

Participating Institutes:



Astrophysical Institute Potsdam
www.aip.de



Helmholtz Centre for Environmental Research, Leipzig
www.ufz.de



Leibniz Research Centre for Working Environment
and Human Factors, Dortmund
www.ifado.de



Leibniz Institute of Freshwater Ecology and
Inland Fisheries, Berlin
www.igb-berlin.de



Leibniz Institute for Plasma Science and Technology,
Greifswald
www.inp-greifswald.de



Leibniz Institute for Regional Development and
Structural Planning, Erkner
www.irs-net.de



Leibniz Institute for Zoo and Wildlife Research,
Berlin
www.izw-berlin.de



Berlin University of Technology – Institute for Urban
and Regional Planning
www.isr.tu-berlin.de

Berlin University of Technology – Institute for Energy
and Automation Technology
www.li.tu-berlin.de



Freie Universität Berlin – Institute for Space Sciences
www.fu-berlin.de/iss

Project Management

Leibniz Institute of Freshwater Ecology and Inland Fisheries
Müggelseedamm 310 · 12587 Berlin

PD Dr. Franz Hölker

Project leader
Phone: +49 (0)30 64 181 665
Fax: +49 (0)30 64 181 663
email: hoelker@igb-berlin.de

Dr. Katharina Gabriel

Project coordinator
Phone: +49 (0)30 64 181 716
email: gabriel@igb-berlin.de

Dr. Sibylle Schroer

Project coordinator
Phone: +49 (0)30 64 181 717
email: schroer@igb-berlin.de



The Leibniz-Zwischenruf and the english brochure are
available on request or on the Website of the research
network www.verlustdernacht.de

Photo Copyrights

Cover (Night): Image and data processing by NOAA's National Geophysical Data Center. DMSP data collected by US Air Force Weather Agency.; Cover: © NOAA/DLR/swisstopo, NPOC; bierchen/Fotolia (Ecology); H. Kollinger/Digitalstock (Health), Murat Subatli/Fotolia (Lighting Technology), Dr. Andreas Hänel/Vereinigung der Sternfreunde – Fachgruppe Dark Sky (Socioeconomy), Franz Xaver Kohlhauf (Astronomy)

Idea & Konzeption
Christoph Herbort-von Loeper

Layout & Print
unicom-berlin.de

Research Network

LOSS of the NIGHT



SPONSORED BY THE



Loss of the Night

A bright night sky, illuminated by an abundance of lights. Because light has positive connotations with security, wealth and modernity, humans tend to illuminate their environment intensively. Although artificial light provides countless advantages, it also has its dark side: Over the last decades, light pollution has intensified, without regard to its potential impacts on humans and the environment.

In the interdisciplinary research project "Loss of the Night", funded by the Federal Ministry of Education and Research, scientists will investigate the reasons for the increasing illumination of the night as well as its ecological, health, cultural and socioeconomic effects. The results of this research will help us to develop improved lighting concepts and sustainable technologies.



Ecology

Light has a profound effect on the behavioural patterns of most living organisms. Birds, insects, even fish and amphibians navigate by using the spangled sky. The animals are disturbed by artificial lighting in their behaviour and orientation. The consequences for biodiversity and the balance of ecosystems due to the loss of millions of insects, which get fatally irritated by streetlight, are yet undated. We plan to investigate how and why symbiotic communities in water and on land react to artificial light.



Health/Chronobiology

Light represents one of the biggest (influencing) factors on human health and wellbeing. In the course of evolution we adapted to the daily and seasonal rhythms of light. Too much light at inappropriate times can interfere with this structure and influence wellbeing, performance and human health negatively. We are up to investigate the underlying physiological mechanisms and detect how strong modern lighting concepts influence physiology and behaviour of humans and animals.



Socioeconomy

Artificial light fulfills a number of social functions. It brings along a considerable increase in people's sense of security, it is a symbol of modernity and stages monuments. Implementing more sustainable forms of artificial lighting is not purely a technical task, but is dependent also on contributions from the social sciences and humanities. Therefore, we investigate suitable institutional arrangements and look for solutions for the European, national, regional and local level.

Astronomy/Cultural History

Since the introduction of electric lighting, light has become a symbol of modernity and progress, darkness, however, is frequently associated with backwardness and danger. The nights are illuminated so brightly in areas where people live that starlight fades. But since we started observing the starry sky, we gathered information on the cosmos which are the basis of our knowledge. Long ago professional astronomy started to move from the cities into less "light polluted" areas, so people in urban areas alienate from the night sky. We want to raise awareness for the cultural extinction and investigate how to regain the fascination of a starry night.



Lighting Technology

An optimal lighting system has to provide light with necessary intensity and quality at the time and place where it is really needed. This requires modern light sources and light distribution as well as lighting scenarios. We work in close cooperation with lighting manufacturers to develop efficient and adjustable lighting systems that fulfill the socioeconomical, chronobiological and ecological requirements.