

Lumbricus – database on earthworms ranges

(Oligochaeta)

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Abstract. The great volume of information on earthworms' fauna and population has been accumulated in literature by now. It is necessary to organize these data into an information system for faunistic, ecological, taxonomical and other investigation. The subject of the paper is to develop versatile system for storing, systematization and processing of data on earthworms' geographical distribution and ecological ranges. Open source database and GIS solutions were used to develop the system further referred to as Lumbricus database. The goal of this implementation is to cover blank spaces on Russian territory observed in data on earthworm's biodiversity available in World Wide Web. Lumbricus database provides some information on geographical distribution and ecological characteristics of lumbricid species of Russia both in English and Russian. It is not a comprehensive literature data collection, but just a prototype for further developing into worldwide accessible system of full value. There are more than 700 records in the database now, but it is widening permanently. The Lumbricus database is available online since December, 2011 on www.biocenos.org website.

Key words. Earthworm range, database, open-source software, biodiversity.

Introduction

Earthworms (Annelida: Oligochaeta) are of great ecological and economic significance, they are the keystone organisms in soil food webs, decomposition processes, pedogenesis, and carbon cycling. However, universal earthworms' open-access database that could consolidate literature information and field data on distribution and their habitat properties is not exists yet.

International project Global Biodiversity Information Facility (GBIF) has become an Internet-portal, that unites more than 13,000 databases with biodiversity information on various taxonomic and ecological groups (www.gbif.org). There are only five earthworm specialized database among these. Four of them are regional: *Geoworm* (Korea – 40 records), *Biodeversidad de Veracruz* (Mexico, Veracruz – 784 records), *CrèBeo EarthWorm Records* (Ireland – 680 records), *Colección de Oligoquetos Acuáticos de la UPV/EHU* (north Spain – 2509 records). There is only one world-wide database on earthworm - Collection Vermes – ZMB with 21152 records (504 records with georeference), but the records on Russian earthworms are absent in this database.

Earthworm geographic distribution information system *Lumbricus* (version 0.1) is not complicated database-oriented software (all changes are saved directly in the database) for data systematization, archiving, selecting and processing. The information system consists of three components: the first is a database - earthworm records depository, second – GUI