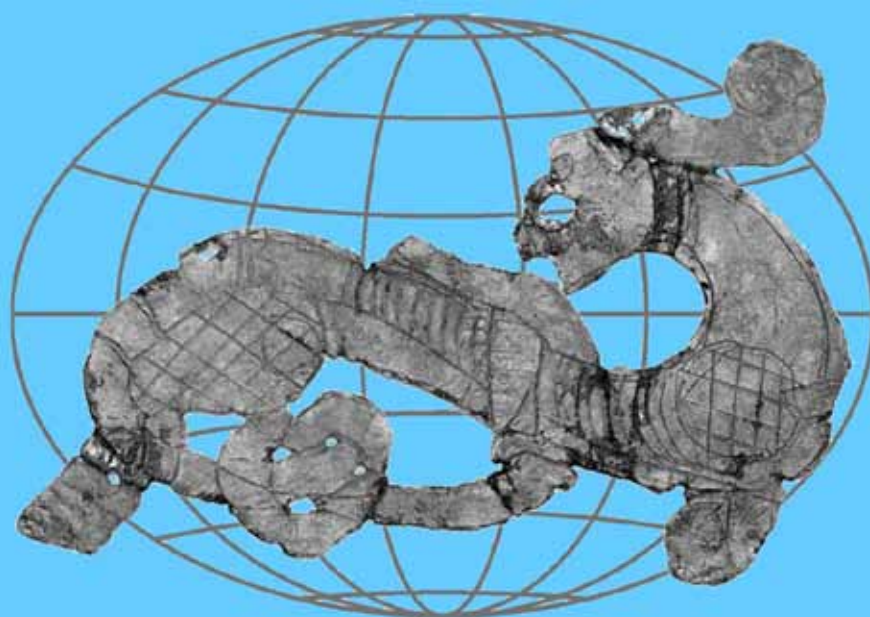


GEOMORPHIC PROCESSES AND GEOARCHAEOLOGY

From Landscape Archaeology to Archaeotourism

International conference
August 20-24, 2012
Moscow-Smolensk, Russia



EXTENDED ABSTRACTS



*Administration of the
Smolensk Region*



*Russian Association of
Geomorphologists*

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*University of Moscow:
Faculty of Geography, Faculty of History*



*Smolensk University
for Humanities*



*Russian Academy of Sciences:
Institute of Geography
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*Smolensk State
Museum-reserve*



*State Historical
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*International Association of
Geomorphologists:
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CONTENT

<i>Foreword</i>	9
<i>Agatova A.R., Barinov V.V., Myglan V.S., Nazarov A.N., Nepop R.K., Slyusarenko I.Yu.</i> Climate and seismicity as factors of human existence in south-east Altai (Russia) during the last 3 thousand years.	11
<i>Ahmadi M., Ghahroudi M.T., Nezammahalleh M.A.</i> The impacts of climate change on geotourism in Maharlou playa, Iran.	13
<i>Akkemik Ü., Caner H., Conyers G. A., Dillon M.J., Narlioğlu N., Rauh N., Theller L.O.</i> Landscape ecology and the end of antiquity: the archaeology of deforestation in south coastal Turkey.	14
<i>Alexandrovskiy A.L., Ershova E.G., Krenke N.A., Spiridonova E.A.</i> Floodplain geoarchaeology.	17
<i>Amato V., De Vita C.B., Filocamo F., Santoriello A., Scelza F., Cavassa L., Munzi P., Duploux A., Zambon A., Russo Ermolli E., Aiello G., Barra D.</i> Geomorphological and pedo-stratigraphical approach as a tool for understanding the archaeological landscapes and environments: the case-study of the ancient Laos territory (Calabria, southern Italy).	20
<i>Amato V., Filocamo F.</i> Geoarchaeotourism along the coast of the Campania region (southern Italy).	25
<i>Angelelli F., Skovitina T.</i> Geo-Archaeotourism in the Gallura Region (North-Eastern Sardinia, Italy).	29
<i>Angelelli F., Skovitina T.</i> Geo-Archaeological and historical sites of Ethiopia.	31
<i>Araújo-Gomes J., Ramos-Pereira A., Trindade J., Torres A.</i> Late Holocene geomorphological evolution of the Ribeira de Bensafrim estuary, Lagos (Portugal).	33
<i>Arzhantseva I.A., Modin I.N., Kats M.E.</i> Geophysical prospecting of early mediaeval settlements of Eurasia.	34
<i>Baibatsha A.B.</i> Natural conditions of Humanity appearance in Kazakh Steepe.	35
<i>Barwicka A., Kalicki T.</i> Development of the Kamienna river flood plain near Marcinków.	40
<i>Bessudnov A.A., Bessudnov A.N.</i> Upper Palaeolithic adaptation to surrounding landscapes in Divnogor'ye (Middle Don, Central Russia).	41
<i>Blinova I.M., Bredikhin A.V.</i> Assessment of geomorphological sites for recreational purposes.	44
<i>Bostonaliev Zh., Kaiser E., Schütt B.</i> Late quaternary spatialtemporal analysis of palaeoenvironment in Western Eurasia.	48
<i>Bronnikova M.A., Panin A.V., Sheremetskaya E.D.</i> History of the Late Holocene alluvial sedimentation, pedogenesis and colonisation of river floodplains in the upper Dnieper basin.	48
<i>Budek A., Gębica P., Okoński J.</i> Geoarchaeological studies of humic soil horizons and anthropogenic infillings on the multicultural archaeological excavation in the Wisłok and Strvjaž valleys, Carpathian Foreland.	51
<i>Budek A., Kittel P., Papernik P., Muzolf B.</i> Geoarchaeological investigation of environmental evolution and settlement changes from Neolithic period in Kuyavia Lakeland (Central Poland).	54
<i>Budianta W.</i> The potential impact of Merapi Volcano Lahar for Prambanan Hindu Temple at Yogyakarta, Indonesia.	56

<i>Chepalyga A.L., Amirkhanov Kh.A., Trubikhin V.M., Sadchikova T.A., Pirogov A.N., Taimazov A.I.</i> Geoarchaeology of the earliest paleolithic sites (Oldowan) in the North Caucasus and the East Europe.	57
<i>Chepalyga A.L., Pirogov A.N., Chepalyga A.A.</i> Fluvial geoarchaeology of East European valleys (Dniester, Kogylnik, Don) during extreme inundation epoch.	62
<i>Dêbiec M., Pelisiak A., Posselt M., Saile T., Tkachuk T.</i> Landscape archaeological research on the Linear Pottery Culture in Poland and Ukraine.	65
<i>Dedova M.</i> Combination of the tangible and intangible in cultural events organization.	67
<i>Demkin V.A., Demkina T.S., Khomutova T.E., Udaltsov S.N.</i> The dynamics of climate humidity in Southern Russia steppes within the historical time (IV mil. BC – AD XIV) (by the data of soil-archeological studies).	69
<i>Demkina T.S., Khomutova T.E., Kashirskaya N.N., Demkin V.A.</i> Microbiological studies of paleosoils of archaeological monuments in the steppe zone of Russia.	72
<i>Doğan U., Ören A.</i> Late Pleistocene-Holocene sedimentation and valley floor development of the Dicle river, Southeastern Turkey: implications from geoarchaeological data.	75
<i>Dolgikh A.V., Alexandrovskiy A.L., Voronin K.V., Alexandrovskaya E.I., Sedov S.N., Shishkov V.A., Kovalukh N.N., Skrypkin V.V., Davydov D.Yu.</i> Geoarchaeological investigations of Neolithic-Bronze age settlements on Lake Nero (Central Russia).	76
<i>Evdokimov M.Yu.</i> Influence of the route «from Varangians to Greeks» on the formation of the economy on the upper bank of the river Dnieper.	79
<i>Evelpidou N., Karkani E., Stamatakis M., Tziligkaki E.</i> Sea level changes in eastern Attica (Greece) through the use of geoarchaeological indicators.	81
<i>Fajer M., Foltyn E.M., Foltyn E., Kozłowski J.K., Waga J.M.</i> The human settlement on the periphery of the Lower Saalian's ice-sheet (Odra Stage, OIS-8) in the Upper Silesian (Poland).	82
<i>Flas D., Kolobova K., Pavlenok K., Vandenberghe D.A.G., De Dapper M., Islamov U., Derevianko A.P., Cauwe N.</i> Geoarchaeological aspects of new excavations at the Palaeolithic site of Kulbulak (Uzbekistan).	85
<i>Fouache E., Carcaud N., Robert V., Ciner A.</i> Palaeogeographical reconstruction and management challenges of an archaeological site listed by UNESCO: the case of the Letoonshrine in the Xanthos Plain (Turkey).	91
<i>Fouache E., Santoriello A., Mele F., Scelza F.U., Colaianni G.</i> The dynamic landscape. Methods, results and perspectives of the interaction between archaeology, geomorphology and archaeobotany in the experience of Egialea Survey Project (Greece).	91
<i>Galieva Z.</i> Remote sensing in the study of irrigation of the Dargom area.	95
<i>Gaynullin I.I., Usmanov B.M., Khomyakov P.V.</i> Evaluation of large reservoirs and river systems activity as a factor of archaeological monuments destruction with remote sensing data usage (Volga-Kama region).	97
<i>Gerasimov D.V.</i> Geoarchaeological data on rapid environmental changes and catastrophes in Karelian Isthmus, NW Russia.	98
<i>Ghahroudi Tali M., Nezammahalleh M.A.</i> Damaging effects of climate change on playa geotourism, Gavkhouni.	102
<i>Giligny F.</i> Lake dwelling reconstructions and public presentation: from science to tourism.	105

<i>Ginesu S., Carboni D.</i> New data from Pleistocene of Sardinia: the Paleolithic landscape.	106
<i>Golyeva A.A., Chichagova O.A.</i> Transformation of cultural layers by pedogenesis in different climatic zones of Russia.	108
<i>Gusev S.V., Repkina T.Yu., Alyautdinov A.R.</i> Natural and anthropogenic factors of sikliuk settlement formation – «Whale Bone Alley» (north-east Beringia, Senyavinsky straits).	111
<i>Gusev S.V., Repkina T.Yu., Karevskaya I.A.</i> Geochronology of old whaling culture site «Un'en'en» and paleolandscape conditions of surroundings (north-west Beringia).	114
<i>Ivanova A.E., Marfenina O.E.</i> Advantages of mycological indication for the archaeological research (on the example of medieval cultural layers in different climatic zones).	117
<i>Ivantchik A., Bielinski A., Dovgalev A., Misiewicz K.</i> Geoarchaeological and archaeological researches at Kelainai – Apameia Kibotos (Southern Phrygia).	121
<i>Kalicki T.</i> Human activity reflected in the upper Dniepr basin, Belarus.	124
<i>Karkani E., Evelpidou N., Stamatakis M., Kampolis I.</i> Beachrocks of Chamolia, East Attica.	127
<i>Karmanov V.N., Chernov A.V., Panin A.V., Zaretskaya N.E.</i> Man in a fluvial landscape: geoarchaeology of the Vychehda River valley, Northern Russia.	128
<i>Kenig A.V.</i> Yugra's archaeological monuments in the system of tourism development.	131
<i>Khamaiko N.V., Komar O.V.</i> The stratigraphy of the riverside area of Kiev Podol (excavations at the 35, Spaska str.)	133
<i>Khomutova T.E., Kashirskaya N.N., Demkin V.A.</i> The state of microbial communities in buried paleosoils in relation to prevailing climates in steppes of the Lower Volga region.	137
<i>Kittel P.</i> Slope sediments as indicators of anthropressure in the light of research in Central Poland.	139
<i>Kittel P., Dzieduszynska D., Petera-Zganiacz J., Twardy J., Krapiec M., Bujak Sz., Bronisz K., Zasada M., Plaza D.K.</i> Research of fossil forest from the Weichselian decline in the Warta River valley (Central Poland).	143
<i>Klimek K.</i> Prehistoric and Early Medieval transfer of human impact downstream small valleys; Sudetes Mts & NE loess foreland, Poland.	145
<i>Kovalev I.V., Kovaleva N.O.</i> Soil and cultural layers properties of archeological sites in Cna river valley as a source of palaeoecological information.	148
<i>Kovaleva N.O., Stolpnikova E.M.</i> Carbon isotope composition of Armenian plateau volcanic pleistocene paleosols and pedosediments of the ashelian paleolithic sites.	151
<i>Kozlov V.B.</i> The geological section in Mikulino as a tourist attraction in geotourism of the Smolensk region.	153
<i>Kozyrev A.S., Shchetnikov A.A., Klement'ev A.M., Filinov I.A.</i> Late Pleistocene archaeological sites of the Tunka rift valley, Cis-Baikal region.	155
<i>Krupa J.</i> Reflection of human activity in Czarna Nida river valley, Polish Uplands.	159
<i>Leonova N., Nesmeyanov S., Vinogradova E., Voeykova O.</i> Upper Paleolithic subsistence practices on the south of the Russian plain (the reconstruction of hilly paleolandscapes and settlement system of Kamennaya Balka sites).	161

Geomorphic processes and geoarchaeology

<i>Lorenz S., Nedomolkina N. G., Piezonka H.</i> Piles and bones in loamy river banks – geoarchaeological research on the genesis of the outstanding multiperiod dwelling site of Veksa in the Suchona Basin.	164
<i>Lozovski V.M., Mazurkevich A.N., Lozovskaya O.V., Mazurkevich K.N., Hookk D.Yu., Kolosova M.I.</i> Paleoenvironment in the Late Mesolithic – Early Neolithic at Zamostje 2 site.	168
<i>Lysenkova Z.V.</i> Toponymy in the studies of the geoheritage and tourism development of the mountainous regions.	171
<i>Maghsoudi M., Simpson I., Kourampas N., Fazeli H.</i> Geoarchaeology of Prehistoric sites in Tehran and Qazvin Plains.	174
<i>Majewski M.</i> Subatlantic hillslope deposits and landform evolution as the effect of economic activities of man in trough occupied by lake Jasień (North Poland).	177
<i>Markova A.K.</i> Palaeoecology of Middle – Late Palaeolithic Kabazi II site (Western Crimea) by the data of small mammals.	179
<i>Matlakhova E.Yu., Panin A.V., Novenko E.Yu.</i> History of the Seim River valley, Central Russia, in the context of the Avdeevo Upper Paleolithic site formation and preservation.	182
<i>Mazhar L.Yu.</i> Objects of archaeological tourism as constituent parts of the regional tourist-recreational system.	187
<i>Mazurkevich A.N., Dolbunova E.V., Kulkova M.A.</i> Pottery of the Upper Dvina region of the end of VIII – VI mil BC and raw sources for ceramics making.	189
<i>Mazurkevich A.N., Dolbunova E.V., Kulkova M.A., Alexandrovskiy A.L., Savel'eva L.A., Polkovnikova M.E., Khrustaleva I.Y., Kolosova M.I., Hookk D.Y., Mazurkevich K.N., Morozov S.V.</i> Dynamics of landscape developing in Early-Middle Neolithic in the Dnepr-Dvina region.	192
<i>Nguyen Quang Mien</i> The Geoarchaeological approaches in study of maritime archaeology in Vietnam.	194
<i>Mironyuk S.G.</i> Natural disaster as a factor possible destabilization of ancient settlements economy in north-east coast of the Black Sea and Taman peninsula.	195
<i>Murasheva V.V., Bronnikova M.A., Panin A.V.</i> Landscape-dependant functional zoning of the early medieval Gnezdovo settlement on the Upper Dnieper River floodplain.	197
<i>Murty K.S.</i> Geomorphic processes and geoarchaeology: Indian experience.	200
<i>Myslivets V., Porotov A., Zinko V.</i> Geoarchaeological implication of the Late Holocene coastal evolution: western part of the Kerch Strait.	200
<i>Neogi S.N., French C.F.</i> Geoarchaeological investigations of Harappan settlements in northwestern India with special reference to soil micromorphology of occupation deposits from Alamgirpur and Masudpur.	203
<i>Nicu I.C., Asăndulesei A., Brigand R., Cotiugă V., Romanescu Gh., Boghian D.</i> Integrating geographical and archaeological data in Romanian Chalcolithic. Case study: Cucuteni settlements from Valea Oii (Sheep Valley – Bahlui) watershed.	205
<i>Nizovtsev V.A.</i> Dunino landscape-archaeological complex.	209
<i>Panin A.V., Bronnikova M.A., Fuzeina Y.N., Sheremetskaya E.D., Uspenskaya O.N.</i> Land bridge problem for the Early Medieval island fortress of Por-Bajin, the Tere-Khol Lake, Southern Siberia.	213

Geomorphic processes and geoarchaeology

<i>Pesochina L.S.</i> Soil and climate changes in the steppe zone of Russian Plain during the Late Holocene recorded in paleosoils of the archaeological monuments.	217
<i>Peters S., Thiemeyer H., Reinhold S.</i> Microbiological soil analysis as tool to detect functional areas in habitation sites.	219
<i>Pietsch D., Kühn P., Lisitsyn S., Markova A., Sedov S., Sinitsyn A.</i> Krotovinas and stratigraphic ambiguities of the Upper Palaeolithic sites Kostienki and Borshchevo (Middle Russian Plain).	221
<i>Pirogov A.N., Chepalyga A.L., Lavrentiev N.V.</i> Geospatial methods for geoarchaeological and paleohydrological investigations. Paleogeo team experience.	223
<i>Pitulko V.V., Pavlova E.Y.</i> Permafrost as an archeological environment.	225
<i>Scherbakova S.A.</i> Characteristics of the geotourism development in the Smolensk region.	228
<i>Schlöffel M., van Hoof L., Schütt B., Dally O.</i> Human impact on landscape dynamics in the steppe environs of the Don Delta (Southern Russia).	232
<i>Schneeweiss J.</i> The impact of landscape transformation on the significance of political centres at the lower Elbe river in the 10 th c. AD.	233
<i>Schneider S., Schütt B., Zimmermann M.</i> Stratigraphy and palaeoenvironmental implications of Late Holocene alluvial fans at ancient Atarneus in the environs of Pergamon (western Turkey).	236
<i>Semenjuk O.V., Gradusova O.B., Peleneva M.V.</i> Antropogenic inclusion as an indicator of soil antropogenesis of historic sites landscape architecture.	237
<i>Sedin V.T., Bessonova E.A., Zverev S.A.</i> The mineral reserves of the Kraskino hillfort (Primorye, Russia).	239
<i>Sedov S., Sinitsyn A.</i> Late Pleistocene paleosols and environmental settings of first modern humans in Europe.	241
<i>Selezneva E.V., Panin A.V.</i> Spatial modeling of seismic-induced deformations of the Por-Bajin Fortress (VIII c. AD), Southern Siberia.	245
<i>Selin A.A.</i> Viking heritage sites in Russia as touristic objects: some results of field research in 2011.	248
<i>Sepehr A., Nowjavan M.R.</i> Geotops of Iran Playa: a geoarchaeology evidence.	250
<i>Sharin V.V., Derzhavin V.L.</i> Islands Krossøya and Russøya geological and archaeological monuments of Spitsbergen.	251
<i>Shishkina G.V., Inevatkina O.N.</i> Types of archaeological monuments of the Samarqand Soghd.	255
<i>Shkalikov V.A.</i> Outlooks of the development of the historical and archeological complex in Smolensk on the territory of the Svirskaya Sloboda.	256
<i>Sinitsyn A.A., Stepanova K.S.</i> Models of landscape use in the Upper Palaeolithic.	258
<i>Sinitsyna G.V.</i> Human adaptation to the periglacial environment in the Late Palaeolithic.	261
<i>Starkel L., Gębica P., Krapiec M.</i> Records of human activity reflected in river sediments in the Carpathians and their foreland.	264
<i>Sycheva S.A., Bessudnov A.N.</i> Late glacial paleosols (MIS 2) of the geoarchaeological monument «Divnogor'e 9».	267

<i>Taylor S.</i> Geoarchaeology and use of space in the Early Bronze Age at Dhaskalio, Cyclades Greece.	271
<i>Uskov V.A., Strikalov I.Yu., Shishov S.I.</i> Reseach and studies of cultural layers in landslides (on the example of the archaeological site on Staraya Ryazan).	272
<i>Van den Biggelaar D.F.A.M., Kluiving S.J., Van Balen R.T., Kasse C.</i> Man's struggle against water: historical landscape reconstruction of Schokland (Flevoland, the Netherlands); a combined archaeological, geological and historical geographical approach.	276
<i>Visco G., Curca M.</i> Geo-Archaeology and medicine.	277
<i>Volokitin A.V.</i> Multilayered archaeological site in the Valley of the Izhma River.	281
<i>Voskresenskaja E.V., Ocherednoy A.K.</i> New geoarcheological studies of the Middle Paleolithic site Khotylevo I (the Upper Desna River basin, Russia).	283
<i>Welc F., Marks L.</i> Late Mid-Holocene climate variability and fall of the Old Kingdom in Egypt (ca. 2100 BC), a new geoarchaeological perspective.	286
<i>Zaiceva E.A.</i> Topography of archaeological monuments and predictive capability of their detecting (by example of the territory of Surgut Priob'ye taiga zone in West Siberia).	289
<i>Zakurina T.Y., Tatarnikov O.M.</i> The ancient settelment Kamno: paleolandscape features reconstruction.	292
<i>Zaykov V.V., Ankushev M.N.</i> Ore geoarchaeology of Urals.	296
<i>Zaykov V.V., Yuminov M.N., Buslovskaya O.L.</i> International geoarchaeological collaboration at the beginning of the XXI century (Russia, Kazakhstan, Turkmenistan, Ukraine, Bulgaria).	298
<i>Zhukovsky M.O., Pushkina T.A.</i> The structure and landscape patterns of the Gnezdovo necropolis.	301
<i>Zinoviev A.V.</i> Horse burials in Baltic region: potentials for archaeotourism.	305
<i>Сергеев А.В., Черных Е.М.</i> Геоморфологическое положение городищ раннего железного века на правобережье р. Кама.	308
<i>Уфимцев Г.Ф.</i> Скалы в морфологических ландшафтах России.	311
<i>Author Index</i>	314

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**INTEGRATING GEOGRAPHICAL AND ARCHAEOLOGICAL DATA
IN THE ROMANIAN CHALCOLITHIC. CASE STUDY:
CUCUTENI SETTLEMENTS FROM VALEA OII
(SHEEP VALLEY – BAHLUI) WATERSHED**

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To integrate geographical and archaeological data to study the interaction between environment and human consists in an interdisciplinary research method – a geoarchaeological approach. This is a very important approach that shows the results offered by modern techniques (GIS) and the classic research methods [3].

The link between archaeology and environment was made since 1970's, 1980's. The forerunners who lead to development and implementation of new research methods: geological element [1], climatic element [2], hydrological element [4], geomorphological element [5], paleogeomorphological reconstruction [7].

The relation human-landscape could be considered as one of the most closely related and interdependent one to each other, because human or human communities took into account, with or without their willing, the environmental features (*geological settings* – underground resources as raw material to built their houses, manufacture of weapons for hunting, places to exploit salt resources, etc.; *geomorphological settings* – location of the settlements on the structural plateaus in defensive purpose, in contact areas to make easy the mobility between certain communities, etc.; *hydrological settings* – proximity to water resources like springs, water courses, defending against hydrological

risk phenomena such as floods, etc.; *pedological settings* – soil fertility, mineral resources, the existence of clay resources to manufacture the vessels, in this case is well known Cucuteni pottery, etc.; *vegetation and fauna settings* – the existence of an abundant forestry fund to built their houses, to heat them during the cold season, food preparing, but also to burn the vessels, etc.).

The Cucuteni culture (app. 4200-3700 BC, ^{14}C uncalibrated data) had a significant role in the genesis of the most representative european Chalcolithic civilization – Cucuteni Trypillia. Throughout the three evolution stages, Precucuteni (Trypillia A) communities have been spread out over a large territory between Transylvania, interfluve Bug-Dniepr, upper courses of Prut and Dniestr rivers and nort-western Black Sea. Thus it has been heralded the main core of future spreading area of the Cucuteni-Ariud-Trypillia cultural complex [8].

It could be considered one of the most spectacular and appealing period from south-eastern Europe; in Romania those who contributed to the discovery and research of this period are: Th. Burada, N. Beldiceanu, F. László, H. Schmidt, M. Petrescu-Dîmbovia [6].

Oii Valley watershed (Bahlui) is located in North-Eastern part of Romania and it's mainly in the area of Moldavian Plain, except a small part from the upper part of basin and the spring of the valley who are located in Suceava Plateau (fig. 1).

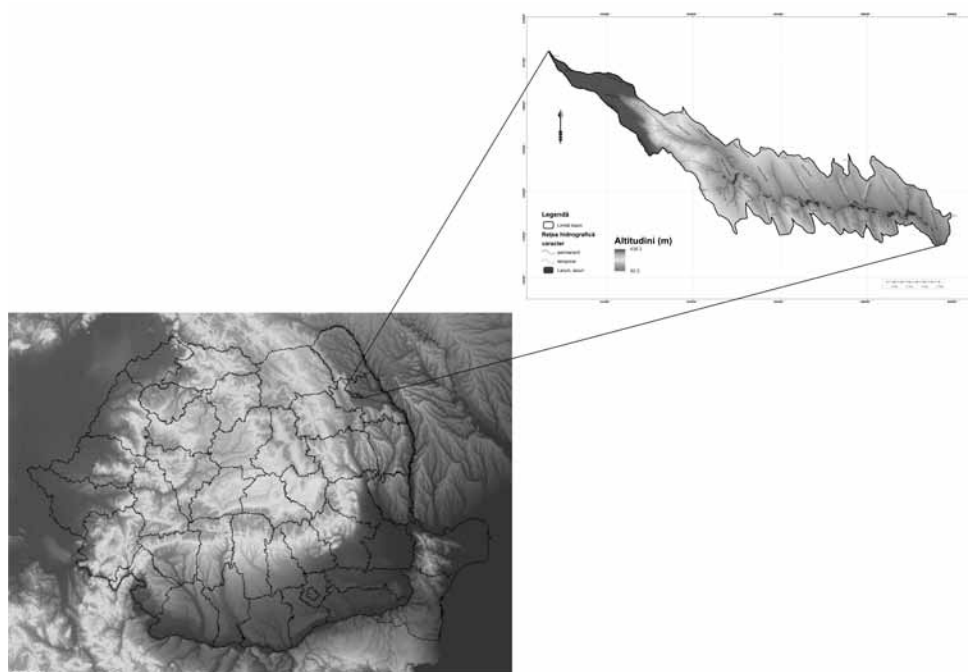


Figure 1. Valea Oii (Sheep Valley) watershed location in Romania

The geologic cover which is visible in the upper part of the basin is made of Sarmatian (Basarabian) deposits. The sandstone-limestone layers are getting thicker and fade away to south. The general pitch of strata on NNW-SSE direction, lend the relief a characteristic morphology: extended structural surfaces, subsequent and consequent valleys, fronts of cuestas (especially on the right side of the basin where the most of the settlements are concentrated).

The research achieved over a period of approximately 2 years by geographers and archaeologists from 2 different universities and one research center, specialized in topography, cartography, archaeological mapping, GIS, respectively Neolithic and Chalcolithic periods, conducted in realizing a map with all archaeological settlements from Oii Valley watershed; fieldwork was combined with the consulting of archaeological repertoires (fig. 2).

Analyzing this figure we can observe some patterns: the majority of settlements are located in the upper part of the basin at the contact between plain and plateau – where limestone resources are concentrated, as well as clays exploitations and a high degree of afforestation (16 settlements), settlements located on the structural plateaus or fronts of cuestas (with and average heights between 150-200 meters), places with a high visibility, like those from the right side of the basin (9 settlements), settlements located on alluvial deposits that contain soils with a high fertility (7 settlements), settlements located right near the water course (10 settlements).

It can be observed that the left side of the basin, which is geomorphologically speaking a reverse of cuesta, almost no archaeological settlement, although with soils that are very good for agriculture, can conclude that they were very preoccupied rather with the defensive purpose than the agricultural one.

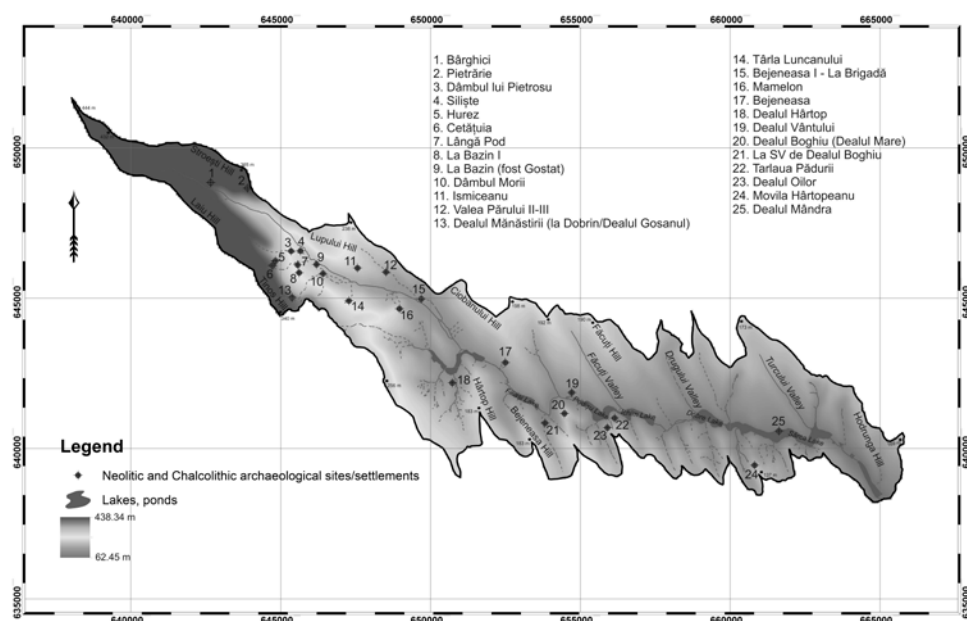


Figure 2. Neolithic and Chalcolithic archaeological settlements from Valea Oii watershed

If we take for example the case of *Bejeneasa I – La Brigadă* as well as *Mândra Hill* archaeological settlement (no. 15, respectively no. 25 from fig. 2), along with field observations, it can be observed that are located right near the main water course, being affected by warping and alluvial processes. *Mândra Hill* it's also affected by the water from *Sârca Lake*; we didn't find another explanation for this location, than the existence of 3 springs with a considerable flow. In this case the proximity to the water resources was the main reason to place the settlement.

Nowadays, the majority of the archaeological settlements are affected by hydro-geomorphological processes: gullying (eg. no. 6, no. 13), landslides (eg. no. 20, no. 21,

no. 22), or processes of aggradation (eg. no. 25); this lead us to the conclusion that fast measures to preserve archaeological settlements must be taken.

In the chronological framework of the Cucuteni culture, different kinds of viewshed are computed in order to strengthen the control of Valea Oii. On another hand, spatial patterning and cost distance analysis allow us to describe territorial models which explain the original organisation of this territory (fig. 3).

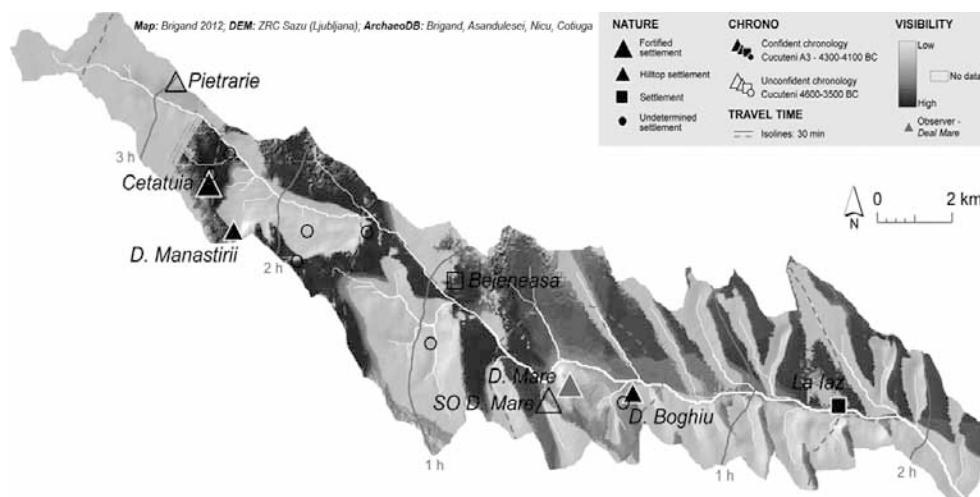


Figure 3. Viewshed and cost distance analysis from Filia-i-Dealul Mare (Valea Oii Watershed)

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