

Taxonomy for Biodiversity Conservation: Missions and Omissions to reach the 2010 Target

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The reduction of biodiversity loss by 2010 is among the most ambitious targets of the Johannesburg 2002 summit. The European Union is most ambitious by aiming at a total halt of biodiversity loss (<http://www.countdown2010.net/>). However, our knowledge on biodiversity is far from complete, due to the “taxonomic impediment”, and advances in the description of species are probably exceeded by undocumented species extinctions, particularly in megadiverse tropical regions. But even for European habitats, knowledge of conservation status is mostly restricted to popular groups such as birds and flowering plants, while many other groups remain poorly studied. To improve the necessary baseline biodiversity assessment, the “European Distributed Institute of Taxonomy” (EDIT, <http://www.e-taxonomy.eu>) organises “All Taxa Biodiversity Inventories” (ATBIs) with surveys in protected areas. ATBIs aim to list as many taxa as possible. Examples of ATBI projects in the USA (Smoky Mountains) and Sweden proved to be highly valuable in revealing hitherto unregistered flora and fauna, and even species previously unknown to science. At present, 27 mainly EU-based, scientific institutions participate in EDIT’s ATBI initiatives and thus exemplify successful collaboration at the European scale. First activities include large-scale fieldwork planned in Mercantour (France/Italy, see figure) and Borjomi (Georgia) National Parks. We developed prototype databases and workflows for ATBIs, resulting in species lists based on geo-referenced voucher specimen examined by taxonomists (see figure). Species lists from existing inventories (e.g. Fauna Europaea) serve as a taxonomic backbone, but proved to be insufficient particularly for less well-known taxa. Specimens are labelled with a newly developed system of Unique Identifiers that allows efficient linking with gene-sequence and/or multimedia data. Validated datasets are published timely in digital format through the “Global Biodiversity Information Facility” (GBIF, <http://www.gbif.org>), using their user-friendly search and mapping interface. Web-based tools for species descriptions and identification (“cybertaxonomy”) are developed by other EDIT partners to further accelerate biodiversity assessments. The international organisation of taxonomists within fast-acting task forces is crucial for reliable biodiversity assessments and will form the basis for detecting biodiversity dynamics and losses. It is EDIT’s mission to facilitate scientific collaboration, develop cross-European taxonomic procedures, standardised protocols and new methods to accelerate advances and implementations.

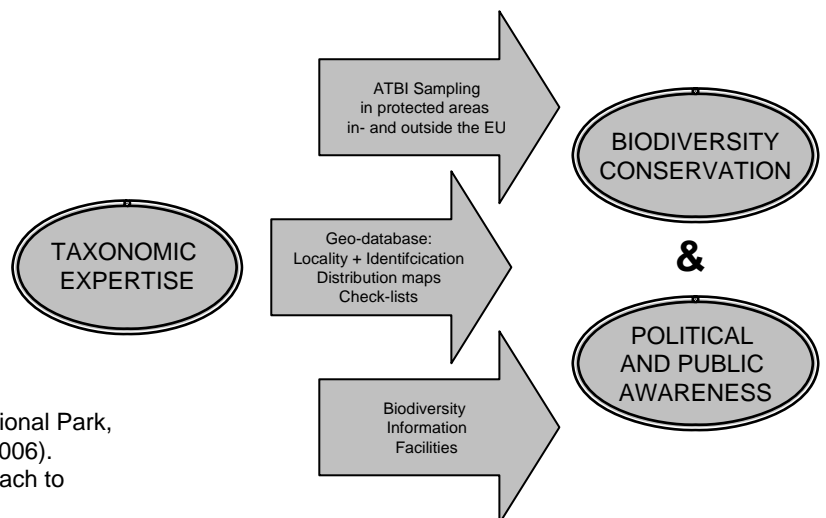


Figure - Left: The French-Italian Mercantour National Park, one of EDIT’s research area’s (Photo: K.Riede 2006). Right: Schematic representation of EDIT’s approach to organize taxonomists in fast-acting taskforces.