

To whom it may concern,

Letter of reference for Mr Stephan Hennekens MSc.

Over the last 25 years I have been in the lucky position to be able to follow the remarkable career of Stephan Hennekens MSc from being a biology master student with a strong interest in vegetation science into an authority on vegetation data handling. This is encapsulated in the TURBOVEG program for handling vegetation data that has become the leading standard in almost all European countries. Indeed it is also frequently used outside Europe where it demonstrates how useful a program it really is.

Of course a computer program is just an instrument but as with all highly standardised and widely used programming, its real value is in the breakthrough such a programme achieves in the interaction it enables between users worldwide. Such an interaction can take many highly appreciable forms of which I would like to highlight two applications that made an impact in my own career as a scientist as well as in my capacity as the independent national authority on nature data, an advisory task directly to the minister of Agriculture, Nature Quality and Food Safety in The Netherlands.

To start with the last aspect:

In 2007 the Dutch government decided that there should be a national authority on nature data. The underlying reason is the increasing number of legal conflicts over land use following more stringent European legislation on the protection of habitats and biodiversity (NATURA 2000). This increased the demand on data on the distribution of habitats and species and on an independent quality control on the information. To make data available to the larger public in a user friendly way is a major task for which I am responsible being appointed as the first national authority. Without TURBOVEG and the large amount of data it stores (over 500.000 descriptions of vegetations in the Netherlands alone) and the various retrieval options it offers, any national data system on habitats and species would be impossible. Plants and the vegetation types they belong to, are excellent descriptors of habitat and the condition it is in. These descriptions are spatially explicit and therefore offer various options to link this information to other geographical information systems such as Google Earth and various other national mappings of groundwater, soil characteristics, land uses etc. All this can be achieved using TURBOVEG. Therefore, without the achievements of Stephan Hennekens and his system of input, storage and retrieval of vegetation data including a unified European taxonomic system of plant names including all synonyms and local names from various national and international flora's, the task of the national authority on nature data would have been almost impossible.

Scientifically TURBOVEG has been a core instrument in at least four national and EU research programmes: the national Dutch research programme on biodiversity now in its tenth year, funded by the Dutch Science Foundation (NWO), the EU fifth framework program LEDA, the European Science Foundation program ASSEMBLE and the submitted sixth framework program BIODIVERSA. The fast and flexible query facilities of large stored data sets provided by TURBOVEG and the capacity to link these data in a spatially explicit way to various spatially explicit environmental information and

subsequently to various statistical multivariate tools has added a completely new dimension to exploring underlying patterns in data that were not available in the past. Numerous new research hypotheses have been generated from these queries and a completely new discipline is emerging from the pioneering work of Stephan Hennekens, termed eco-informatics.

Given these achievements I can only assess the quality of the work of Stephan Hennekens as a major breakthrough that serves the scientific community and at the same time renders an excellent societal service in providing quality information to spatial planning procedures. He has a lot to offer to science and society and I consider him to be an excellent candidate for the Ebbe Nielsen prize of the GBIF organisation. The work of Stephan Hennekens has a large scientific spin-off and a broad societal perspective. If further information is required or more detail to be given, please do not hesitate to contact me at the address given below.

Yours sincerely,

Prof.Dr.J.M.van Groenendael.

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