

MesoHABSIM Course Schedule

Day 1: Introduction and Data Collection

9:00 - 9:15: **Welcome and logistics**

9:15 - 10:30: **Introduction to physical habitat models & MesoHABSIM**

Objective: Present the place of MesoHABSIM within the framework of habitat simulation models.

Topics:

- Physical habitat models
- MesoHABSIM approach
 - * survey techniques
 - * calculations
 - * results

10:30 – 11:00: **Break**

11:00 - 11:45: **Biophysical templates**

Objective: Introduction to ecological underpinnings and the concept of biophysical templates

Covered topics:

- Theory of Biophysical templates
- Biological targets and indicators
 - * Reference fauna
 - * Existing fish community
 - * Bioperiods
 - * Indicators

11:45 – 13:00: **Biological filters**

Objective: Demonstrate the process of creating biological filters

Covered topics:

- Literature based
- Empirical data
- Sampling
- Multivariate Suitability criteria

13:00 - 14:00: **Break for lunch**

14:00 – 15:00: **Instream Habitat Classification**

Objective: Present the concept and procedures of classification

Covered topics:

- Spatial Delineation of river sites
- Assessment of physical attributes
- Mapping surveys
- Applying filters
- Defining Suitable and Optimal habitat
- Validation procedures

15:00 - 19:00: **Visit to Field Site**

Objective: Demonstrate standard operating procedures of data collection for MesoHABSIM

Field data collection

- Equipment demonstration
- Grid Electrofishing
- Invertebrate and mussel sampling
- Map hydromorphologic units (HMU)
- Measure water depth and velocity

Day 2: Habitat simulation and application

9:00 - 10:30: **Lecture: Computation of suitability criteria**

Objective: Present the procedures for analysis of model training data

Covered topics:

- Logistic regression model
- Compute logistic regression with SPSS or R
- Upscaling
- Aggregation across the scales
- Aggregation from species to community habitat
 - * Biophysical Templates
 - * Habitat deficit analysis
 - * Rehabilitation Simulation

Spatial Aggregation

Temporal Aggregation

10:30 – 11:00 **Break**

11:00 - 13:00: **Lecture: Habitat Time Series**

Objective: Interpretation and Simulation

Covered topics:

- UCUT analysis
- Flow management criteria

13:00 - 14:00: **Break for lunch**

14:00 - 15:00: **Lecture: Interpretation and Management Tools**

Objective: Discuss Interpretation and Present Application

Covered topics:

- Identify habitat thresholds and management criteria

- ACTograms
- Scenario comparison
- Integrative assessment

15:15 pm - 17:00 pm: **Examples of MesoHABSIM application and SimStream08**

Covered topics:

- Examples of projects applying MesoHABSIM
- Other possibilities

Day 3: Project Preparation

9:00 - 10:15: **Project preparation**

Objective: Present the methods and procedures creating data foundation for MesoHABSIM analysis

Covered topics:

- Gathering background data and establishing geo-database
- Spatial delineation to Reaches, Sections and Representative Sites
- Obtaining templates for mapping and fishing
- Installing software

10:15 –11:15: **Starting your Project**

Objective: Setting up the framework for your project and practical application of the software

Covered topics:

- Begin project
- Setup basic attributes

11:15 - 11:30: **Break**

11:30 - 13:00: **Entering data into SIM-Stream07 software**

Covered topics:

- Database import (function will be explained further on Wednesday)
- Import data from Excel
- Manual input
- Associations
- Data validation

13:00 - 14:00: **Break for lunch**

14:15 - 15:30: **Starting your Project**

Objective: Data entry and calculations continued

Covered topics:

- Entering available fish data
 - Import coefficients
 - Input coefficients cut-offs
- Data QA&QC

15:30 – 15:45: **Break**

15:45 – 17:00: **Lab: Calculations continued**

Objective: SimStream calculations continued

Covered topics:

- Calculate Velocities
- Calculate Suitabilites
- Calculate Rating curves
- Reports

Day 4: Data Analysis

9:00 – 10:30 **GIS Lecture**

Objective: Tutorial on Geodatabase creation and Map production

Covered topics:

- Development of GeoDatabase
- Adding data to GeoDatabase and transfer to SimStream
- Create HMU maps
- Create Suitability Maps

10:30 – 11:00: **Break**

11:00 – 12:00 **SIM-Stream07**

Objective: Practical application of the software by students in analysis of training data

Covered topics:

- Adjusting templates
- Simulating Reference Conditions

12:00 – 13:00: **Lab Continued**

- Reference Rating curves
- Calculate Time series
- Calculate UCUTs
- Calculate Flows
- Flow management criteria

13:00 - 14:00: **Break for lunch**

Lab continued - Scenario Comparison

- Simulate river regulation
- Compare rating curves
- Compare UCUTs

- Calculate Stress Days

15:30 - 16:00: **Break**

16:00 – 17:00 **Discussion of Results and Interpretation**

Objective: Interactive Discussion

Covered topics:

- Discussion of Results

- New Developments