

World Biodiversity and European Taxonomy Strategies in Taxonomy: Research in a Changing World

Biostrat questionnaire 2009- the Netherlands.

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- 1.1 Biodiversity assessments and policy making is partly based on the data from (private) observation societies. The taxonomic tools include the expertise of individual observers and on-line support from a few of these societies. The community of professional taxonomists (NCB + CBS, currently distributed in Amsterdam, Leiden, Utrecht & Wageningen) plays a very active role to provide scientific underpinning for these societies
- 1.2 The official checklist <http://www.nederlandsesoorten.nl/nlsr/nlsr/english.html>, and the supporting lists of
 - Fauna Europaea <http://www.faunaeur.org>, and
 - the ETI support list <http://www.soortenbank.nl/>All lists were last updated in 2008. The national assessment of missing information is with the Netherlands Centre of Biodiversity (isn).
- 1.3 There is no single national monitoring or survey to establish the distribution, status and trends of taxonomic groups. Such tasks are mainly with the Netherlands Centre of Biodiversity and various private observation societies, the latter organized at a national level within the VOFF (Organisation for Faunal and Floral Research). A flagship project is for instance Wil Tamis' in depth analysis of "Changes in the flora of the Netherlands in the 20th century" (2005) which for the first time demonstrated climate change as a very significant factor affecting floristic composition in the Netherlands.
- 1.4 Barcoding in the Netherlands is coordinated in the framework of NBOL (Barcoding of Life Netherlands), <http://www.dnabarcoding.nl/>. Increasingly DNA barcoding is being applied in identification and assessment. For example with respect to plant parasitic nematodes: <http://www.nem.wur.nl/UK/education/MSc+Thesis+Subjects/Plant+parasitic+nematodes/>. The NCB, together with the CBS, aim at housing the European node (EBOL) within these institutes for which initial funding has been allocated.
- 1.5 Virtually all taxonomic research in the Netherlands integrates morphological with molecular approaches. Two examples are:
 - Plant molecular systematics, phylogeny and biogeography: <http://www.nationaalherbarium.nl/taskforcemolecular/>
 - Evolutionary phytopathology: <http://www.cbs.knaw.nl/Research/Phytopathology.aspx>
- 2.1 The Research Institutes Alterra, IBED, NIOO carry out (supportive) taxonomic elements in their research projects on ecosystem functioning and ecosystem

services. If there is a big need to have this mapped too, this is achievable within some weeks.

- 2.2. Taxonomy forms an integrated part of the FES Project on research Infrastructure for Plant Health, coordinated by the Plant Health Service (Ministry of LNV). Within that project various consortia such as the Dutch Invasive Plant Species Consortium and the Invasive Insects Consortium are active. There are also numerous projects on invasive terrestrial and marine animal species involving taxonomists.
 - 2.3. There are a lot of permanent research activities for this, programmed and implemented in close cooperation with the organizations of bee-keepers. Wageningen University has a special group for this research: see: <http://www.bijen.wur.nl/>
 - 2.4. There are various non-professional organizations recording biodiversity data. These are organized in an umbrella foundation, see (in Dutch): <http://www.voff.nl/>. The authority involved in data application for decision processes is the Dutch authority for nature information: <http://www.gegevensautoriteitnatuur.nl/>.
 - 2.5. Taxonomists are involved in monitoring of habitat directive and red-list species in and outside nature reserves in the framework of national and European legislation that makes reporting on these species compulsory.
 - 2.6. There are various taxonomic projects in non-European biodiversity-rich countries supported from the Netherlands. These involve tropical terrestrial regions on all continents as well as marine environments. A few examples are:
 - Flora Malesiana: <http://www.nationaalherbarium.nl/rhb/malesia.htm>
 - PROTA: Plant resources of tropical Africa: <http://www.prota.org/uk/About+Prota/>
 - Contribution to UNESCO support programme by ETI biodiversity centre: <http://www.eti.uva.nl/products/catalogue.php>
 - 2.7. There is *no* GTI national needs assessment in the Netherlands. At this moment NL authorities are studying the need and possibilities for a national need assessment.
- 3.1. Dutch taxonomic research contributing to international initiatives
 - Netherlands GBIF node: <http://www.nlbif.nl/>
 - PESI: coordinated by the University of Amsterdam
 - EOL: EOL-Netherlands = the first national EOL branch
 - Flora Malesiana: Coordinated by the National Herbarium of the Netherlands
 - Fauna Malesiana: Coordinated by the national natural history museum Naturalis
 - Flora of the Guianas: http://www.bio.uu.nl/~herba/Guyana/Flora_of_the_Guianas/
 - Flore du Gabon: Coordinated by the National Herbarium of the Netherlands
 - Fauna Europaea: coordinated by the University of Amsterdam
 - LifeWatch: coordinated by the University of Amsterdam
 - NCB-partners in the taxonomic network of excellence EDIT
 - NCB-partners and CBS participating in the EU-SYNTHESYS initiative.

- 3.2 Organizations in the Netherlands have initiated and established various biodiversity informatics activities, i.e.:
ETI biodiversity centre
European Network for Biodiversity Information
LifeWatch.

All taxonomic institutes have staff in biodiversity informatics and hold substantial amounts of digitized specimen data, the majority available through GBIF.

- 3.3 No – but Dutch partners in EDIT and SYNTHESYS are actively involved in developing international best practices.
- 3.4 No.
- 3.5 GBIF (incl. PESI) and TDWG standards
- 3.6 Large scale digitization efforts continuously. Major funding from the national research council in 2005-2006.
- 3.7 Easy access of identification expertise is promoted by the ETI biodiversity centre:
<http://www.eti.uva.nl/> and also developed by specialists of the NCB (e.g Plant Families of Malesia; [www.InsideWood](http://www.insidewood.org/) interactive wood identification online, etc.). See also websites and organizations mentioned above as VOFF, PGO's.
- 3.8 The Netherlands Centre of Biodiversity (NCB) aspires to provide taxonomic training at BSc, MSc and PhD level for the universities of Amsterdam, Leiden and Wageningen.
- 3.9 No.