For. Res.* 123, 29-37.

3.3 INSTITUTE OF PLANT AND WOOD CHEMISTRY

Professorship in Wood and Plant Chemistry

Prof. Dr. rer. nat. habil. Steffen Fischer

until 2006: Professorship in Phytochemistry and Pulp Technology

Office: Pienner Str. 19, 01737 Tharandt, Judeichbau
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31240, -31239
E-Mail: ipc-zell@forst.tu-dresden.de

Courses

The Institute is concerned with the disciplines

- Phytochemistry,
- Chemistry and biochemistry of wood,
- General, inorganic, organic chemistry and biochemistry for forestry students,
- Chemistry of natural materials and humic substances,
- Cellulose chemistry, pulp and paper chemistry,
- Basic processes of chemical wood processing,

in the courses Forest Sciences, Process Engineering, Landscape Architecture.

Research Areas

- Phytochemistry
- Wood chemistry
- Effects of air pollutants on forest and agricultural plants
- Application of biochemical indicators
- Physico-chemical analysis of biomaterials and organic materials
- Biochemical analysis of plant materials
- Investigations of radiation treatment of fiber materials and fiber raw materials
- Characterisation of lignin
- Characterisation of humic substances and artificial humic substances
- Characterisation of cellulose and cellulose derivatives
- Photochemistry of plant material
- Chemistry and technology of pulping and bleaching

Special Tasks

- Co-operation in the expert committee Wood Chemistry of DGHF
- Chairman of expert committee "Cellulose and Cellulose products" of Zellcheming

- Expert consultancy for BMFB, AIF, DFG
- Co-operation with INFOR research council of “Verband Deutscher Papierfabriken” (VDP)
- Co-operation with Pulp and Paper industry worldwide

Technical Facilities

- Ion chromatograph (IC), HPLC (Waters, GAT), GPC light scattering, HPLC-MS (Agilent), FPLC (Pharmacia), GC, GC/MS (Agilent)
- Electrophoresis (IEF)
- Ultra-centrifuge, lyophilisation plants
- UV-VIS-spectrometer, FTIR-spectrometer, fluorescence spectrometer, Titer plate photometer (SpectraMax, Rainbow), XENOTEST 150
- Engineering facility and laboratories for phytochemical, wood and pulp-chemical investigations
- Particel size distribution measurement

Publications (Selection)

FISCHER, K.; SCHIENE, R. (2002): Nitrogenous fertilizers from lignins, Chemical Modification, Properties and Usage of lignin, Ed. T.Q.Hu, Kluwer Academic/Plenum Publishers 2002, 167 – 198

KATZUR, J.; FISCHER, K.; BÖCKER, L.; LIEBNER, F.; SCHIENE, R. (2003): Freilandversuche zur Eignung chemisch veränderter Weichbraunkohle als Bodenverbesserungsmittel bei der landwirtschaftlichen Rekultivierung humusfreier Kippenböden, Archives of Agronomy and Soil Science, 2003, Vol. 49, pp. 639-653

FISCHER, St.; SCHENZEL, K.; FISCHER, K.; DIEPENBROCK, W. (2005): Applications of FT Raman Spectroscopy and Micro Spectroscopy Characterizing Cellulose and Cellulosics Biomaterials, Macromolecular Symposia, 41 – 56

FISCHER, K.; KRASSELT, K.; SCHMIDT, I.; WEIGHTMANN, D. (2005): Distribution of Substituents along the Cellulose Chain on Cellulose Xanthate and Carboxymethyl Cellulose, Macromolecular Symposia, 109 - 120

FISCHER, M.; FISCHER, K. (2005): Polymer-Analogous Preparation of Cellulose Tricarbanilates: Mechanisms of Degradation in Dimethylsulfoxide, Macromolecular Symposia, 121 - 135

3.4 INSTITUTE OF FOREST ECONOMICS AND FOREST MANAGEMENT PLANNING

Professorship in Forest Management Planning

Prof. Dr. forest. Andreas W. Bitter

Professorship in Forest Policy and Forest Resources Economics

Prof. Dr. rer. silv. habil. Norbert Weber

Office: Pienner Str. 23, 01737 Tharandt, Stöckhardt-Bau
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31811
E-Mail: foeco@forst.tu-dresden.de



Stöckhardt-Bau

Courses

The institute runs the forestry course of studies in the following subjects:

- Forest policy
- Forest management planning
- Forest business management
- Forest administration
- Forest products marketing
- Forest history
- Fundamentals of economics
- Environmental economics

The Institute is responsible for and supports the following disciplines: jurisprudence, forest geodesy, remote sensing and photogrammetry.

Research Areas

Forest policy:

- Forest policy at sub-national, national and European level (including multi-level governance and global environmental governance)
- Provision of timber, biomass, non-wood forest products and services
- Knowledge management in forestry (especially traditional forest related knowledge)
- Private forestry and cooperation between forest holdings

- Diversification of forest landscapes as a result of changing societal demands
- Forest history

Forest management planning:

- Geo-information systems
- Function-oriented inventory and planning in nature-oriented commercial forests
- Type-oriented continuous forest inventories
- Utilization of digital photogrammetry
- Regionalization of various inventory data
- GIS supported management simulation
- Strategic planning in forest enterprises
- Methods for assessing and evaluating the infrastructure services of forests
- Strategic and operative controlling in forest enterprises

Forest business management/Forest economics:

- Analysis of dynamics of forest-economic systems (dynamical analysis of sustainability)
- Analysis of the interactions of forest as a resource and as an environmental good
- Effects of fuzzy aims, restrictions and quantities on enterprise optimal decisions
- Economics of wildlife

Special Tasks

Consultancy in the fields of forest management, forest- and environmental policy, forest resources assessment, forest inventory and medium- to long-term resource planning.

Technical Facilities

- GIS laboratory including workstation and PC workplaces
- Digitizer, scanner, large-format plotter (A0)
- Digital stereo-photogrammetry station
- Interpretoscope
- Collection of teaching materials, documentations and forest maps
- Collection of forest management plans
- Series of aerial photographs of various forest districts

Publications (Selection)

BITTER, A.W. (2001): Anmerkungen zur Auswahl von ökonomischen Nachhaltigkeitsindikatoren für den Forstbetrieb. *Forst und Holz*, Nr. 15, S. 482-485.

BITTER, A.W.; BREDEMEIER, M.; PRETZSCH, H.; SPELLMANN, H. (2003): Indikatoren der Nachhaltigkeit für Forstbetriebe. *Initiativen zum Umweltschutz* Bd. 58, Erich Schmidt Verlag, Osnabrück, 283 S.

BITTER, A.W. (2003): Development of a GIS-supported operational simulation model as support for the management planning of forest enterprises. In: Fürst, C.; Bitter, A.W.; Eisenhauer, D.R.; Makeschin, F.; Röhle, H.; Roloff, A.; Wagner, S. [eds.]: *Sustainable methods and ecological processes of a conversion of pure spruce and pine stands into ecologically adapted mixed stands. Contributions to Forest Sciences*, Verlag Ulmer, Stuttgart.

BITTER, A.W. (2004): Strategische Planung als Instrument der forstlichen Betriebsgestaltung. *Schriften zur Forstökonomie* Bd. 25, J.D. Sauerländer's Verlag, Frankfurt/M., S. 1- 13.

DEEGEN, P. (2000): Zur Interpretation der Faustmann'schen Formel als ein komplexes forstökonomisches Verhaltensmodell. *Allg. Forst- und Jagdzeitung*, H. 5-6., S. 88-96.

DEEGEN, P. (2002): Concerning the Effect of Capital User Costs on Investment Decision in Forestry or What do Martin Faustmann and John Maynard Keynes have in common? In: Chang, S.J. (ed.): *Proceedings of the Int. Symp. 150 Years of the Faustmann Formula: Its Consequences for Forestry and Economics in the Past, Present and Future*. Louisiana State University. S. 203-211.

DEEGEN, P. (2004): Ansätze einer ökonomischen Theorie der forstlichen Nachhaltigkeit. *Schriften zur Forstökonomie*, Bd. 25, J.D. Sauerländer's Verlag, Frankfurt/M., S. 14-36.

DEEGEN, P. (2004): Bäume – Grenzgänger zwischen Fisch und Kohle. In: *Ökonomische Rationalität und praktische Vernunft. Gerechtigkeit, Ökologische Ökonomie und Naturschutz. Eine Festschrift anlässlich des 60. Geburtstages von Prof. Dr. Ulrich Hampicke*. V. Königshausen und Neumann, Würzburg, S. 151-164.

KÖPF, E.U. (2002): *Forstpolitik*, Ulmer Verlag, Stuttgart, 320 S.

KRAMER, M; SCHURR, C. (Hrsg.) (2004): *Internationales Waldrecht und nachhaltige Waldnutzung (Deutschland - Polen - Tschechische Republik)*. Deutscher-Universitäts-Verlag, Wiesbaden. 164 S.

SPINNER, K. (2003): Kaufmotive und Verhalten von BVVG-Walderwerbern. Mit Beispielen aus dem Freistaat Thüringen. In: *Urbane Waldbesitzer*. Hrsg. von U. Schraml und K. R. Volz, Bd. 1 der Schriftenreihe *Freiburger Schriften zur Forst- und Umweltpolitik*, Verlag Dr. Kessel, Remagen-Oberwinter, S. 85 – 116.

WEBER, N. (Hrsg.) (2003): Facetten der Forstpolitikwissenschaft. Eine Aufsatzsammlung mit Beiträgen zum Ehrenkolloquium für Prof. Dr. habil. E.U. Köpf am 19.6.2002. Verlag Dr. Kessel, Remagen-Oberwinter, 122 S.

WEBER, N.; CHRISTOPHERSEN, T. (2002): The Influence of NGOs on the Creation of Natura 2000 during the European Policy Process. *Journal of Forest Policy and Economics* 4 (1): 1-12

WEBER, N. (2002): Tendencies towards Privatisation of International Politics and their Implications for the Forest Sector. In: Ranković, N.; Nonić, D. (eds., 2002): *Proceedings of the International Conference 'Privatisation in Forestry', Volume II*. Belgrade, p. 49-64

WEBER, N. (2005): Afforestation in Europe: Lessons learnt, challenges ahead. In: Stanturf, J.A.; Madsen, P. (eds.): *Restoration of Boreal and Temperate Forests*. Boca Raton: CRC Press, p. 121-135.

3.5 INSTITUTE OF FOREST GROWTH AND FOREST COMPUTER SCIENCES

Professorship in Forest Growth and Forest Mensuration

Prof. Dr. rer. silv. habil. Heinz Röhle

Professorship in Forest Biometrics and Forest Systems Analysis

Prof. Dr. rer. nat. Uta Berger

Office: Pienner Str. 8, 01737 Tharandt, Altbau
Postal address: Postfach 1117, 01735 Tharandt
Phone (Forest Growth): +49 (0)35203 38-31615
Phone (F. Systems Analysis): +49 (0)35203 38-31892
E-Mail (Forest Growth): roehle@forst.tu-dresden.de
E-Mail (F. Systems Analysis): berger@forst.tu-dresden.de

Computing Center

Head of Computing Center: Prof. Dr. rer. nat. Uta Berger
Technical manager: Dipl.-Inf. (FH) Margita Helmig

Office: Pienner Str. 8, 01737 Tharandt
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31303
E-Mail: resta@forst.tu-dresden.de



Altbau Tharandt (Main Building)

Courses

The Institute focuses on the following subjects

- Forest growth and forest mensuration
- Biometrics, ecological modelling and the analysis of ecological systems
- Operations research in forestry

The Professorship in Forest Growth and Forest Mensuration offers the following courses:

- In the Master course Tropical Forestry and Management: Lectures about “Forest Mensuration – Forest Growth Science” and “Forest Inventories”, as well as exercises in applied computer sciences

- Participation in the teaching of three modules of specialization
- Lectures and exercises in the Forest Inventory module of specialization
- Lectures and exercises in the Master course “Wood Technology and Wood Industry”
- Planning and organizing the complex field trip Alps: federal state Bavaria as well as Austria

The Professorship in Forest Biometrics and Forest Systems Analysis offers the following courses:

- Basic and advanced biometrics
- Applied computer sciences
- Ecological modelling and programming

The computing center supports other institutes in conducting teaching events, renders consultancy for students taking their degrees (Diplom*, Master, Bachelor), and assists in conducting courses in computer sciences for the staff of the Department of Forest Sciences.

Research Areas

Professorship in Forest Growth and Forest Mensuration:

- Experimental and theoretical exploration of the laws of forest growth and their simulation in models that allow forecasts of stand growth and timber yield
- Investigating of long-term trend changes of forest stands in growth behaviour with special regard to environment and climate conditions
- Assessing and modelling of growth and dry-matter production of forests in short rotation

Professorship in Forest Biometrics and Forest Systems Analysis:

- Development, implementation and application of agent-based simulation models
- Organismic responses to environmental changes and their consequences on the functioning of ecological systems
- risk assessment of management scenarios, disturbances, and long-term changes of environmental factors on population dynamics
- Interactions among organisms and their impact on the dynamics of ecosystems
- dynamics of tropical and subtropical coastal ecosystems (particularly mangrove forests)

* *academic degree at German Universities, similar to Master degree*

Special Tasks

Professorship in Forest Growth and Forest Mensuration:

- Expert consultancy for the magazines "Forstwissenschaftliches Centralblatt" and "Forstarchiv"
- Conducting of problem-specific advanced courses in the special fields of "Experiment planning, forest growth assessment and modelling, development of treatment concepts" at partner universities in the southeast Asian region
- Expert consultancy for federal forests, regarding optimization of forest inventories based on continuous forest inventories and their integration in a modified forest management planning
- Co-operation with research institutions and consultancy of farm enterprises regarding the management of forests in short rotation
- Supervision of the long-term yield experiments of the former Sächsische Versuchsanstalt in Saxony, Saxony-Anhalt and Thuringia
- Running of the collection of historical dendrometric devices
- Consultancy and guidance for annual ring analytical evaluations, incl. expert opinions

Professorship in Forest Biometrics and Forest Systems Analysis:

- Consultancy in the fields forest inventory, experimental design and statistical analysis
- Conducting of advanced courses in agent-based modelling in co-operation with Department of Ecological Modelling of the Centre For Environmental Research – UFZ Halle-Leipzig (Germany), and the Humboldt University in Arcata, U.S.A.
- Co-operation with the Smithsonian Institute Maryland (U.S.A), the University of Louisiana (U.S.A), and the University of Queensland (Australia) regarding mangrove forest dynamics in the neotropics
- Co-operation with the Centre For Tropical Marine Ecology (Bremen, Germany) and the University of Ho Chi Minh City (Vietnam) regarding mangrove forest regeneration and management in the Mekong Delta

Computing Center:

- Consultancy and support for the institutes and the administration in software procurement
- Installation, use and maintenance of computer networking for all institutes
- Data management

Technical Facilities

Professorship in Forest Growth and Forest Mensuration:

- Approx. 220 long-term forest growth trial plots, each consisting of 2 - 3 parcels
- Annual ring measuring device type "Göttingen"
- Forest measuring devices

Professorship in Forest Biometrics and Forest Systems Analysis:

- Workstation-Cluster

Computing Center:

- 2 PC-Pool (Servers, 25 PCs)

Publications (Selection)

BEMMANN, A.; FEGER, K.-H.; GROßE, W.; HARTMANN, K.-U.; PETZOLD, R.; RÖHLE, H.; SCHWEINLE, J.; STEINKE, C. (2007): Kurzumtriebsplantagen auf landwirtschaftlichen Flächen in der Region Großenhain im Freistaat Sachsen. Forstarchiv 78 (3), S. 95-101

BERGER, U.; ADAMS, M.; GRIMM, V. & HILDENBRANDT, H. (2006): Modeling secondary succession of neotropical mangroves: causes and consequences of growth reduction in pioneer species. Perspectives in Plant Ecology, Evolution and Systematics 7 (4): 243-252

DUKE, N.C.; MEYNECKE, J.-O.; DITTMANN, S.; ELLISON, A.M.; ANGER, K.; BERGER, U.; CANNICCI, S.; DIELE, K.; EWEL, K.C.; FIELD, C.D.; KOEDAM, N.; LEE, S.Y.; MARCHAND, C.; NORDHAUS, I.; DAHDOUH-GUEBAS, F. (2007): A world without mangroves. Science 317: 41-42 (Letters)

GRIMM, V.; REVILLA, E.; BERGER, U.; JELTSCH, FL.; MOOIJ, W.M.; RAILSBACK, ST.F.; THULKE, H.-H.; WEINER, J.; WIEGAND, TH.; DEANGELIS, D.L. (2005): Pattern-Oriented Modeling of Agent-Based Complex Systems: Lessons from Ecology. Science 310: 987-991

GRIMM, V.; BERGER, U., BASTIANSEN, F.; ELIASSEN, S.; GINOT, V.; GISKE, J.; GOSS-CUSTARD, J.; GRAND, T.; K. HEINZ, S.; HUSE, G.; HUTH, A.; JEPSEN, J.U., JØRGENSEN, CHR.; MOOIJH, W.M.; MÜLLER, B.; PEER, G.; PIOU, C.; RAILSBACK, S.F.; ROBBINS, A.M.; ROBBINS, M.M.; ROSSMANITH, E., RUGER, N.; STRAND, E.; SOUISSI, S., STILLMAN, R.A., VABØG, R.; VISSER, U.; DEANGELIS, D.L. (2006): A standard protocol for describing individual-based and agent-based models. Ecological Modelling. 198: 115-126

HUBER, C., KREUTZER, K., RÖHLE, H., ROTHE, A. (2004): Response of artificial acid irrigation, liming, and N-fertilisation on elemental concentrations in needles, litter fluxes, volume increment, and crown transparency of a N saturated Norway spruce stand. Forest Ecology and Management 200, 3-21

PIOU, C.; BERGER, U.; HILDENBRANDT, H.; GRIMM, V.; DIELE, K.; D’LIMA, C. (2007): Simulating cryptic movements of a mangrove crab: recovery phenomena after small scale fishery. Ecological Modelling. 205: 110-122

PIOU, C.; FELLER C.I.; BERGER, U. & CHI F. (2006): Zonation patterns of Belizean offshore mangrove forests 41 years after a catastrophic hurricane. Biotropica. 38: 365-374.

RÖHLE, H.; HARTMANN, K.-U.; GEROLD, D.; STEINKE, C.; SCHRÖDER, J. (2006): Aufstellung von Biomassefunktionen für Kurzumtriebsbestände. AFJZ 177 (10/11), S. 178-187

RÖHLE, H.; MÜNDER, K.; SCHRÖDER, J. (2004): Modeling of individual tree growth with special respect to competition effects. In: Sustainable methods and ecological processes of a conversion of pure spruce and pine stands into ecologically adapted mixed stands. Contributions to Forest Science. Ulmer, Stuttgart, 198-208

RÖHLE, H.; MÜNDER, K.; SCHRÖDER, J. (2004): Wachstumsmodell für zweischichtige Bestände in der Umbauphase. AFZ/DerWald 59 (22), S. 1227-1229

SCHRÖDER, J.; RÖHLE, H.; EISENHAUER, D.-R.; BRAND, S. (2006): Jugendwachstum der Eiche unter Kieferschirm in Sachsen. Forstarchiv 77 (6), S. 195-202

SCHRÖDER, J.; RÖHLE, H.; GEROLD, D.; MÜNDER, K. (2007): Modeling individual-tree growth in stands under forest conversion in East Germany. Springer. Eur. J. Forest Research 126, S. 459-472

3.6 INSTITUTE OF FOREST UTILIZATION AND FOREST TECHNOLOGY

Professorship in Forest Utilization

Prof. Dr. Dr. rer. silv. habil. Claus-Thomas Bues

Office: Pienner Straße 19, 01737 Tharandt, Judeich-Bau
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31315
E-Mail: fonuthar@forst.tu-dresden.de

Professorship in Forest Technology

Prof. Dr. forest. Jörn Erler

Office: Dresdner Straße 24, 01737 Tharandt
Postal address: Postfach 1117, 01735 Tharandt
Phone: +49 (0)35203 38-31301
E-Mail: erler@forst.tu-dresden.de



Judeich-Bau



Technology Building

Teaching areas

The institute is responsible for the special fields

Forest utilization:

- Wood science and technology
- Dendrochronology
- Tropical wood science and roundwood utilization
- Arboristics and tree care
- Non-wood forest products (NWFP)

Forest Technology:

- Forest opening and forest road construction
- Machines and equipment
- Forest technological approaches
- Forest ergonomics and labour economics
- Forest development and working processes in the tropics and subtropics

These subjects are imparted in lectures, seminars, exercises and field trips in the following courses:

- Bachelor / Master or Diplom* course Forestry TUD (Professorship of Forest Utilization and Forest Technology)
- Master course Tropical Forestry and Management (Professorship of Forest Utilization and Forest Technology)
- Master course Preservation of Historic Buildings and Monuments / Cultural Ecology TUD (Professorship of Forest Utilization)
- Master course Building Ecology TUD (Professorship of Forest Utilization)
- European Integration Study Environmental Sciences EIPOS (European Institute for Postgraduate Study) (Professorship of Forest Utilization)
- Department of Restoration, Fachhochschule (college) Erfurt (Professorship of Forest Utilization)
- Postgraduate course for forestry at UFRA Belém, Brazil (Professorship of Forest Technology).

Research Areas

Forest utilization:

- Ultra-structural investigations on wood and other plant tissues
- Dendrochronological and dendroecological investigations of woods
- Wood physical, elastical and mechanical investigations on flawless small samples (materials testing)
- Connections between silviculture and wood quality
- Development of insulating materials from renewable raw materials
- Arboristics and tree care

Forest Technology:

- Forest ergonomics and labour economics
- Conception for forest opening
- Normative decision for forest operations
- Strategic development of machines, tools and manpower
- Tactical adaptation of techniques to local frames and individual needs
- Operational steering of forest processes

Special Tasks

Forest utilization:

- Expert consultancy for DAAD, DGfH, DFG and others
- Consulting in the editorial board for the journal „Holz als Roh- und Werkstoff“
- Peer review for the journal „Schweizerische Zeitschrift für Forstwesen“, „Forstarchiv“, „Wood Science and Technology“

* academic degree at German Universities, similar to Master degree

Forest Technology:

- System approach for forest operations
- Optimization of processes for reforestation and harvesting
- Expert consultancy for machine-industry in forestry
- Machine management in forestry

Technical Facilities

Forest utilization:

- Scanning electron microscope
- Radio-densitometer
- Annual ring measuring devices
- Universal testing machine for materials testing
- Testing lab for novel materials from renewable raw materials

Workshop Tharandt

Tasks

- Construction, maintenance and repair of machines, devices and equipment for teaching and research of the Department of Forest Sciences
- Making of test specimens and testing equipment as well as demonstration material for teaching and research
- Support for field experiments for fulfilling the teaching and research tasks of the institutes of the Department of Forest Sciences

Technical Facilities

Mechanical Workshop:

Machines and equipment for metalworking as well as assembly of devices and plants, welder's work place for gas and electrical welding

Carpenter's workshop:

Machines for working on wood and wood materials as well as for repair and construction of furniture and components

Publications (Selection)

RICHTER, Ch.; BUES, C.T. (2005): Holzmerkmale (11): Hohlkehle, Spannrückigkeit und starker Wurzelanlauf. Holz-Zentralblatt 131 (3): 38-39

RICHTER, Ch.; BUES, C.T. (2005): Holzmerkmale (12): Kropf, Knolle, Hexenbesen. Holz-Zentralblatt 131 (16): 209-210

RICHTER, Ch.; BUES, C.T. (2005): Holzmerkmale (13): Blitzschlag, Blitzrinne und Blitzloch. Holz-Zentralblatt 131 (42): 535-536

- BUES, C.T.; TRIEBEL, J. (2005): Mythos "Mondholz". Wissenschaftliche Zeitschrift der Technischen Universität Dresden 54 (1-2): 70-76
- SCHOLZ, G.; BUES, C.T.; BÄUCKER, E.; GLATZLE, A. (2005): Holzeigenschaften und Verwendungspotentiale der Baumarten *Prosopis kuntzei* Harms. und *Schinopsis cornuta* Loes. aus dem Chaco Paraguays. Holztechnologie 46 (3): 18 – 25
- KÖNIG, J.; GÜNTHER, B.; BUES, C.T. (2005): New multivariate cross-correlation analysis. TRACE - Tree Rings in Archaeology, Climatology and Ecology 53 (3):159 – 166
- BUES, C.T. (2003): Hagelschäden an Fichten (*Picea abies* [L.] Karst.) im Dickungsalter und Vorschläge für eine mögliche waldbauliche Behandlung. Allgemeine Forst- und Jagdzeitung 174: 98 – 108
- ATTAH, N.; BUES, C.T.; SAGOE, J. (2005): Accelerated kiln drying of Wawa (*Triplochiton scleroxylon*) sawn timber. Bois et Forets des Tropiques 284 (2): 23 – 33
- WIENHAUS, O.; ZIMMERMANN, F.; BÄUCKER, E. (2001): Localisation of Manganese, Sulphur, Potassium and Magnesium in Needle Tissues of Spruce (*Picea abies* [L.] Karst.) in Eastern Parts of Erzgebirge Mountains on Sites with different Manganese and Magnesium Supply. Phyton. 41 (2): 19-42
- WEBER, A.; KÖNIG, J. (1997): Preservation of Timber in Low Oxygen Atmosphere IUFRO-Tagung "Forest products for sustainable forestry" Washington State University - Pullman/USA, Tagungsband: 114
- ERLER, J. (2000): Forsttechnik-Verfahrensbewertung. – Verlag Eugen Ulmer, Stuttgart. – Reihe UTB für Wissenschaft 2179. – 2000. – 246 S.
- ERLER, J. (2001): Von der Rückegasse zum Feinerschließungskonzept. – In: Forst und Technik. – Berlin 13 (2001)12. – S. 18-23
- ERLER, J.; GÜLDNER, O. (2002): Technologisch differenzierte Standorte. – In: Allgemeine Forstzeitschrift / Der Wald. – München 57 (2002)10. – S. 484-488
- FLEISCHER, M (2004): Die Geschichte der Motorsäge: Vom Faustkeil zur Einmannsäge / Eine Technik- und Wirtschaftsgeschichte – Forstfachverlag Scheeßel-Hetzwege, – 173 S.

3.7 INSTITUTE OF INTERNATIONAL FORESTRY AND FOREST PRODUCTS

Professorship in Tropical Forestry

Prof. Dr. rer. silv. Jürgen Pretzsch

Professorship in Forestry and Forest Products of Eastern Europe

Prof. Dr. rer. silv. Dr. h.c. habil. Albrecht Bemmam

Lectureship in Plant Production in the Tropics

Apl. Prof. Dr. rer. silv. habil. Holm Uibrig

Office:	Pienner Str. 7, 01737 Tharandt, Cotta-Bau
Office (Eastern Europe):	Pienner Str. 19, 01737 Tharandt, Judeichbau
Postal address:	Postfach 1117, 01735 Tharandt
Phone:	+49 (0)35203 38-31824
E-Mail:	tropen@forst.tu-dresden.de pretzsch@forst.tu-dresden.de



Cotta-Bau

Judeich-Bau



Teaching Tasks

The institute is responsible for the education in the Masters course Tropical Forestry and Management. Furthermore, the institute is concerned with teaching of World Forestry as well as Eastern European Forestry and Forest Products in the Forestry course of studies.

Teaching Areas

The two-year Masters course Tropical Forestry and Management leads to the degree *Master of Tropical Forestry (M.sc. forest.trop. - MSc.)*; working language: English

The course subdivides into:

- Natural-scientific, mathematical-technological and sociological foundations
- Core disciplines of silviculture and silvicultural treatment, utilization of forest and woody plants
- Planning and management, international forest policies and social forestry
- Academic research work

The Forestry course of studies comprises the compulsory subject „World Forestry“, being concerned with:

- Introduction to the history, tasks and problems of World Forestry
- Distribution, use and changing of forest areas at regional level
- Physical foundations of production: Forest formations and eco-zonation, biomass production
- Characterization of forest and agroforestry management systems (by case studies)
- Forest development strategies and models, forest management projects
- Global and regional trade with wood and other forest products, certification
- Tree species, their age and their distribution, wood production and utilization in Middle and Eastern European countries

The teaching fields „Eastern European Forestry and Forest Products“ concentrates on the following:

- Economic geography and regional-cultural studies of Eastern European countries
- Forest and forest products geography
- Forest management and wood utilization
- Forest policies
- Timber market
- Field trips to Eastern European countries, relevant to particular subjects
- Analysis of CO₂-potentials of forests and forest products
- Fast growing trees as an alternative to the common agrarian land use systems in Germany
- Management of decentralized biomass logistic networks
- Feasibility studies for wood based district heating stations

Additional subject „Tropical Forestry“

Seminars about selected topics of tropical and subtropical forestry.

Research Areas

Theory and research fields of the Professorship in Tropical Forestry

Research area I: Socio-economic diagnosis

- Land use dynamics and forest development
- Types of forest management and utilization - and their historical outline
- Research on traditional science systems (historical methods, hermeneutics)
- Survey of forest use systems (case studies, qualitative and quantitative methods of social research)
- Analysis of enterprises varying in organizational structure
- Assessment of the framework of forest management (sector analysis, forest and land law etc.)

Research area II: Projection and modeling

- Studies of the guiding principles of forestry in context with a dynamic environment
- Stability models for forest management (in various organizational structures and at various intensity levels, acceptability of forest and tree-related production)
- Application of Farming Systems Analysis and Research to forest and agroforestry enterprises

Research area III: Orientation towards actions

- Forest and agroforestry innovation such as planned social and technological change
- Certification, quality control and monitoring as a learning process
- Integrative forest sector planning
- Participatory planning and decision structures
- Strategic planning, monitoring and impact analysis in forest projects
- Forest extension and adaptive co-management of forests

Special Tasks

- *Inter-institutional co-operation*
Partnership relations to universities in developing countries (Paraguay, Chile, Brazil, Venezuela, Honduras, Sudan, Ethiopia, Kenya, Laos, Vietnam, Myanmar, Thailand, India, Bangladesh),
Advisory and consultancy for university co-operations with Brazil/Belém, Vietnam/Xuan Mai, Laos/Dong, DOK
DAAD (German Academic Exchange Service) expert opinions and short-term lectureships,
Cooperation with ATSAF and BEAF
Project consultancy for GTZ, KfW and other clients,
Joint programme development with INWENT - Internationale Weiterbildung und Entwicklung GmbH in Zschortau,
Developing of partnership relations to faculties of forestry and forest products of Eastern European countries.
- *Consultancy and assessment in forestry and forest products of Eastern European countries*
- *Teaching Tasks for:*
UNEP/UNESCO courses of postgraduate studies "Environmental Management, for developing and Emerging Countries", "Social Forestry" and Integrated Land-use planning Management at Technische Universität Dresden, INWENT Zschortau

Technical Facilities

- Library of tropical forestry

Publications (Selection)

BEMMANN, A. (2001): Nachhaltige Waldnutzung in Russland – Realität oder Fiktion? In: Raum- und Zeitdimensionen der Forstwirtschaft. Tagungsband zum Ehrenkolloquium anlässlich des 70. Geburtstages von Prof. Dr. habil. Dr. h.c. Horst Kurth, 19.4.2001, Tharandt

BEMMANN, A. (2001): Land Use for Forestry. In: Goetz, St.; Jaksch, T.; Siebert, R. (Edit.) Agricultural Transformation and Land Use in Central and Eastern Europe. Ashgate Publishing Limited, Aldershot GB, Burlington USA, Singapore, Sydney. P. 301-331

BEMMANN, A. mit GROSSE, W. (2003): Fuel Wood Utilisation in Saxony - Motivation, Balance and Trends Summary. In: Materialy meždunarodnoi naučno-praktičeskoj konferencii. Problemy rasvitiâ ekonomiki Dal'nego Vostoka, Chabarovsk, Verlag Staatliche Technische Universität Chabarovsk, pp. 294-297

BEMMANN mit HASENKAMP (2003): Die Wal Holz-Option, eine Brücke zwischen Klimapolitik und Wirtschaft – Zehn Thesen, in: Schweizerische Zeitschrift für Forstwesen, Nr. 12/2003, S. 480- 488

BEMMANN mit WIENHAUS; WEGENER (2004): 200 Jahre St. Petersburger Forsttechnische Akademie. In: AFZ-Der Wald, Berlin

PRETZSCH, J.; HOFMAN, F.; LISS, B. (2001): Analyse und Bewertung: Der gesellschaftspolitische Dialog zur Erarbeitung eines nationalen Waldprogramms auf Bundesebene. AFZ/Der Wald 6, 287-290

PRETZSCH, J.; UIBRIG, H; FRATTINI, M.; SOUSA, R.J.; SANTOS, W.M. dos; THÜMMLER, C.; KRETSCHMER, M.; GERINGER, U. (2002): Constraints and opportunities for the management of tropical rainforest in the Amazon. Wissenschaftliche Zeitschrift der TU Dresden

PRETZSCH, J. (2003): Cultural approaches to forestry: Germany and Europe. Contribution to the Conference "The nature and culture of forests: Implications of diversity for sustainability, trade and certification" from 10.-13.5.2001- in Vancouver/Canada, Institute for European Studies, University of British Columbia

PRETZSCH, J.; ELSASSER, P. (2004): A socio-political dialogue to promote sustainable forest management, Forests and forestry products, Brussels, COST Action E19, pp. 113 - 126

PRETZSCH, J. (2004): Forest related rural livelihood strategies in national and global development, Forests, Trees and livelihoods, Great Britain, Vol. 15, pp. 115-117

PRETZSCH, J.; UIBRIG, H.; FRATTINI, M.; SANTOS, W.M. dos; SOUSA, R.J. (2004): Vergleichende Analyse von Waldnutzungssystemen in Amazonien – Waldnutzende Haushalte, konventionelle Holzbetriebe und zertifizierte Holzunternehmen. GTZ-Tropenökologisches Begleitprogramm, Eschborn. S. 120

UIBRIG, H.; DARR, D. (2004): Interrelation between peasant tree planting and the creation of private land property in Laos – case studies from Vientiane and Xieng Khouang provinces. Paper presented to the 1st World Congress of Agroforestry (WCA) 27 June – 02 July 2004, University of Florida (IFAS), Orlando, Florida, USA

UIBRIG, H.; TEHERANI-KRÖNNER, P.; DANG TUNG, HOA (2003): Analyse von Geschlechterverhältnissen bei der Entwicklung von Social Forestry – ein Fallbeispiel aus der Provinz Son La in Vietnam. *Wiss. Ztschr. TU Dresden* 52 (2003) 3, 17-24

NEGUSSIE, A. (2004): Farm Forestry Decision-Making Strategies of the Guraghe Households, Southern-Central Highlands of Ethiopia. – TU Dresden, Tharandt, 1-85

UIBRIG, H.; (2004): Zur Genese der deutsch-vietnamesischen Zusammenarbeit im Forstbereich – ein Erfahrungsbericht an Beispielen. – In: *Journal of Agriculture and Rural Development in the Tropics and Subtropics*, Universität Kassel, Beiheft 77, pp. 229-246,

UIBRIG, H.; DEVI, K. (2004): Micro financing within Joint Forest Management Committees for the empowerment of Women Self Help Groups in India: A case study from Betul district, M.P. Deutscher Tropentag Berlin 5.-7.10.2004, www.Tropentag.de.

UIBRIG, H.; SANTOS, W.N. dos (2005): Forest extraction and product marketing of selected dweller systems in Várzea and Terra firme locations of Pará state, Brazil. Deutscher Tropentag Hohenheim 11.-13.10.2005, <http://www.proceedings2005.tropentag.de>.

3.8 INSTITUTE OF SILVICULTURE AND FOREST PROTECTION

Professorship in Silviculture

Prof. Dr. forest habil. Sven Wagner

Professorship in Forest Protection

Prof. Dr. rer. silv. Michael Müller

Lectureship in Wildlife Ecology and Management

Apl. Prof. Dr. forest habil. Dr. med. Sven Herzog

Office:	Pienner Str.8, 01737 Tharandt, Altbau
Postal address:	Postfach 1117, 01735 Tharandt
Phone:	+49 (0)35203 38-31338
E-Mail:	michael.mueller@forst.tu-dresden.de wagner@forst.tu-dresden.de herzog@forst.tu-dresden.de

Courses

The Institute focuses on the following subjects

- Ecological basics of silviculture
- Genetics in silviculture and wildlife management
- Forest renewal (forest seed management system, forest plant raising, artificial forest regeneration, recultivation of dumps, reforestation of areas damaged due to air pollution)
- Forest treatment (silvicultural systems, stand tending and care; natural forest regeneration)
- Tree species monographies
- Wildlife species monographies
- Biological-ecological foundations of forest protection
- Anthropogenic, abiotic and biotic injurious factors and their causes
- Forest hygiene
- Control, prognosis and defense of damaging factors
- Basics of wildlife biology, biodiversity and conservation biology
- Wildlife management in different regions of the Earth
- Wildlife diseases and interactions with human diseases
- Interactions of man and wildlife under different socio-economic circumstances and in different regions of the earth

In the following courses:

- Diplom* courses: Forestry, Geography, Landscape Architecture
- Postgraduate courses: Environment Protection and Regional Planning
- Master courses: Tropical Forestry and Management

* academic degree at German Universities, similar to Master degree

- UNEP/UNESCO Postgraduate studies
- International Master courses „Sustainable forestry in the southern Baltic sea region“ and „Sustainable forestry in southern Sweden“ at the SLU Alnarp/Sweden
- Studium generale Technische Universität Dresden

Research Areas

- Ecological basics of silviculture
- Regeneration ecology of commercial tree species, as well as short-lived tree species
- Methods of forest transformation and forest tending
- Research on mixed stands
- Vitality and damage of pioneer tree species
- Structure and dynamics of biocoenoses in windthrow areas
- Ecological implications and management of selected foreign tree species
- Forest-sanitary development in forest stands under transformation
- Prevention of damage due to insects, mice and game
- Population ecology of potential pests and natural regulators
- Natural regulation in natural forests
- Forest fires
- Genetics and biodiversity of wildlife
- Game and forest
- Socio-economic aspects of wildlife sustainable use
- Wildlife management in national parks and other large reserves
- Sociobiology of various wildlife species
- Man–animal relationships
- Wildlife diseases

Special Tasks

- Expert consultancy for DFG (German Research Foundation), BMVEL, SMLU, DBU, FUST and other institutions
- Chair of the scientific council “Research Award of the German Wildlife Foundation” (apl. Prof. Herzog)
- Editor “European Journal of Wildlife Research” (apl. Prof. Herzog)
- Member of editorial board ‘Beiträge für Forstwirtschaft und Landschaftsökologie’
- Founding member of the German Society of Wildlife Biology and Game Management (VWJD; apl. Prof. Herzog)
- Expert consultancy in jurisdiction
- Expert consultancy in wildlife management

Technical Facilities

- Silvicultural education and experimentation terrain
- Demonstration and research game reserve
- Entomological lab
- Academic experimental areas in various forest areas for long-term investigations
- Arrangements for experimental investigation on the ecological monitoring field
- Instructional and documentary collections
- Leaf area index measuring device LAI 2000
- Fisheye – photo equipment
- Molecular and biochemical genetic lab
- Image analysis system – OPTIMAS
- C/N-Analyzer
- Minicuvette system

Publications (Selection)

HEIDECKE, T.; MÜLLER, M. und PELZ, H.-J. (2002): Echinops, ein Repellent zur Abwehr forstschädlicher Kurzschwanzmäuse. *AFZ/Der Wald*, 57: 471-473.

HERZOG, S. (2000): Sense and nonsense of genetic studies on endangered species. *Cahiers d'Éthologie* 20, 403-410.

HERZOG, S. (2001): Monitoring the genetic variation of the European common otter (*Lutra lutra*) – an indispensable precondition to any long-term conservation measure. *Wissenschaftliche Mitteilungen aus dem Niederösterreichischen Landesmuseum* 14, 206.

HERZOG, S.; GEHLE, T. (2001): Genetic structures and clinal variation of European red deer *Cervus elaphus* populations for two polymorphic gene loci. *Wildlife Biology* 7, 55-59.

HERZOG, S. (2002): The genetic status of oaks (*Quercus petraea* and *Quercus robur*) in Central Europe: consequences for silviculture and gene conservation. *Verhandlungen der Gesellschaft für Ökologie* 32, 206.

HERZOG, S.; KRÜGER, T. (2003): Influences of habitat structure, climate, disturbances and predation on population dynamics of Black Grouse in the northern Ore Mountains. *Sylvia – Journal of Ornithology* 39, 9-15

MEYER, M.; BRAASCH, H.; MÜLLER, M. und POHRIS, V. (2003): Untersuchung von Bäckerböcken (*Monochamus galloprovincialis* Ol.) als Vektoren holzbewohnender Nematoden in einem Waldbrandgebiet in Brandenburg. *Nachrichtenbl. Deut. Pflanzenschutzd.*, 55: 10-14.

OLDENBURG, C. und MÜLLER, M. (2004): Der Einfluss kleinflächiger Waldumbauten mit Trauben-Eiche (*Quercus petraea* [Matt.] Liebl.) in Wäldern der Gemeinen Kiefer (*Pinus sylvestris* L.) auf die Laufkäferzönose. Beitr. Forstwirtsch. u. Landschaftsökol. (eingereicht).

STÖLZNER, H.; MÜLLER, M. und HORN, G. (2002): Untersuchung eines Extraktes aus der Großen Kugeldistel (*Echinops sphaerocephalus* L.) als neues Repellent zur Abwehr von Verbisschäden durch Schalenwild. Beitr. Forstwirtsch. u. Landschaftsökol., 36:182-186.

VOIGT, D.; KÖHLER, G.; POHRIS, V. (2003): Beobachtungen zur Fortbewegung, Paarung und Eiablage der räuberischen Weichwanze *Dicyphus errans* WOLFF (Heteroptera, Miridae, Dicyphinae) im Botanischen Garten der TU Dresden. Mitteilungen der DPG, 33 Jg., Nr. 1: 42-43.

LEDER, B.; WAGNER, S.; WOLLMERSTÄDT, J.; AMMER, C. (2003): Bucheckern-Voraussaat unter Fichtenschirm - Ergebnisse eines Versuchs des Deutschen Verbandes Forstlicher Forschungsanstalten/Sektion Waldbau – Forstwissenschaftliches Centralblatt, Jg.122, S.160 - 174.

MÜLLER, K.H.; WAGNER, S. (2003): Fine root dynamics in gaps of Norway spruce stands in the German Ore mountains. Forestry, Vol.76, No.2, pp.149 - 158.

STOYAN, D.; WAGNER, S. (2001): Estimating the fruit dispersion of anemochorous forest trees. Ecological Modelling, Vol.145, No.1, pp.35 - 47.

WAGNER, S. (2001): Relative radiance measurements and zenith angle dependent segmentation in hemispherical photography. Agricultural and Forest Meteorology, Vol. 107, No. 2, pp.103 - 115.

FISCHER, A. & FISCHER, H.: Restoration of Forests. - In: van Andel, J. & Aronsen, J. (eds.): Restoration Ecology - A European perspective (accepted).

3.9 INSTITUTE OF GENERAL ECOLOGY AND ENVIRONMENTAL PROTECTION

Professorship in General Ecology

Prof. Dr. rer. nat. habil. E. Gert Dudel

Professorship in Land Improvement and Nature Conservation

Prof. Dr. rer. nat. habil. Peter A. Schmidt

Lectureship in Environmental Systems Analysis

Doz. Dr. rer. nat. Karl-Friedrich Albrecht

Office : Pienner Str. 19, 01737 Tharandt, Judeichbau
Postal address : PF 1117, 01735 Tharandt
Phone : +49 (0)35203 38-31390
E-Mail : dbartels@forst.tu-dresden.de

Courses

Lectures

- Geobotany / Vegetation Science (phytogeographical and phytosociological fundamentals of forestry, nature conservation and landscape planning)
- Nature conservation and landscape management
- Guidelines and goals in nature conservation
- Biotope types of natural and cultural landscapes
- Species and biotope protection, protected area management
- Bioindication (floristic-phytosociological indicators)
- Biotope mapping
- General ecology
- Bioindication and biomonitoring
- Ecological engineering
- Plant ecology / eco-physiology
- Remediation and restoration ecology
- Environmental system analysis
- Special aspects of environmental systems analysis
- System analytical aspects of energy use

In the following courses

- Diplom* courses: Biology, Forest Science, Geography, Hydrology, Water Management, Waste Management, Landscape Architecture, Mechanical Engineering, Civil Engineering, Vocational Education
- Master courses: Tropical Forestry and Management, Hydro Sciences and Engineering
- Studium generale Technische Universität Dresden

* academic degree at German Universities, similar to Master degree

- Postgraduate Diplom* courses in "Environmental protection and landscape planning" in the units:
Nature protection and landscape conservation;
Spatial planning; and
Resources protection and management
- UNEP/UNESCO/BMU Postgraduate studies in Environmental Management for developing countries, including a postgraduate Diplom* course, and short-term courses. "Biodiversity Conservation" and "Integrated Land Use Management"

Research Areas

- Structure and dynamics of phytocoenoses, esp. of forest ecosystems, bog woodland, floodplains
- Application of vegetation and population ecology in silviculture and nature conservation
- Development and management of protected areas and other priority areas for nature conservation
- Strategies of species, biotope and landscape protection
- Endangered plant species and populations (main emphasis on woody flora; target species of forest and meadow vegetation)
- Reclamation and restoration of abandoned mining landscapes (uranium ore mining)
- Development and improvement of bioassays for metals, metalloids and radionuclides on population and community level (bioindication and ecotoxicology)
- Cycling and storage of nutrients and contaminants in forests, wetlands, surface waters, mining industry waste dumps and tailings
- Primary production, decomposition and carbon sequestration in swamp forest and wetlands
- Fate of arsenic, radionuclides and heavy elements, respectively, in forests, meadows and wetlands
- Population ecology of wetland plants and periphyton (Biofilms)
- Bioavailability, chemical speciation, biomineralisation and eco-toxicology of arsenic, uranium and radium
- Development of technologies in phytoremediation and enhanced natural attenuation
- Modelling, comparison, interpretation and prognosis of growth processes
- Possibilities for the use of renewable energies

Special Tasks

- Member of Specialist Groups (Temperate Broadleaved Trees, Conifers) of the IUCN Species Survival Commission and of the Global Tree Specialist Group (Prof. Schmidt)
- Consultancy and active co-operation in projects for development and management of protected area systems (National Parks, Biosphere Reserves, World Heritage Sites) in Russia, Ukraine and South Caucasian countries (Prof. Schmidt)
- Vice-president of the German Dendrological Society (Prof. Schmidt)
- Member of the Advisory Board for Nature Conservation of Saxony (Prof. Schmidt)
- Member of Editorial Boards, e.g. of "Annals of Agrarian Sciences", "Green Carpathians", "Waldoekologie-online", "Archiv für Naturschutz und Landschaftsforschung" ("Archive for Nature Conservation and Landscape Planning") (Prof. Schmidt)
- Member of "Working Group Energy" of the German Physical Society (Doz. Dr. Albrecht)

Technical Facilities

- Nature Conservation Station Müritzhof in the Müritz National Park
- Labs for biochemical, microbiological and plant analysis, ultra-trace and radionuclide analysis, climate chambers (Ecotrons)
- Experimental station with wetland mesocosms, open top chambers (OTC's) and greenhouses (regulated clean air and irrigation option), weather and trace gas analysis station

Publications (Selection)

ALBRECHT, K.-F., ORLAMÜNDER, D. (2005): Verbindung zwischen 2. Hauptsatz der Thermodynamik, Elektroenergieverbrauch und Wirtschaftswachstum. Verhandl. DPG, (6), Bd. 40, Heft 5, S. 33

ALBRECHT, K.-F. (2002): Vergleichende Analyse des Wirtschaftswachstums anhand des Stromverbrauchs mittels eines Makromodells. Verhandlungen der Deutschen Physikalischen Gesellschaft 1/2002, 449-450.

BENABDELLAH, B., ALBRECHT, K.-F., POMAZ, V.L., DENISENKO, E.A., LOGOFET, D.O. (2003): Markov chain models for forest successions in the Erzgebirge, Germany. Ecological Modelling 159, 145-160.

DIENEMANN, H., DIENEMANN, C., DUDEL, E.G. (2005): Influence of allochthonous plant litter on the fixation of Uranium in sediments. In: Merkel, B.J., Hasche-Berger, A. (Hrsg.), Uranium in the Environment, Springer-Verlag Berlin Heidelberg 2006, pp. 149-157.

- DUDEL, E.G., BRACKHAGE, C., DIENEMANN, H., MKANDAWIRE, M., WEISKE, A. (2005): Capacity of natural attenuation of trace contaminants from uranium mine tailing waters in nature-like constructed wetlands. Mine water - Process, Policy, Progress. Jarvis, A.P., Budgeon, B.A., Younger, P.L. Berlin, Heidelberg, New York, Springer Verlag; Preprint in: Proceedings of the Symposium: Mine water 2004, 2:25-36, University of Newcastle, ISBN 0-9643827-3-0
- FEDERBUSCH, U., ALBRECHT, K.-F. (2001): Prognosis and degree of course of microbial degradation. Chem. Engineering Technology, 24, Issue 1, 142-146.
- MENDE, W., ALBRECHT, K.-F. (2001): Beschreibung und Interpretation des Fichtenwachstums mit Hilfe des Evolon-Modells. Forstwiss. Cbl., 120, 53-67.
- MKANDAWIRE, M., TAUBERT, B., DUDEL, E.G. (2004): Capacity of *Lemna gibba* L. (Duckweed) for uranium and arsenic phytoremediation in mine tailing waters. International Journal of Phytoremediation 6(4): 347-362
- MKANDAWIRE, M., DUDEL, E.G. (2005): Accumulation of arsenic in *Lemna gibba* L. (duckweed) in tailing waters of two abandoned uranium mining sites in Saxony, Germany. Science of the Total Environment, 336, pp. 81-89.
- MKANDAWIRE, M., DUDEL, E.G. (2005): Assignment of *Lemna gibba* L. (duckweed) bioassay for *in situ* ecotoxicity assessment. Aquatic Ecology, 39, pp. 151-165.
- SCHMIDT, P.A. (2003): The Diversity, Phytogeography and Ecology of Spruces (*Picea* Pinaceae) in Eurasia. Acta Horticulturae 615: 189-201.
- SCHMIDT, P.A. (2004): Oaks and Oaks Forests in Caucasia. In: 2003 Proceed. Intern. Oak Conf Winchester, England. Journ. Intern. Oak. Soc., 15:9-29.
- SCHMIDT, P.A. (2005): Naturschutz in Kaukasien. In: KONOLD, W., BÖCKER, R., HAMPICKE, U. (Hrsg.), Handbuch Naturschutz und Landschaftspflege, 15. Erg.Lfg. 4/05. Landsberg, ecomed, pp. 1-26.
- SCHMIDT, P.A., DENNER, M., JÄGER, U.G. (2004): The ground vegetation as indicator of a nature conservation assessment of forest conversion. Forstwiss. Beitr. / Contrib. To Forest Sciences, Tharandt, 20:98-100.
- THOMASIU, H., SCHMIDT, P.A., (2003): Waldbau und Naturschutz. In: KONOLD, W., BÖCKER, R., HAMPICKE, U. (Hrsg.): Handbuch Naturschutz und Landschaftspflege 10. Erg.Lfg. 8/03. Landsberg, ecomed, pp. 1-45.