

Summerschool Ecohydrology

Amsterdam, June 11-15, 2007



Lecturers:

Marc Bierkens – *Professor of Hydrology*, Department of Physical Geography, Faculty of Geosciences, Utrecht University (UU), Utrecht, the Netherlands
Sampurno Bruijnzeel – *Associate Professor of Forest Hydrology*, Department of Hydrology and Geo-environmental Sciences, Vrije Universiteit Amsterdam (VU), the Netherlands

Han Dolman – *Professor of Ecohydrology*, Department of Hydrology and Geo-environmental Sciences, Vrije Universiteit Amsterdam (VU), the Netherlands

Bart Kruijt – *Researcher of the Tropical Carbon Cycle*, Alterra, Research Institute for Green Space (WUR), Wageningen, the Netherlands

Maciek Lubczynski – *Associate Professor of Subsurface Hydrology*, International Institute for Geo-Information Science and Earth Observation, ITC, Enschede, the Netherlands

Eddy Moors – *Team leader Land-Atmosphere Interactions*, Centre for Water and Climate, Wageningen University and Research Centre, Wageningen, the Netherlands

Karin Rebel – *Postdoctoral researcher ecohydrology*, Department of Hydrology and Geo-environmental Sciences, Vrije Universiteit Amsterdam (VU), the Netherlands

Max Rietkerk – *Assistant Professor of Ecosystem Analysis and Modeling*, Department of Environmental Sciences, Utrecht University (UU), Utrecht, the Netherlands

Susan Riha – *Charles L. Pack Research Professor of Forest Soils*, Department of Atmospheric Sciences, Cornell University, Ithaca, NY, USA

Pieter Stuijtzand – *Professor of Hydrochemistry*, Department of Hydrology and Geo-environmental Sciences, Vrije Universiteit Amsterdam (VU), the Netherlands

Jos Verhoeven – *Professor of Wetland Ecology*, Department of Landscape Ecology, Utrecht University (UU), Utrecht, the Netherlands

Flip Witte – *Principal Researcher Ecology & Hydrology*, Kiwa Water Research, Nieuwegein, the Netherlands

Sjoerd van der Zee – *Professor of Soil Physics, Ecohydrology, and Groundwater Management*, Wageningen University (WUR), Wageningen, the Netherlands

Information:

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<http://ecohydro.falw.vu.nl>

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Introduction:

Ecohydrology, the science of the multiple interactions between the vegetation and the hydrological cycle is one of the most promising and rapidly growing fields in hydrology. Originally its major concern was to identify the hydrological boundary conditions for plant growth and diversity.

In recent years, emphasis has shifted towards the numerous and complex interactions between soil, plants and atmosphere across a range of scales. It now successfully combines hydrology with ecology and biogeochemistry (i.e. greenhouse gas emission). As such, it is time to take stock, present the latest developments in a coherent fashion and offer advanced students the opportunity to learn about key developments in this exciting field of hydrology.

Aim:

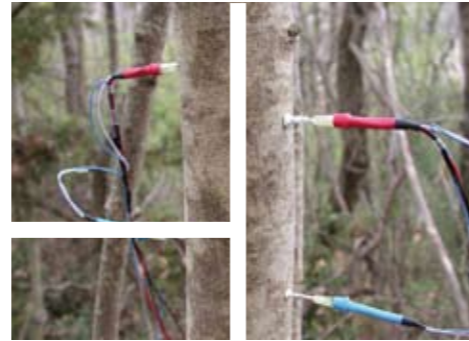
The aim of the summer school is to provide a state of the art course in ecohydrology. This includes the relationship between hydrology and landscape ecology, soil-plant-atmosphere interactions, greenhouse gas emission, as well as large scale biogeochemical modeling. Ecohydrological processes in several contrasting ecosystems will be discussed in some detail.

Audience:

The course is at the graduate level, and aimed at PhD students and professionals with an interest in the current state of the field of ecohydrology. MSc students of suitable background are also welcome to participate.

Contents:

The course consists of 10 separate sessions of half a day each, in which a subject is treated by one or more experts. The sessions consist of a) lectures providing a state of the art review on the subject; b) the introduction of ongoing controversies and questions of importance regarding the subject based on a number of key papers; c) discussion of these controversies, crucial questions and possible avenues for new research with the course attendants.



The course outline is as follows:

Day 1:

morning: J. Verhoeven, UU and F. Witte, KIWA
Ecohydrology; abiotic environment and vegetation response
afternoon: Ecohydrology; abiotic environment and vegetation response, fieldtrip

Day 2.

morning, afternoon: M. Bierkens, UU, S.J. Riha, Cornell, S. van der Zee, WUR and K.T. Rebel, VU
Processes in Ecohydrology
Role of vegetation in the water balance, e.g. interception, transpiration, runoff, below-ground processes (water uptake by roots), carbon balance, greenhouse gas emissions etc. Includes discussion on how to best measure and model these processes.

Day 3:

morning: A.J. Dolman, VU
Large-scale processes
Feedback between vegetation and climate, mesoscale eco-hydrological modeling.
afternoon: P.J. Stuijtzand, VU
Excursion to the world's largest vegetated lysimeters in Castricum

On days 4 and 5 we will study examples of different ecosystems, and the ecohydrological mechanisms in these ecosystems. What are the controlling ecohydrological factors of these systems? How do plants adjust themselves to the environment and what are the ecohydrological implications of these adjustments?



Day 4.

morning: M. Lubczynski, ITC and M. Rietkerk, UU
Ecohydrology of water-limited systems
afternoon: E. Moors, Alterra
Ecohydrology and carbon balance of coniferous and broad-leaved forests in the Netherlands

Day 5.

morning: B. Kruijt, WUR-Alterra
Ecohydrology and greenhouse gas emission of Amazonian lowland rainforest
afternoon: L.A. Bruijnzeel, VU
Ecohydrology of tropical montane cloud forests

Literature:

We will provide a syllabus with lecture notes, hand-outs from presentations and key articles

Prerequisites:

Essential: BSc or equivalent degree in Earth or Biological Sciences, e.g. hydrology, ecology, or environmental sciences.
Preferably: some courses taken or knowledge of hydrology, ecology, micro-climatology

Costs and registration:

Costs of attending the course are Euro 250.00, including coffees, lunches, as well as dinner on Day 5, and the costs of the field excursions. Registration can be done through the website <http://ecohydro.falw.vu.nl>. The website also shows a list of hotels in Amsterdam, information about the city and ways to travel to Amsterdam and to the Venue.

