modules

CASiMiR fish

… investigate the habitat suitability for selected indicator species in rivers. Requirements: river bathymetry, morphology, measured/calculated water surface, velocity, fish habitat requirements.

CASiMiR vegetation

… forecast the development of flood plain vegetation under changing flow regimes. Requirements: digital elevation model, selected results from a 2D hydraulic model such as the maximum shear stress and submergence time.

CASiMiR hydro

… determine the impact of changing flow scenarios on energy production. Allows for the inclusion of economic analyses in environmental flow studies. Requirements: inflow hydrograph, minimum flow requirements, efficiency curve, operating head and energy prices.
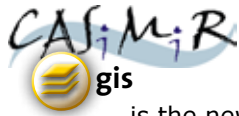
CASiMiR gis

… is the newest product in the CASiMiR software Family. CASiMiR GIS is a flexible GIS-based module for habitat mapping of especially challenging conditions such as hydropeaking. Requirements: georeferenced topographical, morphological, and hydraulic data.

CASiMiR benthos

… investigate the habitat suitability of benthic organisms for selected taxa. Requirements: FST-hemisphere measurements of the near-bed hydraulic conditions and hydraulic preference functions.

software

Base versions of each CASiMiR module are freely available for download. Professional application of the software should be preceded by introductory courses, after which the full versions can be made available.

For this reason we offer a range of training courses. Due to the specificity of the applications, during the introductory course we can use project-specific data in order to optimize your use of CASiMiR.

Course participation fees depend on the scope, as well as the number of participants, beginning at 500 Euro. Special conditions may apply for purely scientific applications.

More information can be found by contacting us:

sje

sje - Schneider & Jorde Ecological Engineering GmbH
Dr.-Ing. Matthias Schneider, Dr.-Ing. Klaus Jorde
fon: +49-(0)711-677-3435
www.sjeweb.de

LWW

Institut für Wasserbau, Universität Stuttgart
Institut für Wasser- und Umweltsystemmodellierung
Lehrstuhl für Wasserbau und Wassermengenwirtschaft
Prof. Dr.-Ing. Silke Wieprecht
fon: +49-(0)711-685-64752
www.iws.uni-stuttgart.de

umwelt büro gmbh

eb&p Umweltbüro GmbH
Priv.-Doz. Mag. Dr. Gregory Egger
fon: +43-(0)463-516-614
www.umweltbuero.at

CASiMiR

Computer Aided Simulation Model for Instream Flow and Riparia

sje LWW

basics

CASiMiR is a set of simulation models running on Windows® for the ecological study of rivers under changing conditions.

Using CASiMiR, you can investigate the change in habitats for fish, invertebrates, aquatic plants, and flood plain vegetation.

How does CASiMiR work?

CASiMiR combines environmental parameters such as flow velocity, water depth, substrate, submergence time and changes in water surface with the habitat requirements of organisms.

Using a flexible multivariate framework Including both data and expert knowledge, CASiMiR provides tools for the investigation of aquatic environments under changing conditions.

What are the advantages of CASiMiR?

CASiMiR delivers quantitative, spatial results pertaining to the suitability and availability of habitats for selected indicator species and communities.

Such features allow for the formulation of „what-if" river management scenarios, their evaluation and consequent optimization.

applications

The CASiMiR modeling framework has greatly expanded the application of physical habitat models beyond the study of minimum flows in river ecosystems. CASiMiR has been successfully implemented in investigations on hydropeaking, ecologically-oriented flood management, sustainable planning of structural mitigation measures, the resettlement of floodplain vegetation, as well as the impact of sediment management in alpine rivers.

Case Studies

CASiMiR has been successfully applied internationally:

Hydraulics and Morphology Rhein, DE

Determination of the minimum flow regime re-establishing fish habitats and spawning grounds for the atlantic salmon considering sediment transport.

Development of flood plain vegetation Kootenay River, USA

Modeling the impacts of Dams on floodplain vegetation.

Hydropeaking Alpine Rhein, DE

Hydropeaking Alpine Rhein Investigating the impacts of daily hydropeaking due to energy production on trout spawning grounds, juvenile fish, and macroinvertebrates.

Reservoir Management Impacts on Fish Biobio, CL

Investigating the impacts of reservoir management on the temporal and spatial distribution of habitat on native fish species.
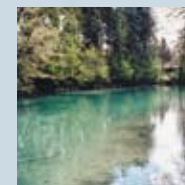
Grayling Spawning on the Aare, CH

Assessment of flood management impacts on grayling spawning grounds of national importance at the Aare's outlet to Lake Thun.