Training catalog

SimOiRO

TerrOïko / Ecological engineering innovation company

TerrOïko creates digital tools for ecological engineering, offering them either as study services or off-the-shelf solutions. As part of its innovation activities, TerrOïko organizes professional training sessions lasting 1 to 3 days, tailored for both beginners and advanced practitioners managing biodiversity issues in their activities (consulting firms, associations, companies, local authorities, and regulatory services).

Nos formateurs / Jérémie Cornuau, PhD in Ecology.

After earning his PhD in Ecology (CNRS - University of Toulouse), Jérémie joined TerrOïko as a project manager and training coordinator. His training sessions are largely inspired by case studies he conducted during missions with various stakeholders (municipal associations, natural parks, large corporations, etc.). He also teaches future ecological engineers at the universities of Toulouse and Montpellier.

Mélodie Kunegel-Lion, PhD in Ecology.

A research engineer who joined TerrOïko in 2023 after eight years in Canada for her PhD and postdoctoral work, Mélodie is skilled in mechanistic modeling in ecology. She contributes to training sessions, particularly for stakeholders involved in mitigation hierarchy.

SimOïko Training Catalog

TerrOïko has a partnership with a training organization to include its courses in your expenses eligible for OPCO funding.

For any training requests at your premises, please contact us.

TerrOïko SAS / 2 place Dom Devic 81540 Sorèze / Tél : 05 81 60 06 96 / Mail : contact@terroiko.fr
www.terroiko.fr / www.simoiko.fr

Conducting land-use mapping for ecological modeling

Objectives:

- Understand the cartographic requirements (organization and data format) inherent to ecological modeling
- Be familiar with geoprocessing and geometry tools
- Know how to carry out the steps to create a land-use map by compiling multiple data sources.

Public	Cartography technician and engineer or ecological engineer with GIS skills. Minimum of an undergraduate qualification in one of these fields.
Requirements	Practical knowledge of Geographic Information Systems (GIS): Ability to use at least one of the following software: QGIS, ArcGIS, MapInfo.
Program	✔ Presentation of cartographic modeling needs *Overview of cartographic data formats and organization. Presentation of the principles for using cartographic data in ecological models. Presentation of cartographic rules for ecological modeling.* ✔ Introduction to geoprocessing and geometry tools *Inventory of QGIS tools and modules useful for land use mapping, geometry verification, and data format conversion.* ✔ Methodological guide for data compilation *Presentation of the steps for data compilation (surface data, linear data, entity merging, etc.) to quickly produce the land use map.* ✔ Practical application of the tools and methodologies presented on several case studies. ✔ Discussion around these practical case studies
Duration	1 day (6 hours)
Pedagogical resources	Practical input from the study of feedback, cartographic exercises using QGIS, and the provision of a summary document to each participant.
Assessment methods	Evaluation of progress at the end of the day, assessment by the trainer on practical case studies.
Fee	To be determined based on the number of participants and the training format. *Issuance of the necessary certificates for coverage if needed or the tax credit for business owner training.*
Location	Sorèze (81), France *On-site training available on request*
Date	To be determined according to demand

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SimOïko - Initiation

Objectives :

- Understand the different modeling approaches in ecology and have a comprehensive view of the ecological concepts integrated into these tools.
- Grasp the general functionality of SimOïko, its possibilities, and its limitations in various application fields.
- Master the software, from configuration to the interpretation of results.
- Understand the technical and financial benefits for you and your clients.

Public

Study technician and engineer in one of the following fields: ecology, environment, geography, civil engineering, or urban planning. Minimum of an undergraduate qualification in one of these areas.

Requirements

Practical knowledge of Geographic Information Systems (GIS): Ability to use at least one of the following software: QGIS, ArcGIS, MapInfo.

Program

✔ Presentation of modeling categories, their divergence, and operational consequences.

✔ Technical presentation of the SimOïko simulator :
What are the input data and output data? How are the dynamics and behaviors of individuals modeled?

✔ Overview of simulation services
From species modeling to the functionality of an ecological network. Getting started with the software platform.

✔ What methodological approaches are needed to select the species to be simulated?
Approach by species or guild, indicator species, etc.

✔ How can I adapt land use to the needs of my study ?
Definition of the simulation area, adapting the resolution and precision of natural environments and digitization to the study's requirements, resolving intersection points between structures (e.g., streams under roads).

✔ How to interpret and format results ?
Presentation of the characteristics of different types of results. Cartographic implementation of results. Introduction to the interpretation of results.

Duration

2 days (12 hours)

Pedagogical resources

Theoretical and practical input from the study of case studies, role-playing, real-life scenarios, discussion time, cartographic exercises using QGIS, and the provision of a summary document to each participant.

Assessment methods

Evaluation of progress at the end of the training, with assessment by the trainer on practical case studies.

Fee

To be determined based on the number of participants and the training format.
Issuance of the necessary certificates for coverage if needed or the tax credit for business owner training.

Location

Sorèze (81), France
On-site training available on request

Date

To be determined according to demand

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SimOïko – Territorial planning module

Objectives :

As part of the "Green and Blue Infrastructure" studies:

- Master the software from configuration to result interpretation.
- Know how to conduct effective consultations using the software.
- Understand the technical and financial benefits for you and your clients.

Public	Study technician and engineer in one of the following fields: ecology, environment, geography, civil engineering, or urban planning. Minimum of an undergraduate qualification in one of these areas.
Requirements	Have participated in the "SimOïko – Initiation" training, practical knowledge of Geographic Information Systems: at least one of the following software tools: QGIS, ArcGIS, MapInfo.
Program	✔ Presentation of the subnetwork definition method for diagnosing the functionality of an ecological network *From the modeling of multiple species to the functionality of a green infrastructure network.* ✔ Where can you find the information for mapping and selecting species ? *Data sources to compile, methodology for selecting species for the ecological network diagnosis.* ✔ Interpreting the results of an ecological network *Interpretation of results in ecological terms. Translating results into your missions and cross-referencing with other territorial planning issues (regulatory, economic, etc.).* ✔ Successful consultation with SimOïko *The stages of consultation during the implementation of the simulation. Exploitation of results for collaborative territorial planning.*
Duration	1 day (6 hours)
Pedagogical resources	Theoretical and practical input from case study analysis, role-playing, real-life scenarios, discussion time, cartographic exercises using QGIS, and the provision of a summary document to each participant.
Assessment methods	Evaluation of progress at the end of the day, assessment by the trainer on practical case studies.
Fee	To be determined based on the number of participants and the training format. *Issuance of the necessary certificates for coverage if needed or the tax credit for business owner training.*
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SimOïko – Mitigation hierarchy module

Objectives :

As part of the regulatory studies' mitigation hierachy:

- Master the study of population viability within the mitigation hierarchy.
- Master the software from configuration to result interpretation.
- Understand the technical and financial benefits for you and your clients.

Public	Study technician and engineer in one of the following fields: ecology, environment, geography, civil engineering, or urban planning. Minimum of a an undergraduate qualification in one of these areas.
Requirements	Have participated in the "SimOïko – Initiation" training, practical knowledge of Geographic Information Systems: at least one of the following software tools: QGIS, ArcGIS, MapInfo.
Program	✔ The study of population viability in response to the expectations of the mitigation hierarchy ✔ *Presentation of ecological sensitivity analysis to determine avoidance areas.* ✔ Use of SimOïko to assess the impact of a project and measures *presentation of the different types of difference calculations. Selection of analyses to use during the mitigation hierarchy.* ✔ Where to find the information for mapping and selecting species? *Data sources to compile and methodology for species selection. Field recommendations to be carried out.* ✔ How to model reduction and compensation measures? *Taking into account the measures in a cartographic format.* ✔ Interpretation of results during the mitigation hierarchy *Interpretation of results in ecological terms. Comparison of scenarios. Translation of results into the environmental impact assessment and evaluation of the accuracy of simulations.*
Duration	1 day (6 hours)
Pedagogical resources	Theoretical and practical input from case study analysis, role-playing, real-life scenarios, discussion time, cartographic exercises using QGIS, and the provision of a summary document to each participant.
Assessment methods	Evaluation of progress at the end of the day, assessment by the trainer on practical case studies.
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SimOïko – Conservation management module

Objectives:

As part of managing a natural area:

- Master the software from configuration to result interpretation.
- Know how to conduct effective consultations using the software.
- Understand the technical and financial benefits for you and your clients.

Public	Study technician and engineer in one of the following fields: ecology, environment, geography, civil engineering, or urban planning. Minimum of an undergraduate qualification in one of these areas.
Requirements	Have participated in the "SimOïko – Initiation" training, practical knowledge of Geographic Information Systems: at least one of the following software tools: QGIS, ArcGIS, MapInfo.
Program	<u>Eco-design</u> ✔ Presentation of different analyses adapted to the design of programs for species or ecological sub-networks *Presentation of the different types of difference calculations. Selection of analyses to use depending on conservation objectives (heritage species, common nature, etc.).* ✔ How to model actions for biodiversity ? *Taking into account the actions in a cartographic format.* ✔ Interpretation of results *Interpretation of results in ecological terms. Comparison of scenarios.* <u>Evaluation</u> ✔ Interest of SimOïko for evaluating the effectiveness of action programs. ✔ Organizing its evaluation in relation to field monitoring. *Incorporating field monitoring into simulations. Defining common ecological indicators between simulations and field data.*
Duration	1 day (6 Hours)
Pedagogical resources	Theoretical and practical input from case study analysis, role-playing, real-life scenarios, discussion time, cartographic exercises using QGIS, and the provision of a summary document to each participant..
Assessment methods	Evaluation of progress at the end of the day, assessment by the trainer on practical case studies.
Fee	To be determined based on the number of participants and the training format. *Issuance of the necessary certificates for coverage if needed or the tax credit for business owner training.*
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