

Acting locally, impacting globally: New blueprints chart the course for DNA Barcoding in Europe and beyond

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DNA barcoding has become a cornerstone for species identification and biodiversity monitoring, enabling applications from ecological research to conservation and environmental policy. Since its inception, the DNA barcoding community worldwide has been convening under the aegis of the International Barcode of Life (iBOL), which provides global coordination. Since the 2010s, iBOL national nodes have been established to implement barcoding at scale, build local capacity, and translate scientific advances into practice. iBOL Europe, the European node, was established in 2022 with similar intentions at the regional level.

On this International Day for Biological Diversity, themed “Acting locally for global impact,” we are releasing two papers that aim to facilitate the development of a robust network of DNA barcoding practitioners, delineating regional/national approaches that are adaptable and replicable globally: “Empowering national capacity for a DNA-based approach to species identification and biodiversity monitoring,” by Kaitetzidou, E. et al., with Grabowski, M. as the senior and corresponding author, published in *Metabarcoding & Metagenomics*, providing advice on the set up and implementation of International Barcode of Life (iBOL) national nodes; and “Species identification, discovery and biomonitoring: strategic priorities for DNA barcoding in Europe, set in a global context,” by Hollingsworth, P. et al., published in *BioScience*, proposing a mission and related strategic priorities for the iBOL Europe community.

Focusing on the national level, Kaitetzidou et al. synthesise experiences from 20 countries, highlighting strategies for capacity building, methodological standardisation, stakeholder engagement, funding diversification and communication, ultimately providing 10 recommendations to guide the establishment and long-term success of national DNA barcoding nodes.

Complementing this from the trans-European perspective, Hollingsworth et al. propose a broad mission for iBOL Europe to produce, curate and provide access to a DNA barcode reference library of eukaryotic species, with the immediate goals of compiling reference libraries for priority taxa, democratising access to sequencing technologies, and strengthening a distributed community of practice.

The papers underscore that building a comprehensive reference library of European biota is a race against time, particularly in high-diversity regions like Southern and South-Eastern Europe, which are centres of biodiversity endemism of global importance, threatened by urbanisation and climate change, yet still lacking deep DNA barcode coverage.

Taken together, these two articles represent a stepping stone not only for the DNA barcoding community in Europe but also for strengthening the local, regional and global infrastructures as well as involving professional taxonomists and citizen scientists to deliver robust DNA-based biodiversity monitoring, underpin metabarcoding and metagenomic studies, and contribute to global efforts in species discovery, conservation, and environmental management.

While both papers are the result of community authorship and ongoing consultations over the years, their propositions are not intended to be fixed: they are open to our community for feedback and adjustments. The paper will be presented and discussed at the iBOL Europe community meeting on 27 July.

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Contact information

“Empowering national capacity for a DNA-based approach to species identification and biodiversity monitoring”: <https://doi.org/10.3897/mbmg.10.183268>

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“Species identification, discovery and biomonitoring: strategic priorities for DNA barcoding in Europe, set in a global context”: <https://doi.org/10.1093/biosci/biag052>

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