Challenges in the visualisation and interpretation of peatland monitoring data

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Integrated Geochemical Interpretation (IGI)

Introduction

Effective visualisation and interpretation of data from peatland restoration sites is essential for guiding conservation strategies, policymaking, and research.

Working with peatland data, however, presents several challenges. Specialist software can help overcome these by streamlining data integration, visualisation, and analysis, making data management and interpretation easier.

Challenges

Using peatland data presents several challenges, including:
• Highly multivariate data with complex structures
• Spatial and temporal variability across various scales
• Different measurement quality and associated uncertainty
• Integration of remote sensing, in-situ sensors, and volunteered information
• Variety of measurement methods used
• Lack of a common reporting standard

Data Import & Data Discovery
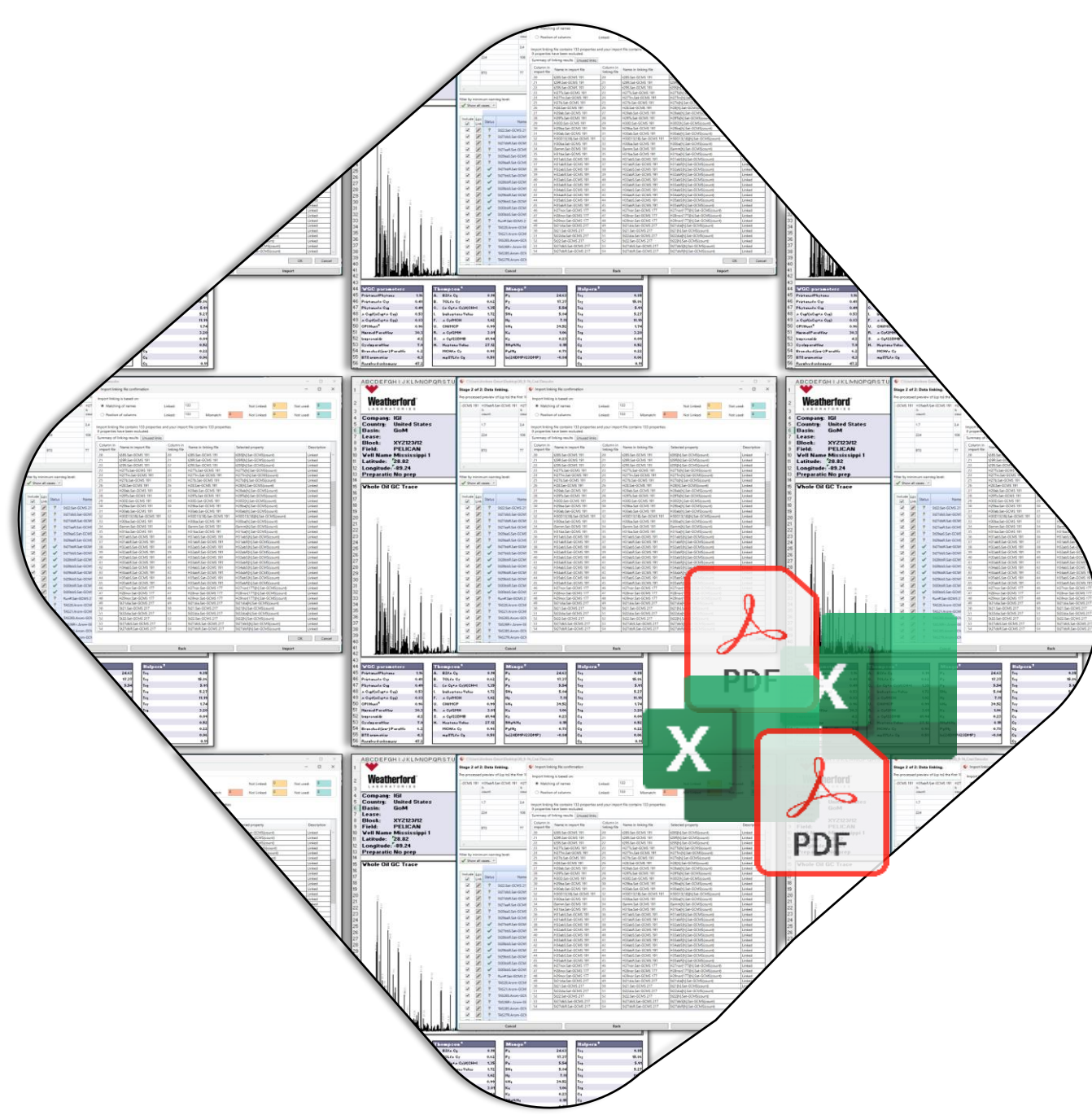
Data import tools designed to deal with multivariate data, with simple ingestion from multiple data file types, supporting a range of reporting standards.

Simple yet powerful data discovery tools within Metis allow users to view and explore data from diverse sources, helping store and retrieve data from various spatial and temporal scales.
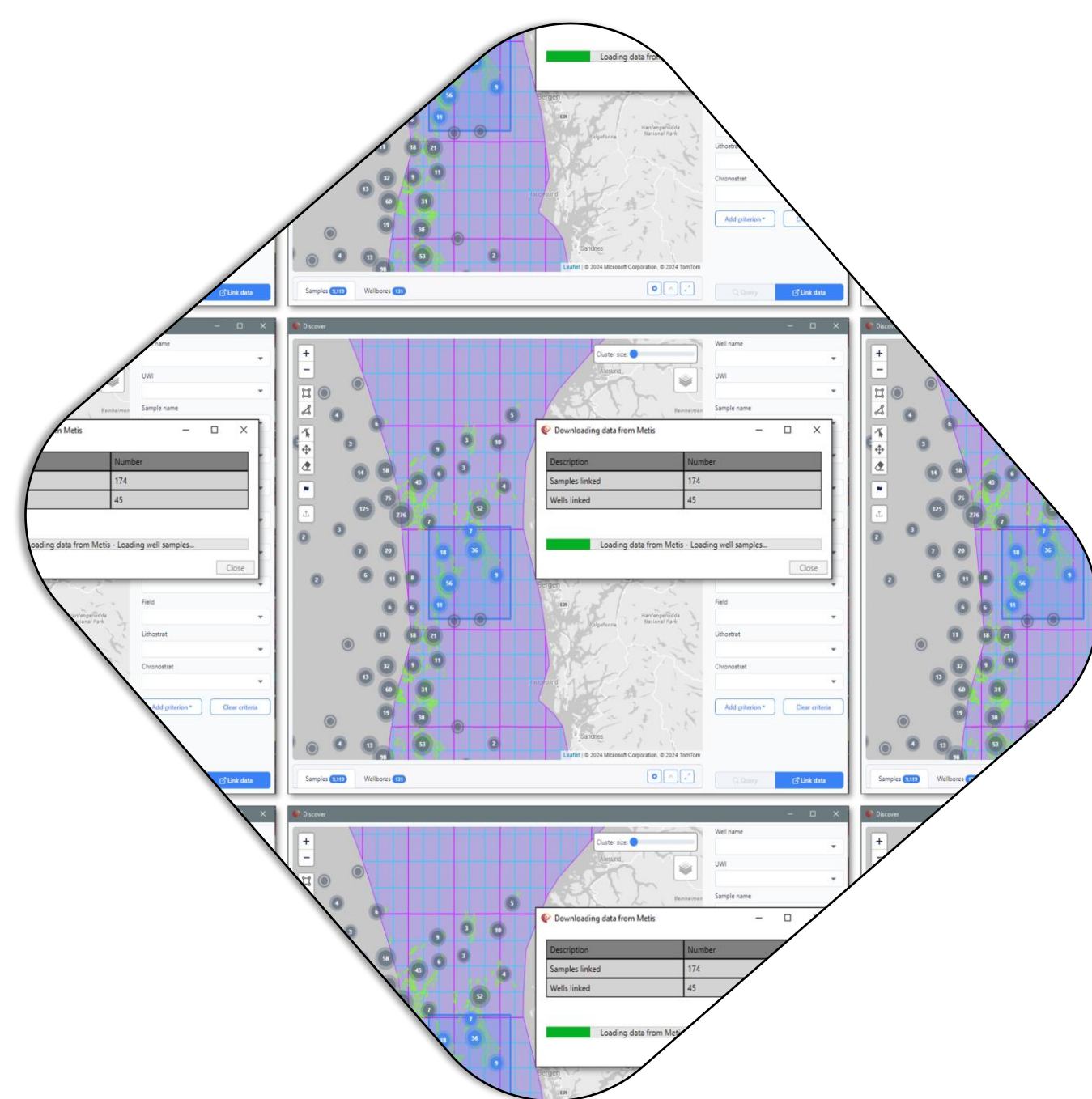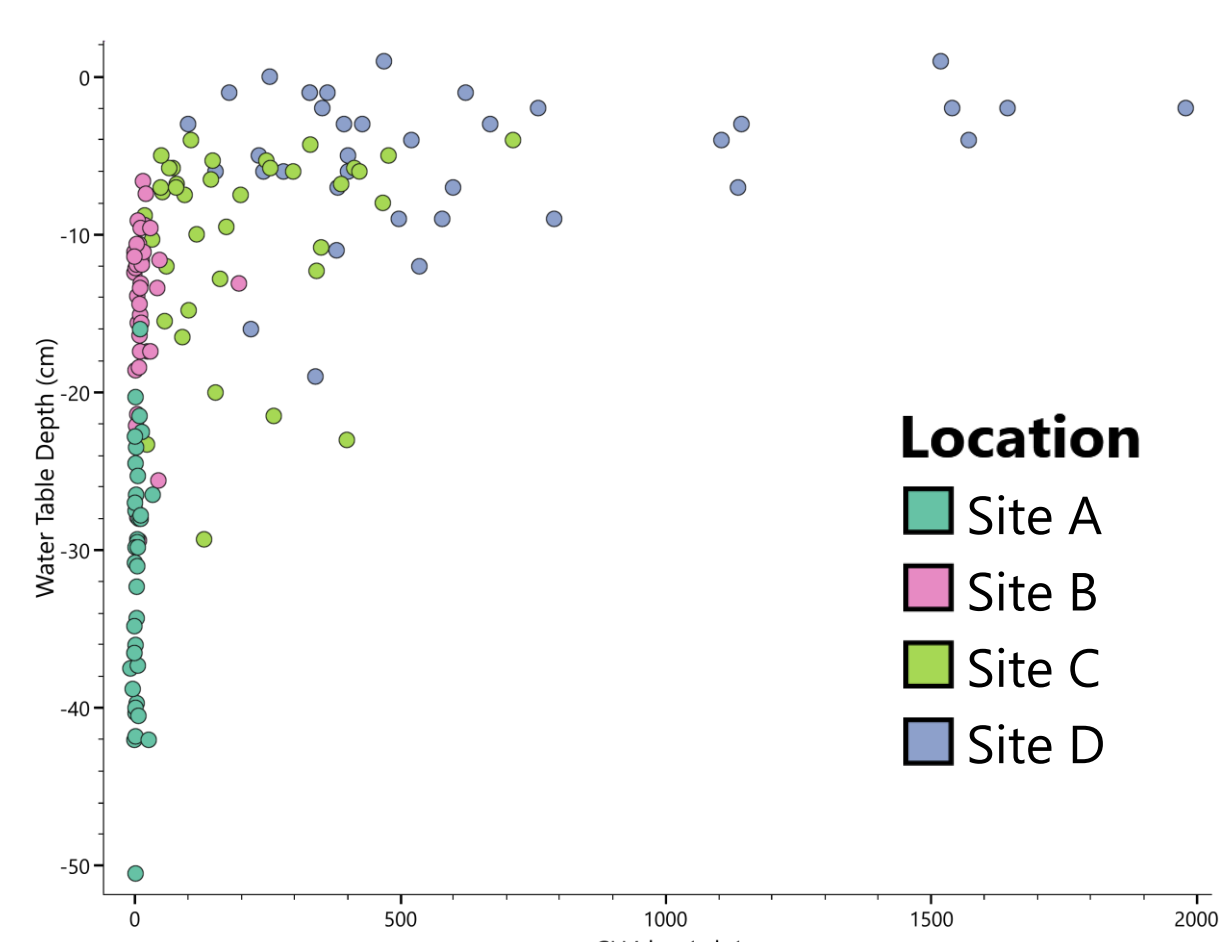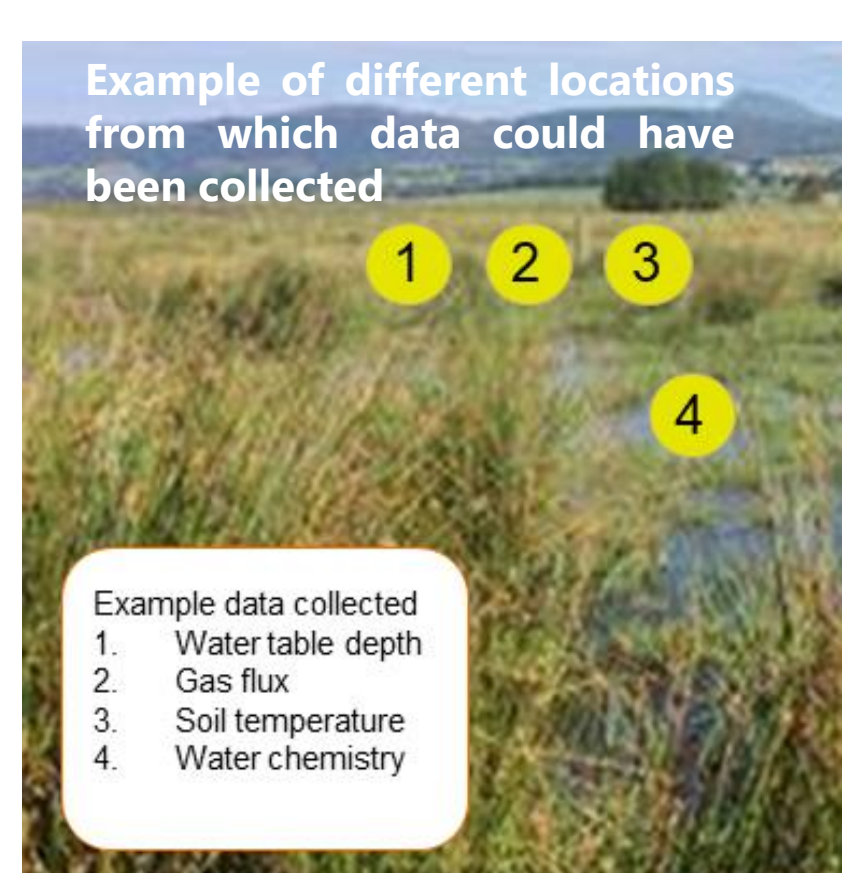
Collocation

Collocation tools simplify the integration of various sample types and techniques at different scales.
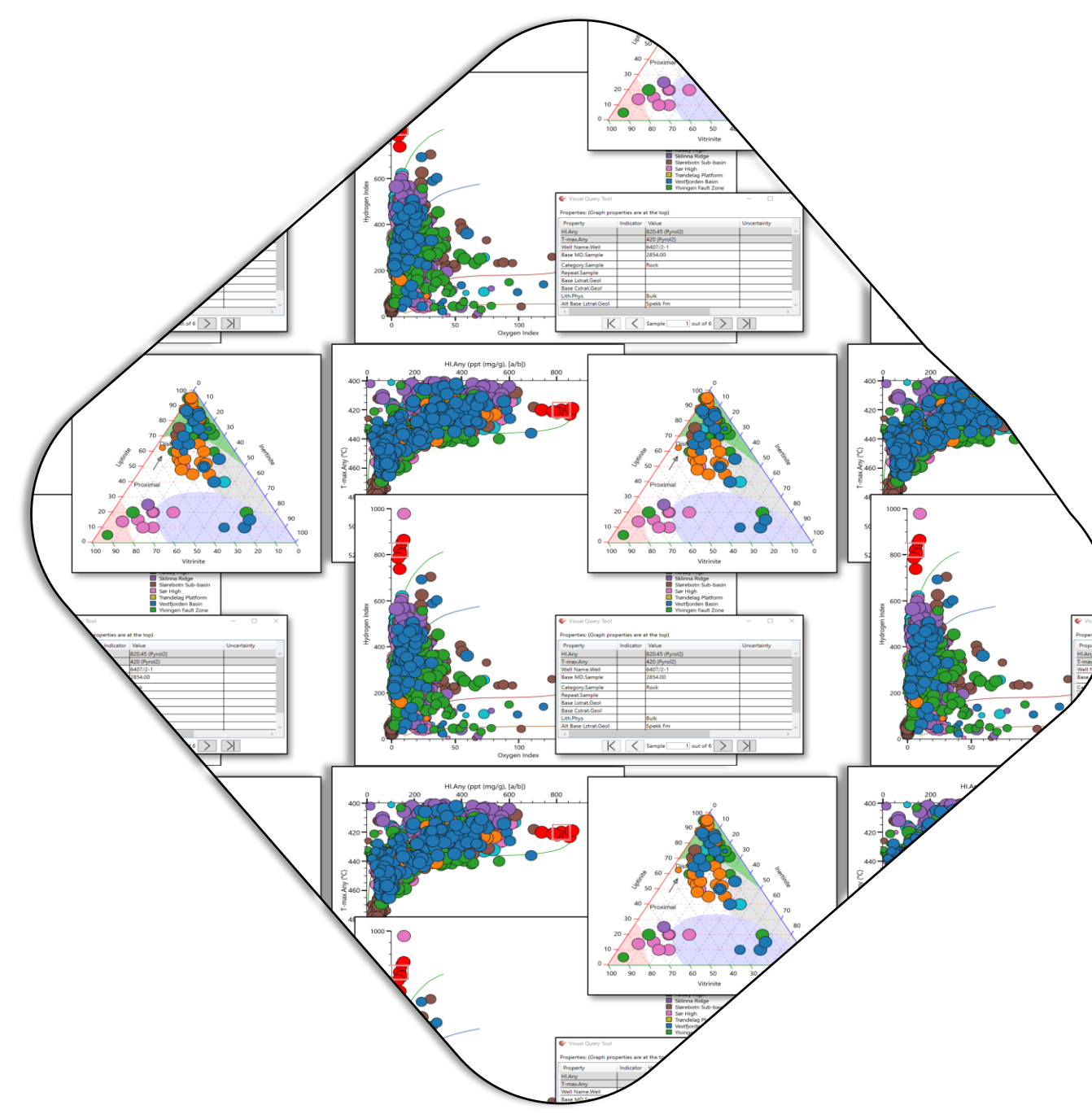

Remote sensing data   Ground-truthing   Proven, accountable results

Example of different locations from which data could have been collected

Example data collected
1. Water table depth
2. Gas flux
3. Soil temperature
4. Water chemistry

Collocation of samples allows data from different sample types to be cross-plotted.

Visualisation and Interpretation

p:IGI+ tools including graphs, maps, and machine learning tools allow the visualisation and interpretation of data from different measurement methods and of differing qualities, in one place. p:IGI+ includes the tools needed to identify these differences and use these data effectively.
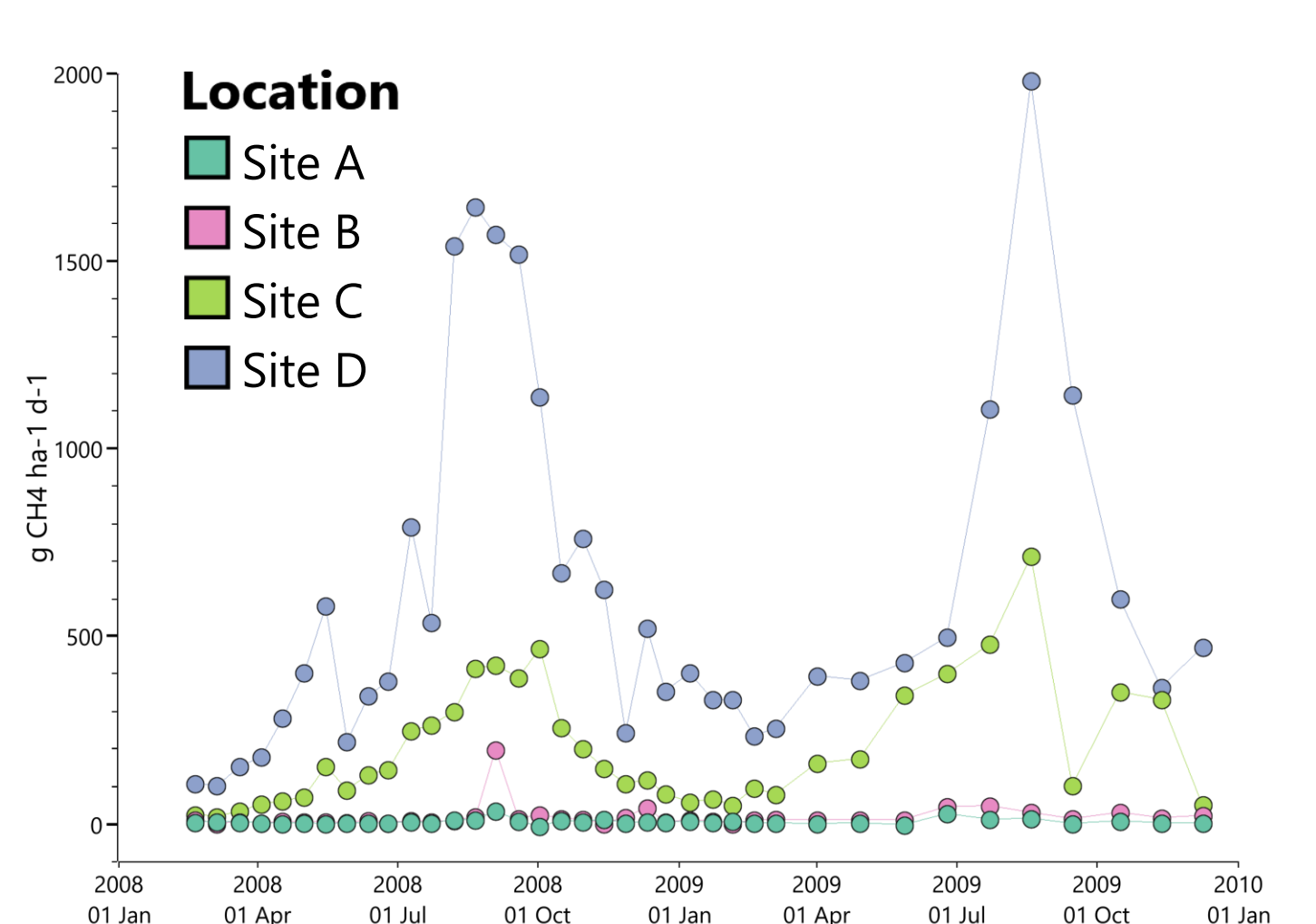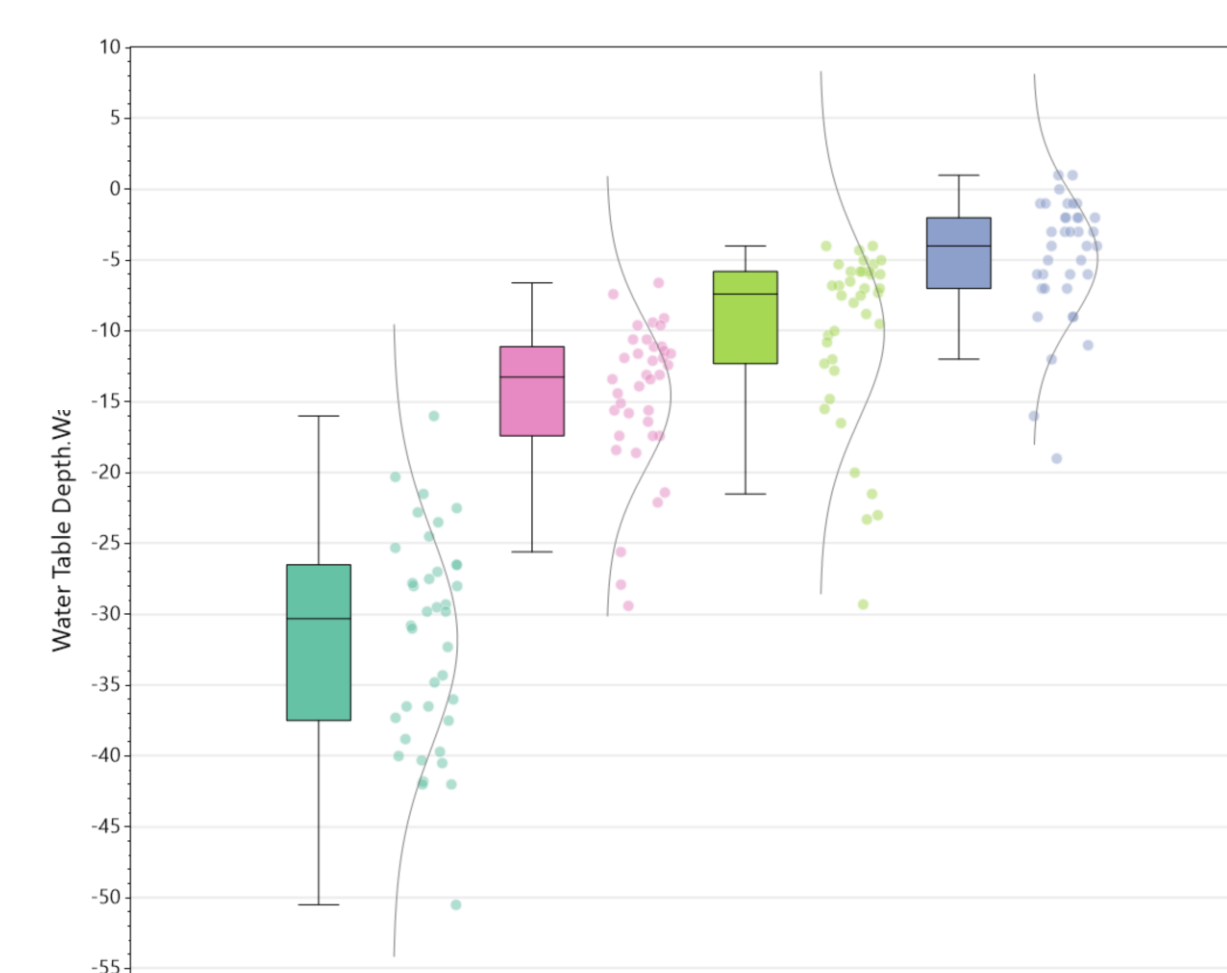

Examples of visualisation and interpretation tools: box and whisker plots, time series graphs, autographs with underlays from publications, and machine learning tools
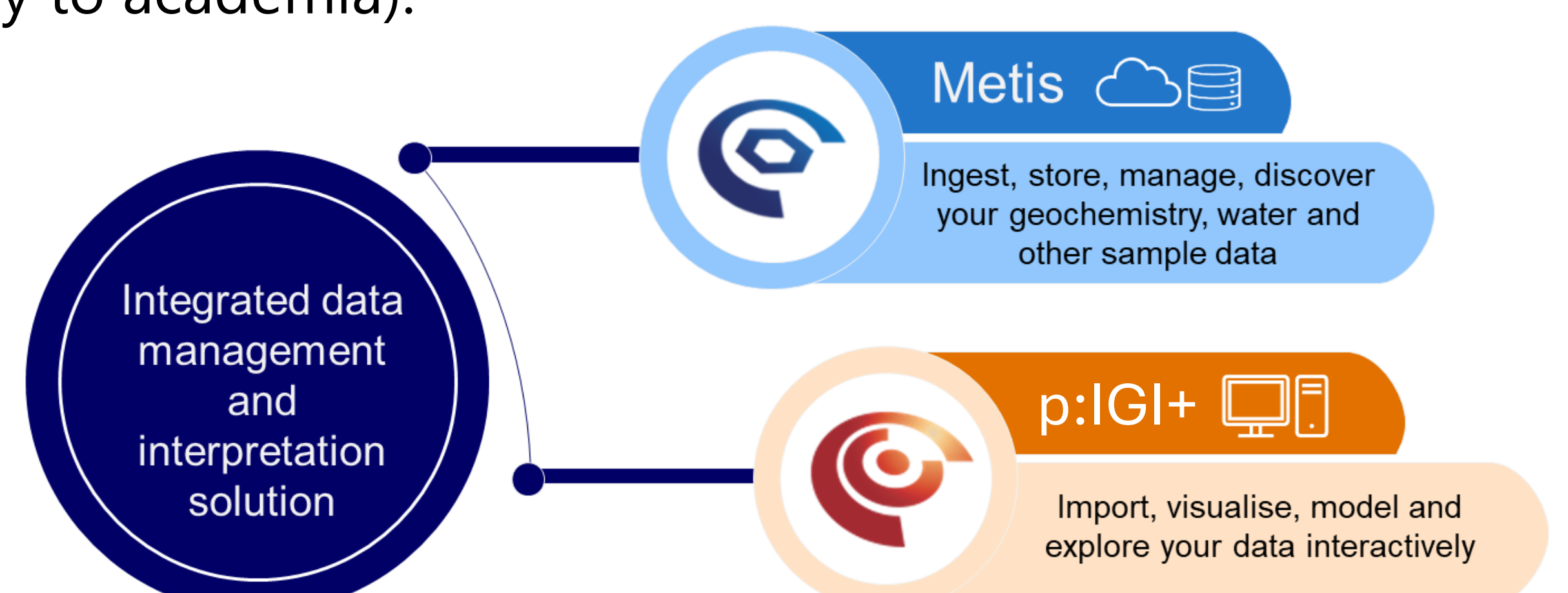

After Alcala & Custodio 2008
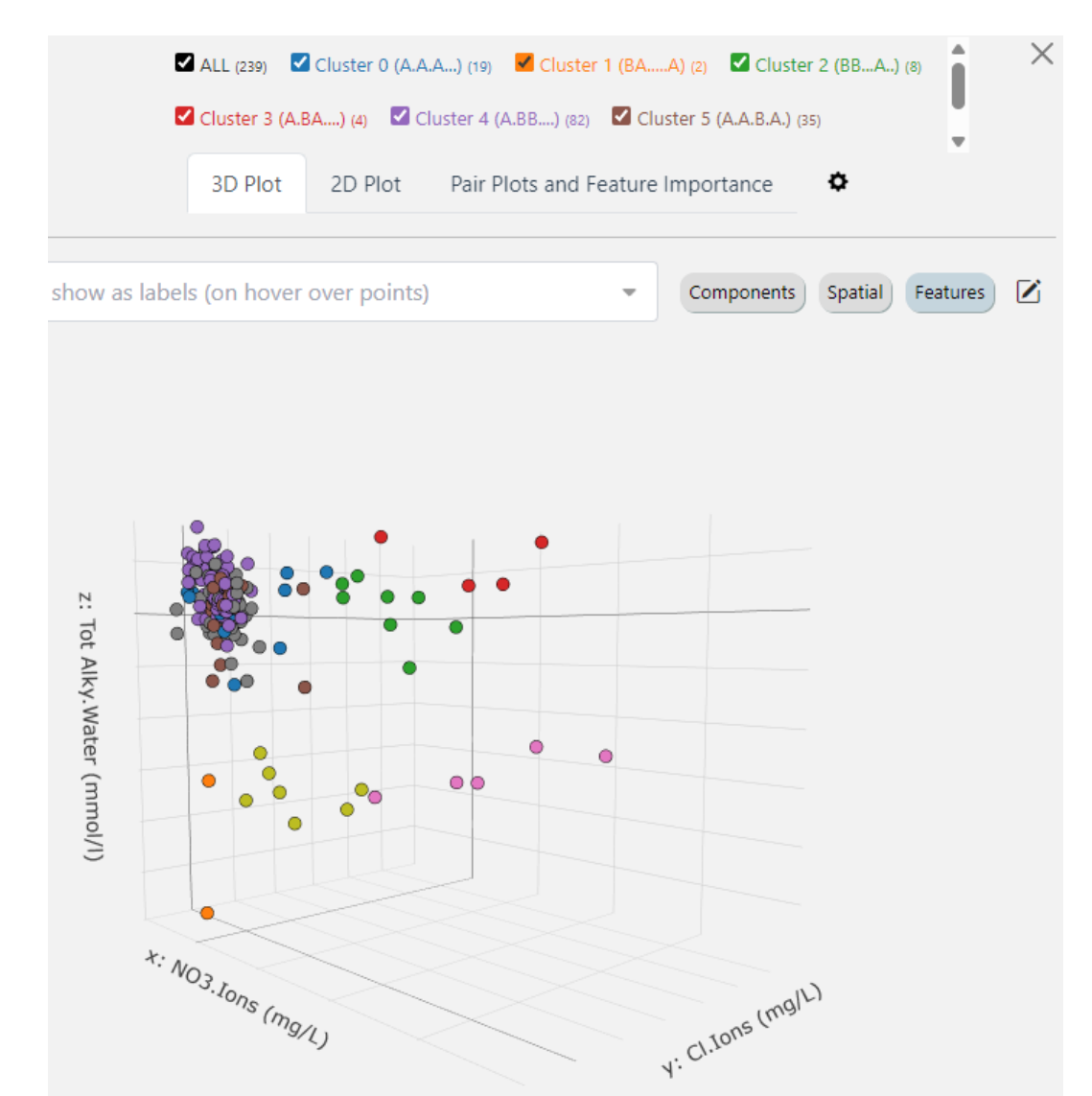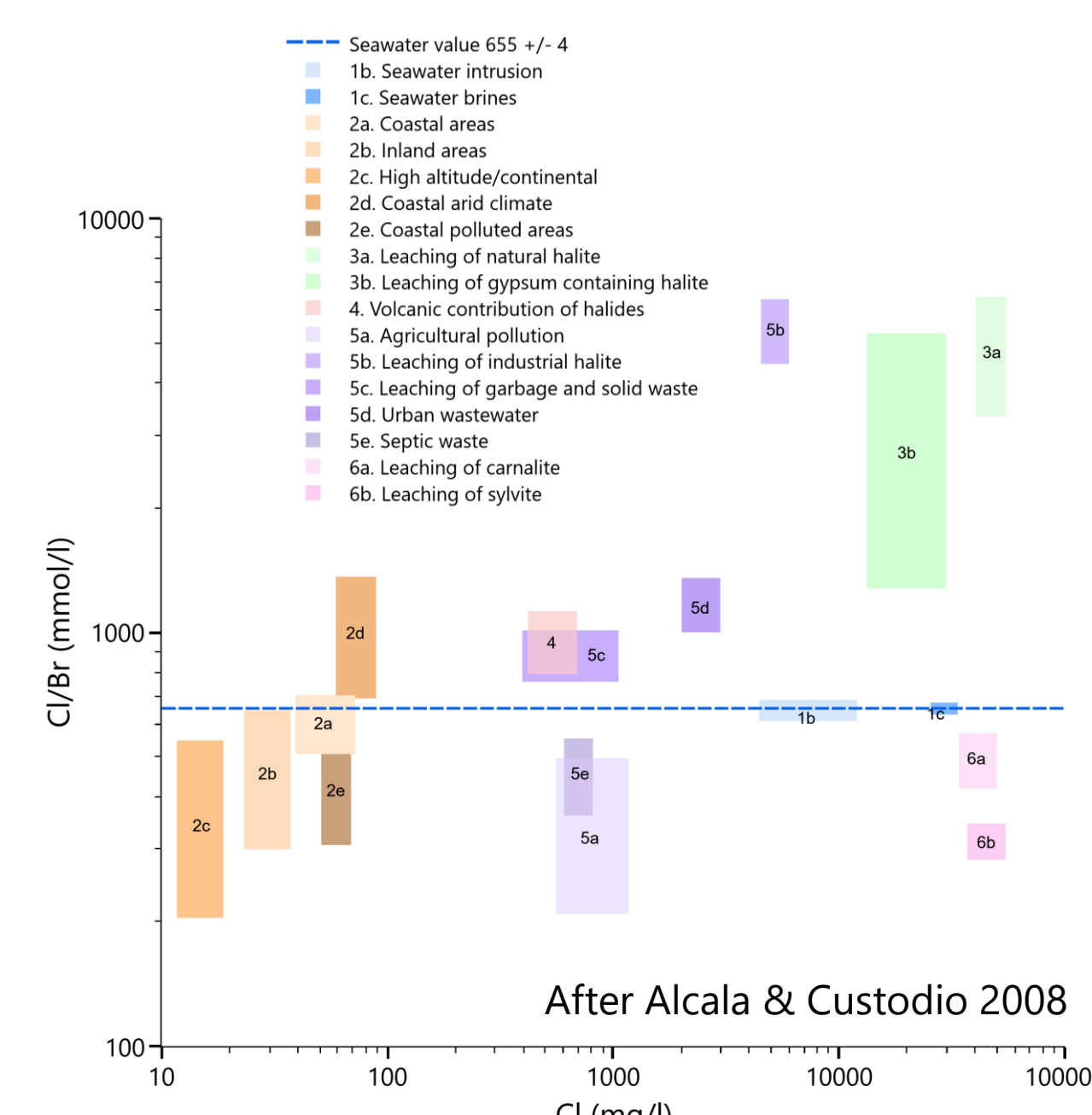
Reporting

Simple and clear reporting can be achieved through IGI's tools. This is important for stakeholder engagement, including communicating progress and the importance of peatland restoration to local communities, policy makers and funding bodies.
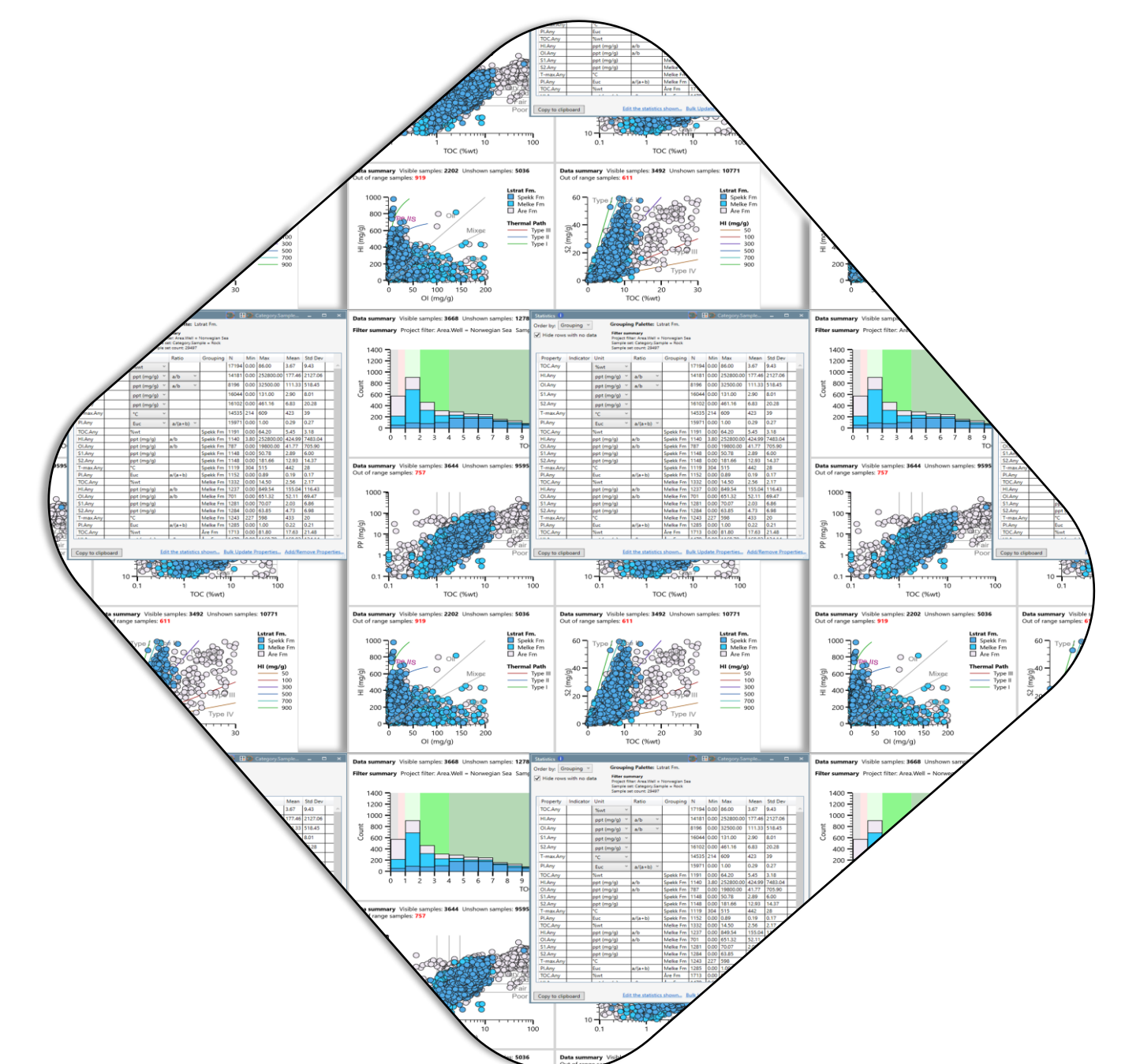
IGI's Tools

IGI's tools include a data management and data discovery tool (Metis) and an interpretation tool (p:IGI+ - which is provided freely to academia).

Integrated data management and interpretation solution

Metis
Ingest, store, manage, discover your geochemistry, water and other sample data

p:IGI+
Import, visualise, model and explore your data interactively

IGI are always looking to improve our tools. If you are interested in collaborating or if you would like a free academic licence for p:IGI+ software, please contact support@igiltd.com.