

Site characterization for sustainable land management

State of the art and innovations

Land is a vitally important resource. Sustainable land management requires well-founded and reliable information. Better information leads to better decisions and value for industry and stakeholders alike. The NICOLE Spring 2023 workshop in Paris will focus on showcasing ‘state of the art’ site characterization and sustainable land management tools and practices.

The organizing committee is looking for presentations (talks and/or poster) on research and development projects, new innovative approaches and case studies as well as learning lessons. The contributions should highlight:

I. New strategies for site characterization & monitoring. A better understanding of land quality impacts and risks allows better remediation option selection (financial, technical, HSE, time...). Consider:

- New techniques to understand contamination (geophysics, DNA analysis, phytoscreening, dendrochemistry...), contaminant fluxes or the vision / understanding of diffuse pollution;
- Assessing soil functions and soil quality (including biodiversity);
- Thinking holistically for large projects, multi-site rehabilitations or larger scale regenerations.

II. Innovative approaches for determination of soil health & biodiversity. Europe’s ecosystems are under increasing pressures; a clear understanding of their present-day status is essential. Sustainable land management and recovery of degraded lands are mandatory to reverse the trend. Restoring degraded soils and defining the conditions for their good ecological status are keys to restoring ecosystems. Topics of particular interest are techniques and approaches to the monitoring, tracking and conserving soil biodiversity that are the pillars of soil health (community composition, ecosystem structure, ecosystem function, ecosystem services...).

III. Conceptual Site Model (CSM) insights. A sound CSM can drive sustainable land management. Keys aspects include, spatial and temporal distribution of impacts (e.g., pollutants), relevant pathways to receptors and exposure scenarios. The current and future site uses must be described including the influence of any previous remedial measures. An understanding of soil properties and hydrology, and their interaction with the pollutants present, is essential. A well-developed and accurate CSM is the starting point for successful land management. Data gathered and the CSM developed for “a site” must also consider the broader environment and social demands (neighbors, worksites nearby, other sites to clean up, demands of a growing community...) to fully achieve sustainable land management.

IV. Internet of things (IoT) and digital tools. A decade ago, tools for fine-grained or high-frequency measurements were only available to large research organizations. Now these tools are widely available at reasonable cost. Digital tools allow dynamic and semi-continuous monitoring. Data can be remote and in real-time. We are seeking examples of how Internet of Things (IoT) and digital tools contribute to a better management of land, soil, and contamination, allow reduced response times, and more efficient and effective actions.

Call for abstracts criteria and expectations of the organizing committee:

I. What are the new ways of characterizing a site: characterization of biodiversity, biological, physical, and chemical soil quality?

What are new techniques of drilling, sampling, *in situ* measurements, monitoring and analysis for liquid, solid or gaseous contaminants?

How to choose relevant parameters (beyond concentrations) and techniques for acquisition?

Which methodologies are followed to characterize multi-sites or large project?

III. How the conceptual site model evolves and with which criteria?

How is the social part of the sustainable part taken into consideration into the CSM?

In anticipation to soil health protection, how to include soil as a receptor in the CSM?

II. What could be soil health risk assessment?

Is it required to have environmental monitoring more effective, using new techniques and with new interpretation systems?

Following a remediation process, what are the new methods of controlling effectiveness and the translation into a functioning site model?

How to integrate new approaches of soil functions management with more traditional approaches guided by the health assessment?

IV. What are the advanced technologies used for site characterizations?

What are the gains brought by these technologies (IoT and digital tools)? Data validity, time, money, communication, etc...

How the social impact of a contaminated site may be evaluated through IoT and digital tools?

Submission Guidelines:

Authors are required to submit a one-page abstract of what they would like to present, together with an outline of the structure of the presentation and a short biography.

The focus is on lectures, but posters are also possible. The selected abstracts will be published on the NICOLE website after the workshop. By submitting an abstract you agree to the publication with your name.

Abstracts which include case studies are encouraged, particularly those highlighting problems encountered, lessons learned and identified solutions, and should address some of the following questions:

- What is being done differently to traditional approaches?
- How does the approach enhance the sustainability of the project?
- How does the proposed paper bring innovation to site characterization?
- How has the case study embraced sustainability concepts such as the circular economy, the triple-P (economic, social and environmental) bottom line and development of natural capital?
- What is still needed in terms of knowledge development and transfer?

Deadlines:

Abstracts (maximum two pages or your alternative/pitch) should be sent by e-mail to [Chayenne van Dijk](#) before **Friday the 17th of March**. Afterwards the organizing committee will evaluate the abstracts. The authors of the abstracts will be notified if they have been selected by **Friday the 31st of March**.



The location of the workshop:

The workshop will be organized in the Pacific Tower, the Shell building in Paris.

The address is:

Tour Pacific La Défense 11/13
cours Valmy
92800 PUTEAUX
FRANCE

Organization committee members:

Corinne Merly – BRGM
Daniel Alexander – EarthSoft
David Cazaux – INEOS Inovyn
David Thomas – Jacobs
Elise Noël – Shell
Hans-Peter Koschitzky – Senior, VEGAS, University Stuttgart
Hubert Leprond - EDF
Jean-Louis Seveque – AquaTerraSana
Marjan Joris – iFlux
Simona Di Gregorio – University of Pisa
Pierre Jolly – WSP

 www.nicole.org

 <https://www.linkedin.com/company/network-for-industially-co-ordinated-sustainable-land-management-in-europe>