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Welcome & Introduction to BOKU

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Mission Statement

BOKU – University of Natural Resources and Life Sciences, Vienna

„It is BOKU´s core competence to research and impart knowledge of sustainably using natural resources and thus providing options to safeguard natural resources. Thereby the „University of Life“ offers answers to issues that affect the general public and that are highly relevant for each and everyone of us.“

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Facts & Figures

Staff	
Scientific staff	1.138
Non-scientific staff	629
Overall staff	1.767

Students	
… from Austria	8.494
… from the EU	1.925
… from third countries	533
Overall	10.952

Study programs	
Bachelor	8
Master	27
PhD	10
Overall	45

Organisation

- **University (BOKU)**
  - **15 Departments** (Department of Water, Atmosphere and Environment – WAU)
    - **67 Institutes** (Institute of Hydraulic Engineering and River Research)

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Study programs

- Programs with department responsibility

Bachelor Level	
Environmental Engineering (*Umweltingenieurwissenschaften*)	48%

Master Level	
Environmental Engineering (*Kulturtechnik und Wasserwirtschaft*)	44%
Water Management and Environmental Engineering (WMEE)	57%
Applied Limnology (MAL)	100%
Natural Resources Management and Ecological Engineering (NARMEE)	38%
Environmental Sciences – Soil, Water and Biodiversity (ENVEURO)	35%
Alpine Natural Dangers / Watershed Regulation	11%

Institute of Hydraulic Engineering and River Research

water use - water protection - protection from the water

- Hydraulic engineering: with an emphasis on sediment management, river morphology and river restoration
- River research: fundamental research including water and sediments (also plastics), interaction with the ecosystem
- Sustainable hydropower
- Integrated flood risk management
- Fundamental and applied hydraulic research, ecohydraulics
- Sustainable waterway infrastructure for inland navigation

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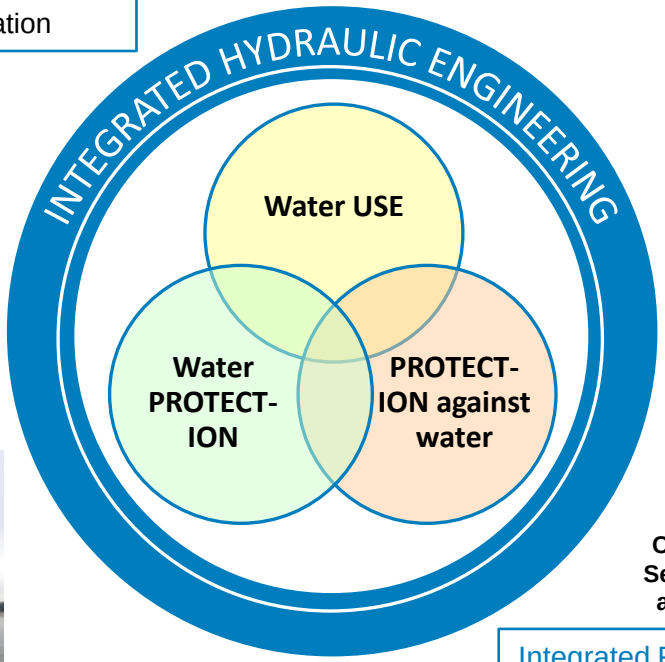
THEMES

Transport

Infrastructure in the area of inland navigation

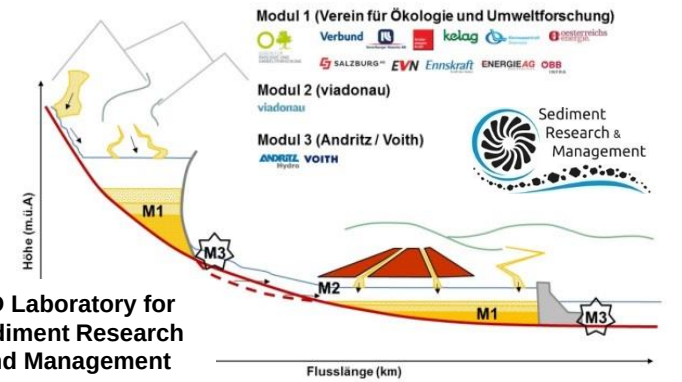
Renewable Energy

Especially sustainable hydropower



River engineering

With a focus on sediment regime and river morphology



CD Laboratory for Sediment Research and Management

River research

Basic research concerning transport of water and sediments (incl. plastics), for ecology and anthropogenic use of river management (measures)

Ecohydraulics

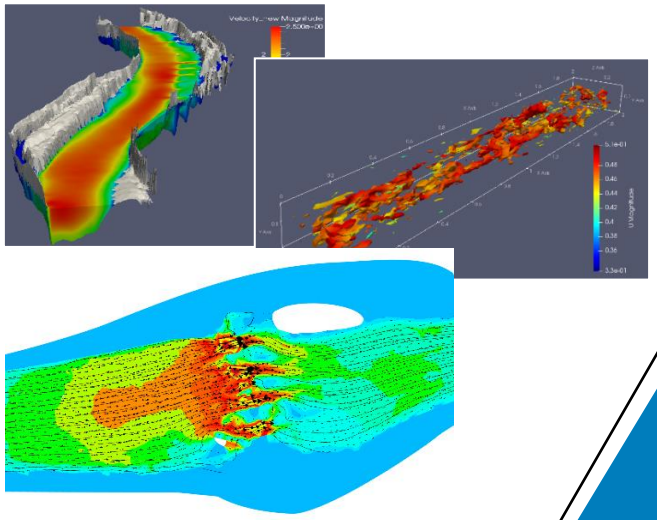
and ecosystem services

Integrated Floodrisk Management

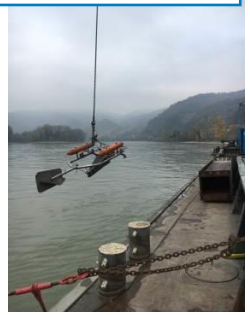
From awareness, floodplain management to dams and mobile flood protection

METHODS

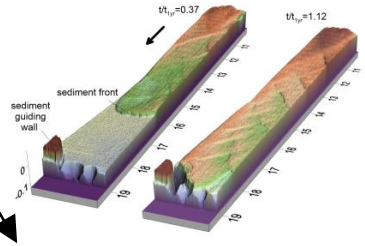
In situ measurements, monitoring

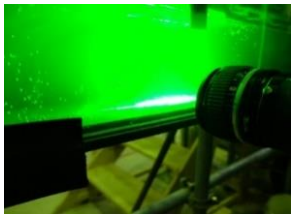


Field monitoring



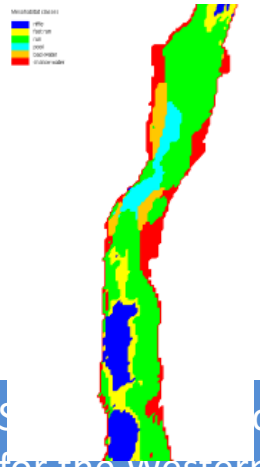
New Hydraulic Engineering Laboratory



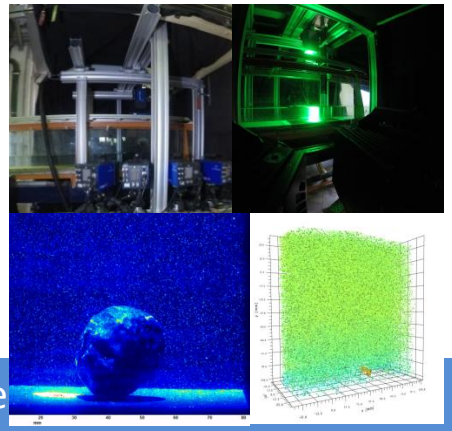


Numerical modelling of hydrodynamics, sediment transport, morphodynamics and habitat

Numerical modelling ⟷ ***Hybrid Modelling*** ⟷ **Physical modelling**



Theory



Empirical research

Physical modelling
From small to 1:1 scale; hybrid modelling, research channel, new BOKU Hydraulic Engineering Laboratory

Related projects

Floods documentation June 2013

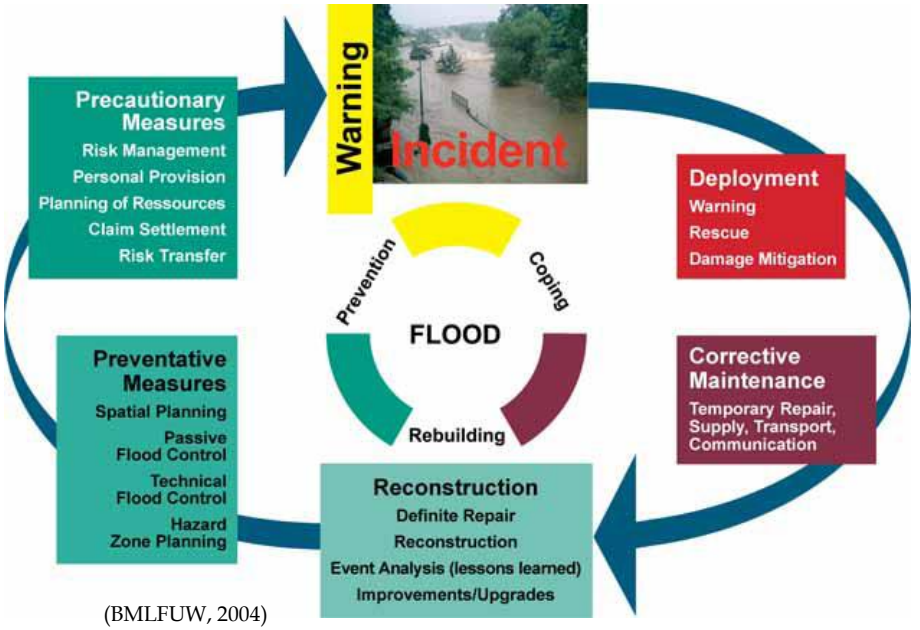
- Analysis of precipitation and discharge
- Documentation of inundated areas
- Analysis of sediment budget and morphology
- Effects of implemented protective measures

(BMLFUW, 2015)

Related projects

Flood risk I and II

- Analysis of natural hazard documentations
- Recommendations for future improvements („lessons learned“)
- Development of effective implementation strategies for integrated flood management



(BMLFUW, 2004)

Related projects

PlasticFreeDanube

- Investigation of macro plastic waste (>5mm) in and along the Danube river
- Development of a methodological approach on plastic waste in terms of
  - entrance points
  - quantities
  - transport patterns
  - environmental threats

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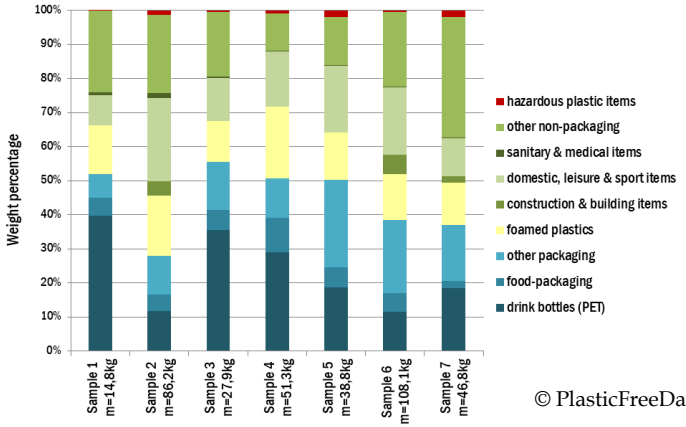

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Related projects

DREAM (Danube River Research And Management)

- Construction of a new hydraulic engineering laboratory
  - Free surface flow of 10m³/s
  - Dimensions 100m x 25m
- Flagship-project of the EU strategy for the Danube region
  - 4 ongoing projects (SEDECO, SEDDON II, DREAM SK-AT, Wasserbaulabor RRMC)
- Subject areas
  - Basic research
  - Flood risk management
  - Hydraulic engineering
  - Renewable energy
  - Waterways management
  - Eco-hydraulics

Role of BOKU within SWARM

- Lead of **WP1**
  "*Analysis of water resources management in the Western Balkan region*"
  - WB regional issues
  - EU water policies, innovation and legislation
  - Master curricula related to WRM in WB and EU
  - Workshop May 8-10, 2019, Vienna, Austria

- Contribution to the **development** of competence-based **curricula** and **trainings**
- Conduction of a **training workshop** for teaching staff (January/February 2022)
- **Summer school** for students (November 2021)

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Contact information

University of Natural Resources and Life Sciences Vienna (BOKU)
Department of Water, Atmosphere and Environment (WAU)
Institute of Hydraulic Engineering and River Research (IWA)

Find more about us in
http://www.wau.boku.ac.at/en/

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