

Anotacijos Abstracts

Volungevičius J. Methodical aspects of soil cover structure evaluation. *Geografija. Scientific Journal. 2006. Vol. 42(2).*

Attempt has been tried to connect some methodical approaches of V. M. Fridland and J. Juodis to researches of the horizontal (spatial) structure of soil cover and, considering the methodical progress in GIS, to provide an integrated geographic solution for research on soil cover structure. Analysis of soil cover structure reveals its geoecological stability and geochemical barrier potential and allows to connect it with Lithuanian landscape researches on the theoretical plane and with land management works in practice.

References 20. Figs. 2. Tables 2. Lithuanian, summary in English.

Key words: soil cover structure, soil diversity, soil contrast index, soil structural index

Eidukevičienė M., Volungevičius J., Prapiestienė R. Substantiation of soil pH spatial regularities in Lithuania. *Geografija. Scientific Journal. 2006. Vol. 42(2).*

Soil pH spatial structure diversity determined by the statistical grid method (4 km² – 2 × 2 km) and differentiated into five categories (very uniform (1–2), uniform (3), rather diverse (4), diverse (5–6) and very diverse (7–11)) is described. Soil pH spatial regularities are discussed on the basis of spatial multilayer correlation (maps of soil pH, soil pH diversity, soil granulometric composition and soil granulometric composition diversity have been compared). Two area types, homogeneous and heterogeneous, singled out according to soil pH diversity in Lithuania are presented, and their spatial regularities are analyzed.

References 16. Figs. 3. Table 1. Lithuanian, summary in English.

Key words: soil pH diversity, spatial GIS analysis, spatial regularities, territory of Lithuania

Kairaitis Z. Educational space: the strain between the global and local dimensions. *Geografija. Scientific Journal. 2006. Vol. 42(2).*

The article deals with the strain between the *global* (international) and *local* (national) systems of education. The complicated educational processes such as *glocalization* and *globalization* are reviewed. The new concept of *educational space* is introduced, and it refers to the educational field of assorted synergetic communica-

tions. The mentioned categories of science are based on the processes that take place in the Lithuanian education system. This allows to think that Lithuania is dominated by the neo-liberal education policy and factors globalizing various educational systems. Therefore, it is necessary to look for the optimal ratio among the dimensions globalizing and localizing the educational space while preparing educational documents and developing the content of education.

References 18. Figs 3. Lithuanian, summary in English.

Key words: educational space, globalization, localization, glocalization, globalization, synergetics

Česnulevičius A., Izmailov B., Morkūnaitė R. Dynamics of deflation hollows of the Main Ridge in the Curonian Spit. *Geografija. Scientific Journal. 2006. Vol. 42(2).*

In the 19th century, the rate of sand movement of the Main Dune Ridge of the Curonian Spit reached even 13 meters per year. After afforestation of the dunes, the sands of the Main Dune Ridge stabilized. In the territory of Lithuania, there remained only two active segments of the Main Dune Ridge: the sector between Juodkrantė and the area south of Nida.

Investigation results obtained in 2003–2005 revealed that the dynamics of deflation basins depends on a few factors such as the width of a basin, its exposition and position in the slope, absolute altitude, and the width of joints. Wind erosion in deflation basins of the Juodkrantė–Pervalka sector is predetermined by strong recurring winds and position in the slopes. Most intensive processes of wind erosion take place in deflation basins in the downwind slopes of the Main Dune Ridge. Deflation basins in the western slope and in the crest of the ridge are less intensively eroded. Deflation basin exposed to the dominant winds are transformed at highest rates.

Similar eolian forms develop in bare dunes. The absolute altitude of deflation basins in the Leba dune massif is 30–40 m above sea level. Their width reaches 30–90 m, length up to 90 m and depth 5–12 m. A few tens of meters long and 1–1.5 m high dunes develop in the beach. The beach dunes are not covered with plants.

References 23. Figs. 3. Tables 2. Lithuanian, summary in English.

Key words: eolian formation, dune dynamics, eolian accumulation forms, eolian deflation forms

Beconytė G., Pubellier C. Geographic information infrastructure in Lithuania – components and data themes. *Geografija*. Scientific Journal. 2006. Vol. 42(2).

Building geographic information infrastructure (GII) in Lithuania is the major task of national geographic information management. The main goal of the project is to make harmonized and high quality geographic information readily available for implementing, monitoring and evaluating community policy and for the citizens to access regional and national spatial information. This article describes some implementation issues, such as structural components, different aspects of development and priority data themes to be integrated in the geographic information infrastructure. Partly centralized system model has been chosen for the GII in Lithuania. Centralized national metadata system allows fast and easy search and access to existing metadata. The central server is responsible for collecting metadata together into a single database and making them available in one format over the Internet. Decentralization of geographic data system reflects actual distribution of different geographic datasets – their owners become the so called nodes of the LGII, which transfer their data to the GII system on demand using unified gateways. Due to such structure, impact on existing internal business models of geographic data producers and managers can be minimized and organizations of different levels of preparedness can participate in GII as its functional units. There are two types of peripheral nodes. *Type 1* nodes refer to nodes owned by providers of reference data and national geographic data which are capable of providing geographic information services. They are responsible for maintaining their own information. *Type 2* nodes refer to nodes owned by providers of reference data and national geographic data which are not yet capable of providing geographic information services on their own. Some *Type 1* nodes of the Lithuanian GII are of special importance (municipalities, registers and cadastres, environmental and cartographic information systems). They form potential local/thematic spatial data infrastructures integrating different data themes. Ten data themes, namely, *Geodetic reference, Units of administration, Units of property rights, Addresses, Transportation networks, Hydrography, Elevation, Ortho-imagery, Geographic names* and *Forests* form the primary informational component of the LGII. It is expected that in the future all GII nodes will be able to provide a full set of standard electronic geographic information services, including discovery, viewing, download, transformation and other other generic geoprocessing services.

References 10. Figs. 2. Table 1. English, summary in Lithuanian.

Key words: geographic information, interoperability, data, metadata, spatial data infrastructure, public data, reference data

Kumetaitienė A., Sužiedelytė-Visockienė J. Corrections of digital terrain model accuracy by mosaic function. *Geografija*. Scientific Journal. 2006. Vol.42(2).

Disposable digital information by the digital terrain model (DTM) of streets and the accuracy of this model in accordance with primary data received by stereophotogrammetric and analytical methods is analyzed. Initial data are obtained using PLANICOMP P2 photogrammetric instrument and P-CAP, P-ATM, BINGO (Germany), NLHBUNT (Norway) software and the PHODIS photogrammetric work station (Germany). DTM is created by the kriging method with ESRI ArcGIS software where the size of cells is 2×2 m. In the article it is analyzed what distance around the high points can be created as buffer polygons and what is the dependence of DTM accuracy when the size of buffer zones is different. In the experiment, the size of the buffer zone changed from 5 to 35 meters. Standard deviation changed from 0.70 m to 5.97 meter. Also, the possibility to change less precise data of DTM by highly precise data of the model is evaluated using the mosaic function.

References 9. Figs. 4. Tables 3. Lithuanian, summary in English.

Key words: digital terrain model (DTM), kriging method, buffer zone, high points, mosaic function

Baltrūnas V., Karmaza B., Kulbickas D., Ostrauskas T. Distribution of raw material for prehistoric flint artefacts in South Lithuania. *Geografija*. Scientific Journal. 2006. Vol. 42(2).

The main aim of this publication is to determine the spread and genesis of the raw material of prehistoric flint artefacts in South Lithuania. The main task was to evaluate the dependence of the spread of the raw materials of flint artefacts on chalk blocks *not in situ* and their washout residuals in the region and its exploitation conditions. The sub-Quaternary surface lying at a depth of 260 m (dominant 50–150 m) is composed of Neogene, Paleogene, Cretaceous, Jurassic, Triassic and Permian rocks. There are few sites in South Lithuania with *in situ* lying Cretaceous rocks (at Skirsnemunė and Marvelė outcrops by the Nemunas River, Rokai by the Jiesia River). Blocks of sub-Quaternary rocks occur quite frequently in Lithuania. They are found in the outcrops of the Nemunas River near Alytus and Druskininkai (Paleogene rocks), of the Lower Šventoji, Lower Merkys, in the basin of the Šešupė River (Cretaceous and Jurassic rocks), south-eastwards from Vilnius (Cretaceous sand). Most of the above-mentioned blocks are found in an old segment of the Merkys River valley between Varėna and Pamerkiai. The archaeologists of Lithuania have investigated three of the four known prehistoric complexes of flint mining and processing areas: in Ežerynai (Alytus District), Lake Titnas environs (Varėna District) and Margionys village (Varėna District). Prehistoric miners extracted flint concretions from chalk washed up by melting ice water and chalk with pebbles or pebbles with gravel layers in all tree areas of the investigated mines. Prehistoric mines

were used by South Lithuanian population starting from the Final Palaeolithic until the Late Bronze or even the Early Iron Age (9th–1st mill. BC).

References 32. Figs. 4. English, summary in Lithuanian.

Key words: flint artefact, flint mine, chalk block, Stone Age, South Lithuania

Saulius Stanaitis, Darius Česnavičius. Evaluation of business environment in Vilnius. *Geografija. Scientific Journal. Vol.42(2).*

The article presents results of a complex economic and social study, part of which is evaluation of business environment in Vilnius. The main factors predetermining a choice of business location, forms of support expected from municipality, valuation of the quality of services offered by municipality, external and internal obstacles affecting activity of companies are discussed. Recent investigations allow supposing that business development does not show a spontaneous character. There are certain regularities related with the strategic territorial city development.

References 14. Figs. 5. Tables 1. English, summary in Lithuanian.

Key words: Vilnius municipality, business environment, smallest administrative units of municipalities, support from municipality

Rimkus E., Stankūnavičius G., Bukantis A. Effects of meteorological factors on PM2.5 concentrations at Preila monitoring station. *Geografija. Scientific Journal. 2006. Vol. 42(2).*

The study contains an analysis of the relationship between various meteorological indices and elements and 2.5 micrometer particle matter (PM2.5) concentrations

measured at the Preila monitoring station (Curonian Lagoon). The study period includes consecutive three years of recording PM 2.5 data starting from 2003. Wind velocity and direction seem to be the main factors affecting particle concentration in the study area. Higher concentrations tend to develop under lower pressure patterns with small gradients in the middle troposphere during a cold season of the year. Warm season patterns represent a blocking flow or steady eddies over Europe with the prevailing meridional circulation.

References 12. Figs. 7. Tables 1. Lithuanian, summary in English.

Key words: PM2.5, atmospheric pollution, meteorological conditions, atmospheric circulation

Petkevičienė B., Petkevičius K. Main features of improvement of Lithuanian motor roads. *Geografija. Scientific Journal. 2006. Vol. 42(2).*

Six periods are distinguished in the development history of Lithuanian inland roads and roadside zones. They are marked by specific features of roads and surrounding landscapes. The history of roads and roadsides reveals the trends of their improvement and changes of their functional design. The roads and roadside zones have undergone considerable physical and functional changes. Recently, motor roads have become a factor affecting the way of life and human habits and promoting the processes of urbanization in Lithuania.

References 28. Fig. 1. Tables 2. Lithuanian, summary in English.

Key words: inland road, motor road, roadside zone, landscape, improvement of inland roads, history of improvement, characteristic periods, functional design, urbanization process