Education and Culture DG

Culture Programme

THE LOWER DANUBE IN PREHISTORY: LANDSCAPE CHANGES AND HUMAN-ENVIRONMENT INTERACTIONS

Proceedings of the International Conference Alexandria, 3-5 November 2010

Edited by
Steve Mills and Pavel Mirea

Editura *Renaissance*

THE LOWER DANUBE IN PREHISTORY: LANDSCAPE CHANGES AND HUMAN-ENVIRONMENT INTERACTIONS

PUBLICAŢIILE MUZEULUI JUDEŢEAN TELEORMAN

(III)

Education and Culture DG
Culture Programme

THE LOWER DANUBE IN PREHISTORY: LANDSCAPE CHANGES AND HUMAN-ENVIRONMENT INTERACTIONS

Proceedings of the International Conference
Alexandria, 3 - 5 November 2010

Edited by
Steve Mills and Pavel Mirea

Contributors: Sorin Ailincăi, Radian-Romus Andreescu, Douglass W. Bailey, Adrian Bălăşescu, Amy Bogaard, Albane Burens, Glicherie Caraivan, Laurent Carozza, Jean-Michel Carozza, Dimitar Chernakov, Alexandra Comşa, Mihai Ştefan Florea, Georges Ganetzovski, Maria Gurova, Costantin Haită, Andy J. Howard, Cătălin Lazăr, Mark G. Macklin, Boryana Mateva, Florian Mihail, Cristian Micu, Katia Moldoveanu, Alexandru Morintz, Amelia Pannett, Valentin Radu, Ruth A. J. Robinson, Cristian Schuster, Cosmin Ioan Suciu, Cristian Eduard Ştefan, Laurens Thissen, Svetlana Venelinova, Valentina Voinea, Angela Walker

Editura Renaissance
Bucureşti
2011

PUBLICAŢIILE MUZEULUI JUDEŢEAN TELEORMAN

(III)

The International Conference **The Lower Danube in Prehistory: Landscape Changes and Human-Environment Interaction** was part of the **Art-Landscape Transformations EC Project 2007-4230**, Cardiff University partner scenario **Măgura Past and Present** funded by the European Union.

Cover design: Pompilia Zaharia (Teleorman County Museum, Alexandria)

Descrierea CIP a Bibliotecii Naţionale a României

The Lower Danube in Prehistory: Landscape Changes and Human-Environment Interactions/Proceedings of the International Conference, Alexandria 3-5 November 2010/
Editori: Steve Mills; Pavel Mirea

Bucureşti, Editura Renaissance, 2011

ISBN 978-606-8321-01-1

I. Steve Mills (Ed.)

II. Pavel Mirea (Ed.)

903(282.243.75)

This volume has been supported by the **Art-Landscape Transformation EC Project 2007-4230**. European Union Education, Audiovisual and Culture Executive Agency Culture Programme (2007-2013).

Renaissance 2011 - www.editurarenaissance.ro
(Recognized Publishing House by C.N.C.S.I.S.)
Director: Sorin Alexandru ŞONTEA
Phone/fax: +4.031.808.91.97/+4.0744.652118
E-mail: sorinsontea@rdslink.ro

ISBN 978-606-8321-01-1
Printed in Romania by ABSTRACT MEDIA SRL
Tel/fax: +4.031.808.91.97

F O R E W O R D

This volume is dedicated to the conference 'The Lower Danube in Prehistory: landscape changes and human-environment interactions' held in Alexandria between the 3rd and 5th November 2010. The conference was funded by the European Commission as part of the Art-Landscape Transformations Project 2007-4230 - Cardiff University partner scenario: 'Măgura Past and Present'. The Măgura project was developed by Cardiff University and a local partner, the Teleorman County Museum, Alexandria. The project is a continuation of the fieldwork conducted in the Teleorman Valley between 1998 and 2004 as part of the Southern Romania Archaeological Project (SRAP); SRAP is a collaboration between Cardiff University, the Romanian National History Museum and the Teleorman County Museum.

For three days, 36 specialists (archaeologists, archaeozoologists, geomorphologists, and palaeobotanists) from Bulgaria, France, Great Britain, Romania and the U.S.A. met in the Alexandria Museum. The participants gave presentations that focused chronologically from the Neolithic to the Bronze Age and geographically throughout the Lower Danube Basin, both north and south of the Danube and including the Danube Delta and western Black Sea coast.

This volume includes papers that are based on some of the conference presentations as well as other research relevant to the conference topics. In keeping with the conference working sessions, the volume is divided into several sections: 'Landscape, settlements and paleoenvironmental reconstruction', 'Landscape, demography and funerary space', 'Seasonality, subsistence and raw material sourcing', and 'New approaches to prehistoric landscape research'.

The volume editors and the conference organisers (Cardiff University, School of History, Archaeology and Religion, and the Teleorman County Museum) express their gratitude to all of the participants and especially for the research contributions that drive forward our understanding of the prehistory of south-eastern Europe and of the Lower Danube area more specifically.

Steve Mills and Pavel Mirea

C O N T E N T S

THE POTENTIAL OF HISTORIC LANDSCAPE CHARACTERISATION FOR THE LOWER DANUBE AREA

Steve MILLS

Abstract: *This paper introduces and promotes Historic Landscape Characterisation (HLC) as a valuable research approach for adoption and adaptation in the Lower Danube area. HLC is a set of principles and flexible methodologies for integrating the historic dimension (time-depth) of landscape into strategies for the protection, management and planning of the European landscape. The approach is forward-looking to ensure archaeological and historic components are part of long-term sustainable development within the landscape and has at its core the principles of the European Landscape Convention (ELC). I outline the principles and benefits of HLC and the ELC, discuss the application and outputs of HLC and end by promoting the potential of future related research in the Lower Danube area using the example of the Teleorman River Valley.*

Keywords: *Landscape; Characterisation; European Landscape Convention; CORINE; GIS*

What is Historic Landscape Characterisation?

Historic Landscape Characterisation (HLC) is an approach for studying and representing the (pre)historic development and surviving features in the present day landscape. It aims to understand how the present day landscape came into being by focussing on the significant contribution of past human activity. In terms of application, it provides an archaeological method to define and map the historic and archaeological components that survive and contribute to the form of the present day landscape. Furthermore, HLC provides data and knowledge that ensure that the (pre)historic dimension of landscape is fully integrated in national and international strategies for the protection, management and planning of the landscape. HLC methodologies are purposefully diverse and flexible contributing to the wider move towards more integrated and holistic modes of managing and understanding the landscape. Importantly, the approach acknowledges landscape as a matter of interpretation and not of record, encouraging researchers to understand landscape as an idea rather than as a commodity. HLC therefore provides wide-ranging data and helps to establish research agendas.

HLC developed in the UK through collaboration between English Heritage and regional heritage agencies and County Councils during the 1990s (Clark *et al*. 2004; English Heritage HLC website; Fairclough 2001; Fairclough *et al*. 1999; Herring 1998; Rippon 2004). The HLC programme now provides two-thirds coverage in England with similar frameworks applied in Scotland and Wales. The approach continues to be refined with advances in technologies, principally GIS, and through methodological reviews (Aldred and Fairclough 2003; Fairclough 2002a). More recently, the principles and methodologies of HLC have been successfully adopted and adapted in other European countries including Denmark, Ireland, Germany, the Netherlands, and Latvia (Clark *et al*. 2003; Fairclough and Rippon 2002).

Landscape requires an holistic approach to encourage its many cultural and natural attributes to be studied, integrated and managed to the same standard and so that all are perceived as contributing value. Landscape can be characterised (described and represented) using one physical attribute or combinations of physical attributes. These can include: geology; geomorphology; soils; hydrology; distributions of flora and fauna; climate; and current land-use. Landscape can also be characterised in terms of perceptions and aesthetics and include less-tangible attributes such as tranquillity, sound, noise and smell (Bell 1999; Campaign to Protect Rural England tranquillity website; DEFRA noise mapping website; European Parliament noise directive website; Mills 2005a). The purpose of HLC is to compliment and enhance other forms of landscape characterisation by ensuring the integration of the historic and archaeological record - collectively termed the historic landscape. The principles, methods and applications of HLC are fully described elsewhere (Clark *et al*. 2004; Fairclough *et al*. 1999; Rippon 2004), in the next section I provide a summary of the key elements.

Key elements of HLC

The historic landscape is a descriptive term used when referring to the historic dimension of the whole landscape, in other words, that aspect, or character, of landscape based on an appreciation

Steve MILLS and Pavel MIREA (eds.) *The Lower Danube in Prehistory: Landscape Changes and Human Environment Interactions - Proceedings of the International Conference, Alexandria 3-5 November 2010*: 203-219.

and understanding of its past (Fairclough *et al*. 1999: 55). The term historic landscape is used in the singular thereby ensuring that the landscape is always considered as an integral whole and that it is not divisible into discrete areas. This is deliberate to avoid the possibility that some areas may be considered historic while others may not be (Fairclough *et al*. 1999: 10). Furthermore, by using the term historic landscape as a collective noun, the aim is to avoid situations where sites are considered in isolation of their wider landscape contexts and thus lose some of their significance and value in the process.

As well as the more traditional individual features classified as ancient monuments or historic buildings, the historic landscape must include all historic elements such as tracks and paths, field boundaries, common land and ancient woodland (Fairclough *et al*. 1999: 2). Thus the more commonplace historic elements are also included and considered significant in contributing to the overall integrity of the historic landscape. This encourages research that acknowledges that all landscape has a history, a time-depth, however recent or old changes or features might be, and that it is the articulation between different elements that give landscape its historic character and which varies from area to area. Following this, a key guiding principle of HLC is that the landscape, as a whole, is an historic artefact which is culturally shaped everywhere to a greater or lesser extent (Fairclough *et al*. 1999: 8).

The landscape as historic artefact emphasises the point that there are very few areas (if any in some countries) that can be considered completely natural. Most of the landscape has been influenced by human activity of various kinds for thousands of years, from the digging of pits, to farming, to building houses, villages and towns. The historic landscape, with material remains visible at surface or excavated, represents a very long sequence of human decisions, activities and land use and archaeology is therefore the appropriate discipline to study this aspect of its time depth (Fairclough *et al*. 1999: 8-9).

As well as being an historic artefact, it must be acknowledged that landscape is also a living, dynamic, artefact, continuously changing and evolving as a result of cultural and natural processes. As well as activities and material remains visible from, for example, prehistory or the medieval period, those of the very recent past and of the present, contribute variously to the historic landscape of the future. Fairclough *et al*. 1999 highlight this point in the title of their book - *Yesterday's world, tomorrow's landscape*. As a living artefact, the landscape will continue to be modified and changed in the future. This provides the basis of another of the guiding principles of HLC: further change is inevitable and landscape approaches must accommodate this through proper management and conservation strategies rather than by aiming to prevent change altogether (Fairclough *et al*. 1999: 8). The purpose of HLC is, therefore, principally to provide evidence and supporting documentation of the historic dimension of landscape to help manage future change and not to reconstruct the past landscape or to identify and study any ancient or 'relict' landscape. With improved understanding, documentation and education, the archaeological community is better positioned to ensure the historic dimension of landscape is properly managed and conserved in the face of inevitable future change including new and modified utilities and transport networks, changing farming regimes and new build (both urban and rural).

Following from the previous point that the aim is not to reconstruct the past landscape - the idea of 'relict' landscape is dismissed as flawed; landscape is never relict (Fairclough *et al.* 1999: 14) -, HLC is concerned with the study of the present landscape and the physical remains of landscape development. The HLC approach has been described as retrogressive in that it starts with the present landscape and works back to identify the period from which the dominant surviving features of the historic landscape originate (Rippon 2004: 3). Research may involve studying and reconstructing past landscape horizons and disused components but they are part of the present landscape; there is no tangible Neolithic landscape out there to study for example. It is within the present landscape, either visible at surface or buried beneath, that (pre)historic features and components are located, discovered, experienced, studied and managed. The primary object of study and presentation is understanding the complex relationship between the present, developed, landscape and the physical remains of episodes of past human activities and land use contained and visible within it (Fairclough *et al*. 1999: 14-16). Studying this complex relationship includes identifying causality; understanding the historical processes that formed the historic landscape as it appears today in the present landscape. So the emphasis of HLC is always on understanding the origins and development of the modern landscape (Rippon 2004: 3).

Recognising that the whole landscape has an historic dimension helps ensure that future management is not limited to selective protection where only the best archaeological and/or historic

examples within the landscape are considered. While protection of archaeological and historic sites and buildings is essential, the surrounding landscape is critical in providing context and must also be appropriately managed so that protected sites and buildings are not devalued. To avoid situations where designated sites and buildings become preserved islands in the landscape, the quality of the landscape context must be included in sustainable development strategies (Fairclough *et al*. 1999: 11). Furthermore, by studying the complex multi-period evolution of landscape, HLC also helps avoid situations where only particular single (pre)historic periods within the landscape are represented and thus potentially isolated from the broader chronological context (Fairclough *et al*. 1999: 16). Approaches that only highlight and manage certain time-slices within the landscape risk devaluing earlier and later episodes of change that are integral to the landscape's time-depth. This is in no way intended to reduce the importance and significance of lists and records of archaeological and historic monuments and buildings, rather HLC aims to complement and enhance them through the inclusion of time-depth (archaeological and historic succession) of the whole landscape. This ensures that local and regional distinctiveness, complexity and diversity in the historic landscape are recognised and studied alongside components that are of national and international importance.

Thus the importance of individual archaeological and historic sites and buildings is their contribution to wider landscape patterns. To study landscape patterning requires the key HLC concepts of coherence and articulation that aid in understanding the integrity of the whole historic landscape (Fairclough *et al*. 1999: 12-13). Coherence refers to the visibility of, and our ability to understand, identifiable systems of historic features/components in the landscape (e.g. buildings, settlements and their related boundaries and field patterns). Articulation is how well related such historic features are in the present landscape (e.g. is a settlement still closely related to its associated field pattern?). These concepts, measured using criteria including rarity, representivity and survival, can be considered at a range of spatial scales from local to regional to help identify and represent the physical extent of site and landscape patterns and relationships.

Bloemers (2002) argues there are essentially two approaches to archaeological research: past-oriented and future-oriented. Past-oriented approaches aim to understand how the present landscape came into being through studying (principally cultural) processes of landscape change through time. Future-oriented approaches focus on planning and management by including archaeological values in the present and future development of qualities of human life and the environment. While the two approaches are complementary, their practitioners, aims, methodologies and results are often different. By providing a flexible, intermediate set of principles and methodologies that bridge differences in theory and practice, HLC can help integrate these two approaches.

A key element to further emphasise is that, in terms of HLC, landscape is considered an idea rather than as a physical commodity. Landscape exists only when people, from any period in time (as hunter-gatherers, farmers or archaeologists), experience or think about it; landscape is always culturally determined and historically conditioned (Fairclough *et al*. 1999: 9). The historic landscape only exists because different communities perceive and value it in different ways and as a consequence it becomes something to enjoy, study, manage and protect. This demands that HLC approaches are not rigid in their definition, study and representation of the historic landscape but are flexible to accommodate the varying perceptions and requirements of different interest groups.

From the outset, ensuring the transparency of HLC methods and data and the accessibility of HLC results has been central to the approach and its development. Full documentation of the data used and the methods of analysis and interpretation are essential for critical evaluation and application and the procedures used by different agencies are subject to review and improvement (e.g. Aldred and Fairclough 2003; Fairclough 2002a). To be of best use, the results and outputs of HLC (maps, reports, books and online resources) must be accessible to a wide range of interest groups including: local authorities; landscape managers; planners; developers; academics; schools; local societies and other interested community groups. It is essential therefore that HLC outputs are flexible and easy to understand to meet the requirements of different interest groups but reflect the rigour of the methodologies used.

In summary the key principles of HLC are (after Aldred and Fairclough 2003: 21; 40-41 and Clark *et al*. 2004: 6):

- Present not past - the object of study is the present landscape with the most important characteristic being its time-depth;
- Landscape not sites - area not point data;

- All aspects of landscape - not just special areas and including the recent past;
- Human landscape - landscape diversity is largely a cultural phenomenon;
- Interpretation not record - landscape as an idea;
- People's views - include collective and public perceptions;
- Management of change not preservation - landscape is dynamic;
- Transparent - clear records of data and methods;
- Accessible - HLC text and maps should be easily accessible to users;
- Integration - HLC results should be integrated into other management records.

The objectives of any HLC approach should aim to include all, or many, of the following (after Fairclough *et al*. 1999: 55):

- To promote an awareness of local identity and regional diversity;
- To recognise past interactions between people and environment through time revealed by the surviving landscape;
- To promote understanding, appreciation and conservation of the physical evidence for the development of human society within the landscape;
- To identify, characterise and evaluate the historic dimension of landscape to facilitate conservation policies and practice;
- To promote appreciation and understanding of the landscape context of archaeological and historic sites.

HLC methodologies

HLC methodologies are deliberately diverse and flexible to accommodate local and regional diversity and distinctiveness but adhere to core strategies in respect of objectives, data collection, analysis and application. Full details of methodologies applied and recommendations for best practice for future HLC projects are available elsewhere (e.g. Aldred and Fairclough 2003; Fairclough 2002a; Fairclough *et al*. 1999; Herring 1998; 1999; Lancashire County Council 2000; Turner 2005; Rippon 2004). I provide a brief summary here of the core elements common to all approaches.

HLC is a two-stage process (after Clark *et al*. 2004: 6):

1) Mapping, describing and interpreting, 'this is what we have';
2) Judgements and application, 'this is what we wish to do with it'.

These two stages are divided into a number of tasks carried out sequentially or simultaneously depending on the complexity and size of the project (after Fairclough *et al*. 1999: 56-59):

1) Study objectives (defining the study area, methodology, users and outputs);
2) Data collection (identifying data sources used to determine time-depth and (pre)historic features in the landscape);
3) Data analysis and characterisation (mapping time-depth and features and identifying relationships and patterns upon which to base characterisation);
4) Evaluation and grading (if required, comparison of the relative value of different areas of landscape following characterisation);
5) Policy implications and recommendations (dissemination and integration of results into landscape management, planning and protection strategies).

Mapping, originally paper-based but now exclusively using GIS, is fundamental for providing the general spatial and environmental background, for identifying time-depth and (pre)historic features, for subsequent characterisation of the landscape and for the presentation of the results in the form of maps.

The principal source of data for HLC is the landscape itself which provides the spatial and temporal framework for all subsequent data collection, integration and analysis (Rippon 2004: 3). Initial data collection and incorporation into a GIS provides the general spatial and environmental background for a given study area. In addition to existing archaeology and historic data sets (see below), this may include any or all of the following (after Fairclough *et al*. 1999: 56):

- Geology
- Landform (geomorphology)
- Hydrology and drainage
- Climate
- Environmental evidence (flora/fauna)
- Vegetation cover

- Current and recent land use

Sources of data used and the formats available (whether electronic or paper-based) to identify and map archaeological and historic features and time-depth to enable characterisation vary according to location and study objectives. As a general list, any or all of the following might be used:

- Modern maps (topography, geology, hydrology, soils, vegetation)
- Historic maps
- Registers of archaeological and historic sites and designations
- Documentary sources (place names, historic records, travel diaries)
- Aerial/satellite photographs
- Current land use
- Boundaries
- Field morphology (shape and size)
- Distribution of other resources (woodland, water, minerals)
- Settlement types and patterns
- Communication types and patterns (roads, rail, canals, airfields)

Alongside the knowledge and expertise of local archaeologists and historians, data sources integrated in a GIS can be used to identify and map the physical evidence for archaeological and historic features. The range of physical evidence will vary according to location and may include: palaeo-environmental deposits; archaeological remains; buildings and structures; boundaries; tracks and paths; ponds; and semi-natural features such as woodland, common land and grassland (Fairclough *et al*. 1999: 54).

The process of characterisation is based on identifying the density, predominance, patterning and interrelationships between identified and mapped archaeological and historic features. While specific procedures for characterisation vary, in general it is the predominance of (pre)historic components or systems of a certain age that survive in the present landscape that are used to characterise a given area. For example, an area with a predominant and surviving medieval field system that has not been significantly changed since the medieval period may be characterised as *medieval enclosure*. Alternatively, an area dominated by recent but disused industrial features (perhaps following mining), may be characterised as *industrial (disused)*. In addition to predominance, the process may also include identifying features of a similar age producing landscape maps of different (pre)historic periods. The versatility of GIS allows the same data to be managed, manipulated and represented in a range of different ways depending on requirements.

To characterise the historic landscape, the spatial arrangement of (pre)historic features can be considered as elements that combine to form components (Rippon 2004: 19-24). Elements are individual features such as a house/farmstead, a river, a track or a field. Components are a group of elements that have the same function such as a village (made up of farmsteads) or a field system (made up of fields). The articulation of different components into distinctive and repeated combinations defines a historic landscape type such as a settlement pattern (medieval/modern) or a form of farmland based on field systems (prehistoric/medieval/post-medieval). HLC types are the core for characterising the historic landscape but can be generalised further into HLC zones or areas consisting of recurring, associated HLC types that reflect common landscape processes of development (e.g. anciently enclosed land, urban or industrial). The approach to identifying HLC types is most commonly a bottom-up approach within a GIS using mapping (and other data sources mentioned above) to ascribe parcels of land to predetermined HLC types.

Using GIS, polygons of HLC types, zones and areas are thus created providing an electronic resource mapping the historic landscape. Attribute data can be associated with the polygons within a GIS and in supporting texts providing further information about each polygon and HLC type, zone or area. Alongside the visual presentation of HLC mapping, the attribute data and supporting texts provide users with a valuable resource for management, evaluation and interpretation. Additional supporting data may include (after Herring 1999):

- Definitions and distinguishing attributes
- Principal historic processes
- Typical historic/archaeological components
- Rarity
- Typical survival of historic/archaeological components
- Surviving coherence
- Visibility of evidence for time-depth

- Contribution of historic character to present character
- Extent and quality of archaeological research
- Potential for archaeological research
- Potential for amenity and education
- Condition of components
- Vulnerability of components
- Forces for change (preservation and damage)
- Importance
- Principal location
- Extent and nature of variability within study area
- Recommended landscape management

The GIS-based electronic data and maps and accompanying written texts are the key outputs of HLC providing a valuable resource for a diverse range of users.

Applications of HLC

Clark *et al*. (2004) detail the wide range of applications, benefits and uses of HLC and its outputs; these fall into four main categories:

1) Landscape management. Providing HLC data to landowners, estate managers, farmers and other landscape organisations and advisory groups encourages positive landscape management and helps to foster good working relations. Integrating HLC data with that of the natural environment is invaluable for advising agri-environment schemes.
2) Landscape character assessment and strategies. These are holistic and wide-reaching approaches and documents for landscape management (including geology, soils, vegetation and land use). HLC contributions ensure the historic aspects of landscape are included in the development and implementation of broader landscape strategies and policies.
3) Spatial planning. By providing landscape-based assessment and recommendations for sustainable management beyond that focussed on individual sites and monuments, HLC helps to inform new planning policy and development and planning applications. This is particularly important for identifying the archaeological potential of landscape locations where there is limited information in the form of lists, records and designations of archaeological and historic sites and buildings.
4) Partnership, learning and outreach. HLC provides support for other aspects of environmental management including: Conservations Areas; village design statements and plans; and historic buildings and property management plans. The dissemination of HLC results through talks to local societies and professional and other interest groups and with online resources helps to raise awareness of the historic landscape. HLC can also inform academic research and learning by identifying areas of archaeological potential beyond known sites and monuments and by increasing knowledge of the patterning and articulation of components of the historic landscape.

The applications of HLC are therefore wide-ranging and have the potential to benefit a broad range of users including local, regional and national authorities, farmers, commercial and academic archaeologists and the wider community. The next section provides a summary of the HLC approach as applied in Cornwall, UK, as an example of its applications and benefits.

HLC in Cornwall

The author was first introduced to HLC while in employment with the Historic Environment Service, Cornwall County Council (2001-2003) contributing to the GIS mapping of HLC for the Cornish Mining World Heritage Site Bid and the Cornwall and Scilly Urban Survey (see the respective web sites for further details). HLC in Cornwall started in 1994 with support from English Heritage, Landscape Design Associates and the county and district councils (see the Historic Environment Service Cornwall Characterisation web page and Herring 1998; 1999). The present day landscape provided the source framework for study and, using modern Ordnance Survey 1:25,000 paper maps, every parcel of land down to the scale of individual fields was systematically assessed. Based on the archaeologists' knowledge of the county and study of modern and historic maps, seventeen HLC types were identified and every parcel of land in the county ascribed to one of them. The Cornwall HLC types are:

- Rough Ground
- Prehistoric enclosures

- Medieval enclosures
- Post-medieval enclosures (C17th - C18th)
- Modern enclosures
- Ancient woodland
- Plantations and scrub
- Settlements (pre- C20th)
- Settlements (C20th)
- Industrial (active)
- Industrial (disused)
- Communications (roads, rail, airfields)
- Recreation
- Military
- Ornamental
- Reservoirs
- Natural water-bodies

The HLC types were subsequently generalised and simplified into HLC zones as these were considered more useful for end users: Upland rough ground; Coastal rough ground; Dunes; Anciently enclosed land (AEL); AEL altered in C18th & C19th; AEL altered in C20th; recently enclosed land; Navigable rivers; Steep-sided valleys; Urban development; Ornamental; Recreation; Industrial; Military; Airfields; Upland woods (plantations); Reservoirs; Inter-tidal. In addition to the mapping, detailed documentation and attribute data, as discussed above, support the HLC types and zones. The approach was originally paper-based but is now fully digital using GIS and continues to be refined. Figure 1 provides an example of HLC mapping in Cornwall.

The Cornwall HLC has had, and continues to have, many applications and has been highly influential in the development of HLC throughout the UK and further afield within Europe. Cornwall HLC reports have been distributed across the county to planning and landscape officers, to surveyors, to landscape management agencies and are available for public use in county libraries. Based on the HLC, staff in the Historic Environment Service can coherently and consistently provide advice concerning proposed developments and to landscape decision-making bodies. It has been successfully used to target areas requiring evaluation and mitigation in advance of new development and to identify those with archaeological research potential beyond that already known. Through regular presentations, HLC has been well received by broader community interest groups particularly as it acknowledges the historic/heritage value of non-designated areas where most people live. In addition, and as already mentioned, HLC mapping and documentation contributed to the successful bid for World Heritage status for Cornish Mining (inscribed 2007).

The European Landscape Convention

Having introduced and summarised HLC, it is important to briefly mention how it contributes to wider European initiatives by discussing how it dovetails with the principles of the European Landscape Convention (ELC). The Council of Europe opened the ELC for signature in Florence in 2000 and it came into force on 1st March 2004 following ratification by ten member states (see the Council of Europe European Landscape Convention web pages; Council of Europe Treaty Series no. 76 web pages; Déjeant-Pons 2002; Fairclough 2002b). As of January 2011, 33 member states have ratified the convention including: Bulgaria; Hungary; Moldova; Romania; Serbia; Ukraine; and the United Kingdom. By promoting landscape as an aspect of common heritage essential for individual and community well-being, the ELC complements other existing conventions which aim to preserve natural and cultural heritage: Conservation of European Wildlife and Natural Habitats; Protection of the Architectural Heritage of Europe; and Protection of the Archaeological Heritage.

The purpose of the convention is to provide the general principles for, and help promote and organise, European co-operation for the understanding, protection and sustainable management of the European landscape. It advocates that landscape issues must be democratic with active participation of the public as well as input from state, local and regional authorities and scientific and technical bodies. Importantly, the convention recognises that all landscape contributes to the common European heritage whether it be urban or rural, commonplace or outstanding, on land or in water.

The definition of landscape in the convention has important implications for the historic landscape and HLC:

> *"Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"* (Council of Europe Treaty Series no. 76, Article 1).

First, the definition highlights landscape as a matter of perception, meaning it is more than just a commodity, an environment; it is to do with interpretation, memory and understanding. This is in keeping with the HLC notion that landscape is first and foremost an idea. Second, the definition emphasises that landscape is, in part, a product of human interaction through time and that landscape history demands study and incorporation. Finally, by acknowledging both natural and human factors, the definition is inclusive of commonplace, ordinary areas created by human action and that such areas contribute diversity and value to the European landscape.

All of the principles of HLC have been endorsed by the European Landscape Convention and the Convention's philosophy now provides the core for HLC aims and objectives. The Convention has provided impetus for the uptake of HLC approaches across Europe through, for example, the *European Pathways to the Cultural Landscape* project, and to the development of *A Strategy for the Heritage Management of Europe's Landscape* promoted by the *Europae Archaeologiae Consilium* (Clark *et al*. 2003; European Union European Pathways website; Fairclough and Rippon 2002). Combined, and if adopted, the ELC and HLC provide a guiding philosophy, set of principles and flexible methodologies to ensure the historic landscape is fully integrated in future landscape management strategies at a European scale.

Implementation of the Convention is aided and organised through conferences, workshops, seminars and working groups; the sixth set of workshops took place in Sibiu, Romania in 2007 (Council of Europe 2009). In addition, interdisciplinary research, education and outreach are supported by UNISCAPE, a network of universities dedicated to the implementation of the Convention (see UNISCAPE web site) and by the Landscape Character Network (see Landscape Character Network website).

The potential for the Lower Danube Area

The discussion above has introduced HLC, its principles, methodologies and applications; the following section discusses its potential and application in the Lower Danube area. At the time of writing, and to the best of the author's knowledge, HLC has not yet been applied in the area.

The closest example of related research is the Ethnographic Atlas of Romania - EAR (Ghinoiu 2009). This provides a classification/characterisation of the rural landscape in Dobrogea combined with data from questionnaires of 18,000 subjects in 600 villages. The EAR is available on the Romanian Institute for Cultural Memory (cIMeC) website with an online interactive map (cIMeC 2006). Based on soil classification and four ethnographic categories (settlement, occupation, arts and crafts and religion), the project identified five rural landscapes in Dobrogea: Forestry, Fishery, Pastoral, Agricultural and Viticultural. The EAR also provides some time-depth with land use information from prehistory to the present for the five rural landscapes. The EAR thus provides a valuable, accessible, resource for the study of the rural landscape and land use through time and the researchers advocate extending the approach more widely within Romania and further afield along the Danube.

The EAR provides an example of landscape characterisation in the Lower Danube area; research that specifically studies the historic dimension of landscape is required to compliment and enhance this existing body of data. The historic dimension is included in point-data location mapping of registers of archaeological and historic sites and buildings and archaeological excavations. The online Mapserver for National Cultural Heritage in Romania for example, provides an accessible, interactive and searchable resource for archaeological and historic sites (cIMeC 2011a). Further details about archaeological sites are available online through the National Archaeological Record of Romania (cIMeC 2011b). To be more inclusive of the wider historic landscape, and to move towards historic characterisation, these point data sets need to be combined with area-based landscape mapping.

Base mapping, both modern and historic as discussed above, produced by national mapping agencies provides the starting point for determining historic landscape characterisation and for producing supporting maps. These are now readily available as digital resources suitable for use in GIS as well as aerial photographs and satellite imagery. Florea and Ştefan discuss historic and modern mapping resources available for Romania (Florea and Ştefan this volume).

Much area-based historic landscape (GIS) mapping in the UK is determined from existing stone, fence or hedge lined field boundaries shown on Ordnance Survey maps. In the absence of permanent field boundaries in the Lower Danube area, and consequently their survey and mapping by National mapping agencies, an alternative form of base mapping is required from which land use can

be determined. The best candidate resource for this currently publicly available is the *Co-ordination of Information on the Environment* (CORINE) land cover mapping (for details see European Environment Agency 1999; Kleeschulte and Büttner 2006). CORNIE mapping, based on computer assisted visual interpretation of ortho-rectified satellite images (Landsat 7 ETM), provides qualitative and quantitative land cover information which is consistent and comparable across Europe. The mapping is available for download as raster or vector datasets from the European Environment Agency with separate versions showing land cover at 1990, 2000 and 2006 (European Environment Agency CORINE website). The vector database is available at a scale of 1:100,000 with a minimum mapping unit of 25ha and includes 44 classess of land cover divided into five categories: Artifical surfaces; Agricultural areas; Forests and seminatural areas; Wetlands; and Waterbodies. The land cover mapping has been validated with the help of the European Land Use/Cover Area (LUCAS) statistical survey and the reliability of the 2000 dateset is 87.0 +- 0.8%. Figure 2 shows the CORINE land cover 2000 mapping for Romania.

As a digital resource available for direct input to GIS, CORINE land cover mapping provides an ideal starting point for creating area-based historic landscape mapping. Using hard copy maps produced from a GIS, together with local knowledge, the land cover mapping can then be verified through ground truthing and the GIS database updated and refined accordingly. Additional complementary datasets of value for refining land cover and for determing HLC, particularly soils and rivers, are available from the European Commission, Joint Research Centre Institute for Environment and Sustainability (see European Commission Institute for Environment and Sustainability website; European Commission European Soil Portal website).

Teleorman Valley example

Archaeological and geomorphological survey and GIS-based mapping, centred on the village of Măgura in the Teleorman Valley, have been ongoing since 1998 as part of the Southern Romania Archaeological Project - SRAP (Bailey *et al*. 2003; Howard *et al*. 2004; Mills 2001; 2009). Additional, complementary, land cover mapping was conducted as part of the author's doctoral research between 1998 and 2001 (Mills 2005b) and in collaboration with Bryn Tapper in 2004, a HLC and GIS specialist from the Historic Environment Service, Cornwall County Council. Combined, this mapping provides spatial and chronological detail of prehistoric (principally Neolithic) archaeology and of Holocene river sequences together with a first attempt at mapping modern land cover (Figure 3).

The collaboration of Mills and Tapper in 2004 specifically aimed at assessing the potential of, and logistics involved in producing, HLC in the Teleorman Valley study area. In particular, the focus was on developing a methodology suitable for mapping land use in an area without stone, fence or hedge lined field boundaries as discussed above. The procedure adopted was an enhancement of Mills' doctoral research and involved fieldwalking combined with GPS survey to identify and map modern land cover. Experience and understanding of the landscape gained through previous SRAP and doctoral fieldwork considerably aided this approach; it was still, however, a very time-consuming process. During a four-week period a 10 x 10km study area was mapped and attributed to a land cover type. While the approach provided good resolution for this small area, without significant additional financial and time investment, it would not be practical to follow this procedure over a larger area. Figure 4 provides detail of the proto HLC mapping produced in 2004.

The practical solution to this, as discussed above, is to use and adapt the already available CORINE data set. CORINE 2006 raster data for the Teleorman Valley study area has been acquired and input to the existing SRAP GIS (Figure 5). To assess the reliability of the CORINE land cover mapping and if the resolution is sufficiently high to be of use for HLC purposes, this data set is now being compared in the GIS with aerial photography of the study area and existing landscape mapping produced as part of SRAP. This can be further refined, and the GIS updated accordingly, following future ground truthing fieldwork in the Teleorman Valley.

The mapping completed thus far in the Teleorman Valley requires refinement based on further fieldwork to identify and survey all land cover types in the study area and GIS-based enhancement to include supporting attribute data. While not qualifying as a fully operational HLC at this stage, the work completed to date provides a valuable resource for further understanding the distribution of prehistoric archaeology, and the influence of river dynamics and modern land use on the location and preservation of archaeological and palaeo-environmental data. Furthermore, the improving capabilities and availability of digital applications such as GIS and Earth browsers (e.g. Google Earth), provide new opportunities to disseminate the ideas and outputs of archaeological and landscape research, including HLC, more widely to interested audiences. Commitment to the

accessibility of archaeological and other forms of landscape research in the Teleorman Valley lie at the heart of the collaboration developed as part of the Art-Landscape Transformations Project (Bailey and Mills forthcoming; Mills forthcoming).

A better understanding and mapping of the interplay between Holocene river dynamics, modern land use and the prehistoric archaeological record has been an important output of the research to date in the Teleorman Valley (see also Macklin this volume). This kind of research, to which HLC mapping can provide a valuable input, needs to be further extended within the Lower Danube area to better identify and interpret spatial patterning of prehistoric (and later) archaeology. Acquiring the necessary resources and expertise for such research will require considerable collaboration between individuals and institutions in the Lower Danube area and further afield within Europe. As the success of the conference in Alexandria in November 2010 and the contributions to this volume demonstrate, the willingness for this kind of collaboration is very much present and enthusiastic.

Conclusions

Historic Landscape Characterisation provides a set of guiding principles and flexible methodologies for studying and representing (pre)historic development and surviving features in the present day landscape. By emphasising the importance and value of the historic dimension of landscape, and through integration with the initiatives of the European Landscape Convention, HLC provides a valuable contribution towards the protection, management and planning of the European landscape. To date HLC has been successfully applied and developed in a number of European countries including Denmark, Ireland, Germany, the Netherlands, Latvia and the UK. The benefits of HLC are many including: identifying where more research is required and developing new research agendas; better understanding the archaeological potential of the landscape; refining understanding of spatial distribution and patterning in the archaeological record; and providing new ways to disseminate archaeological and historic research to a wide range of interested audiences. With digital data sets and software and hardware more readily available and the fostering of stronger institutional collaborations in the Lower Danube area, the resource implications for applying HLC and related research are not insurmountable. By introducing the principles, methods and applications of HLC, and preliminary research in the Teleorman Valley, it is hoped the potential of HLC will be recognised and similar approaches adopted more widely in the Lower Danube area.

Acknowledgements

The author greatly acknowledges the support and assistance of staff at the Muzeul Judeţean Teleorman and team members of the Southern Romania Archaeological Project. For support, advice and fruitful discussions on HLC I would like to thank the following: Peter Herring, Bryn Tapper and Nick Johnson (Historic Environment Service, Cornwall County Council); and John Schofield and Graham Fairclough (English Heritage).

Bibliography

Aldred, O. and Fairclough, G. (2003) *Historic Landscape Characterisation: taking stock of the method. The national HLC review 2002*. London: English Heritage. Available at: http://www.english-heritage.org.uk/publications/hlc-taking-stock-of-the-method/ [Accessed 22/10/2010].

Bailey, D.W., Howard, A., Macklin, M.V., Andreescu, R. and Mills, S. (2003) 'Preservation and prospection of alluvial archaeological resources in the southern Balkans: a case study from the Teleorman river valley, southern Romania', in A. Howard, M. Macklin and D. Passmore (eds.) *Alluvial archaeology in Europe*, pp. 239-49. Lisse: A. A. Balkema.

Bailey, D.W. and Mills S. (forthcoming) 'The Măgura Intervention: the contemporary past in a Romanian village', in G. Velho (ed.), *Art-Landscape Transformations*.

Bell, S. (1999) *Tranquillity mapping as an aid to forest planning*. http://www.forestry.gov.uk/website/PDF.nsf/pdf/fcin16.pdf/$FILE/fcin16.pdf [Accessed 22/10/2010].

Bloemers, J.H.F. (2002) 'Past- and future-oriented archaeology: protecting and developing the archaeological-historical landscape in the Netherlands', in G. Fairclough and S. Rippon (eds.) *Europe's cultural landscape: archaeologists and the management of change*, pp. 89-96. Brussels: Europae Archaeologiae Consilium.

Campaign to Protect Rural England. *Tranquillity mapping*. http://www.cpre.org.uk/campaigns/landscape-and-beauty/tranquil-areas/index.htm [Accessed 22/10/2010].

cIMeC (2006) *Atlasul Etnografic Român on-line*. http://www.cimec.ro/AER/ [Accessed 22/10/2010].

—— (2011a) *Mapserver for the National Cultural Heritage*. http://map.cimec.ro/indexEn.htm [Accessed 21/01/2011].

—— (2011b) *National Archaeological Record of Romania*. http://ran.cimec.ro/ [Accessed 21/01/2011].

Clark, J., Darlington, J. and Fairclough, G. (2003) *Pathways to Europe's landscape*. Heide: EPCL. Available at: http://www.english-heritage.org.uk/publications/pathways-to-europes-landscape/ [Accessed 22/10/2010].

—— (2004) *Using Historic Landscape Characterisation*. London: English Heritage and Lancashire County Council. Available at: http://www.english-heritage.org.uk/publications/using-historic-landscape-characterisation/ [Accessed 22/10/2010].

Cornish Mining World Heritage Site Bid. http://www.cornish-mining.org.uk/ [Accessed 22/10/2010].

Cornwall & Scilly Urban Survey. http://www.historic-cornwall.org.uk/ [Accessed 22/10/2010].

Council of Europe. *European Landscape Convention Homepage*. http://www.coe.int/t/dg4/cultureheritage/heritage/Landscape/default_en.asp [Accessed 22/10/2010].

Council of Europe. *European Landscape Convention, Florence, European Treaty series No. 176.* http://conventions.coe.int/treaty/EN/treaties/html/176.htm [Accessed 22/10/2010].

Council of Europe (2009) *Landscape and rural heritage. Sixth meeting of the Workshops of the Council of Europe for the implementation of the European Landscape Convention, Sibiu, Romania, 20-21 September 2007*. Strasbourg: Council of Europe Publishing. Available at: http://www.coe.int/t/dg4/cultureheritage/heritage/Landscape/ReunionAteliers/ATEP-88.pdf [Accessed 22/10/2010].

DEFRA *Noise mapping England*. http://services.defra.gov.uk/wps/portal/noise [Accessed 22/10/2010].

Déjeant-Pons, M. (2002) 'The European Landscape Convention, Florence', in G. Fairclough and S. Rippon (eds.) *Europe's cultural landscape: archaeologists and the management of change*, 13-24. Brussels: Europae Archaeologiae Consilium.

English Heritage. *Historic Landscape Character*. http://www.english-heritage.org.uk/professional/research/landscapes-and-areas/characterisation/historic-landscape-character/ [Accessed 22/10/2010].

European Environment Agency (1999) *CORINE land Cover: a key database for European integrated environmental assessment*. Luxembourg: Office for Official Publications of the European Communities. Available at: http://etc-lusi.eionet.europa.eu/CLC2000/docs/publications/corinescreen.pdf [Accessed 30/10/2010].

European Environment Agency. *CORINE land cover 1990, 2000, 2006 datasets*. Available at http://www.eea.europa.eu/data-and-maps/data#c5=all&c11=&c17=&c0=5 [Accessed 30/10/2010].

European Commission. *Institute for Environment and Sustainability: data portals*. http://ies.jrc.ec.europa.eu/index.php?page=data-portals [Accessed 21/01/2010].

European Commission. *European Soil Portal*. http://eusoils.jrc.ec.europa.eu/ [Accessed 21/01/2010].

European Union. *European Pathways to Cultural Landscape*. http://www.pcl-eu.de/ [Accessed 22/10/2010].

European Parliament. *Environmental Noise Directive 2002/49/*EC. http://ec.europa.eu/environment/noise/directive.htm [Accessed 22/10/2010].

Fairclough, G. (2001) 'Boundless horizons: Historic Landscape Characterisation' *Conservation Bulletin* 40, 23-26. Available at: http://www.english-heritage.org.uk/publications/boundless-horizons-historic-landscape-characterisation/boudlesshorizons.pdf [Accessed 29/10/2010].

—— (2002a) 'Historic Landscape Characterisation: template project design. London: English Heritage'. Available at: http://www.english-heritage.org.uk/publications/hlc-template-project-design/ [Accessed 29/10/2010].

—— (2002b) 'Archaeologists and the European Landscape Convention', in G. Fairclough and S. Rippon (eds.) *Europe's cultural landscape: archaeologists and the management of change*, pp. 25-37. Brussels: Europae Archaeologiae Consilium.

Fairclough, G., Lambrick, G. and McNab, A. (1999) *Yesterday's world, tomorrow's landscape: the English Heritage Historic Landscape Project 1992-94.* London: English Heritage.

Fairclough, G. and Rippon, S. (eds.) (2002) *Europe's cultural landscape: archaeologists and the management of change.* Brussels: Europae Archaeologiae Consilium.

Ghinoiu, I. (2009) 'The classification of ethnographic landscapes, an instrument for the identification of material and immaterial rural patrimony - Case study - Dobrogea', in Council of Europe, *Landscape and rural heritage. Sixth meeting of the Workshops of the Council of Europe for the implementation of the European Landscape Convention, Sibiu, Romania, 20-21 September 2007*, pp. 72- 6, Strasbourg: Council of Europe Publishing.

Herring, P. (1998) *Cornwall's historic landscape. Presenting a method of historic landscape assessment*. Truro: Cornwall County Council.

—— (1999) 'Historic landscape characterisation in Cornwall', in G. Fairclough, G. Lambrick and A. McNab, *Yesterday's world, tomorrow's landscape,* pp. 77-83, London: English Heritage.

Historic Environment Service, Cornwall County Council. *Historic Landscape Character*. http://www.cornwall.gov.uk/default.aspx?page=22352 [Accessed 22/10/2010].

Howard, A.J., Macklin, M.V., Bailey, D.W., Mills, S. and Andreescu, R. (2004) 'Late Glacial and Holocene River Development in the Teleorman Valley on the southern Romanian Plain', *Journal of Quaternary Science* 19(3): 271-80.

Kleeschulte, S. and Büttner, G. (2006) 'European land cover mapping - the CORINE experience', in J. H. Smith (ed.), *North American Land Cover Summit, AAG special issue*, pp. 31-44. Washington, DC: Associateion of American Geographers. Available at: http://www.aag.org/galleries/nalcs/CH4.pdf [Accessed 30/10/2010].

Lancashire County Council (2000) *A landscape strategy for Lancashire – Landscape Character Assessment*. Preston: Lancashire County Council. Available at: http://www.lancashire.gov.uk/environment/landscape/landscapecharacass/cover.asp [Accessed 07/01/2011].

Landscape Character Network. http://www.landscapecharacter.org.uk/ [Accessed 21/01/2011].

Mills, S. (2001) 'The SRAP GIS project', in D.W. Bailey, R. Andreescu, S. Mills and S. Trick (eds.) *Southern Romania Archaeological Project: second preliminary report*, pp. 29-38, Cardiff Studies in Archaeology 20. Cardiff: Cardiff School of History and Archaeology, Cardiff University.

—— (2005a) *Applying auditory archaeology to Historic Landscape Characterisation: a report produced for English Heritage*. Cardiff: Cardiff School of History and Archaeology, Cardiff University. Available at: http://www.cardiff.ac.uk/hisar/people/sm/aa_hlc/ [Accessed 22/10/2010].

—— (2005b) 'Sensing the place: sounds and landscape archaeology', in D.W. Bailey, A. Whittle and V. Cummings (eds.) *(un)settling the Neolithic*, pp. 79-89, Oxford: Oxbow.

—— (2009) 'High-resolution study and raster interpolation of early Neolithic pit features at Măgura-Buduiasca, Teleorman County, southern Romania', *Buletinul Muzeului Judeţean Teleorman. Seria Arheologie* 1: 55-66.

—— (ed.) (forthcoming) *Interventions: Măgura past & present*. Bucureşti: Renaissance.

Rippon, S. (2004) *Historic landscape analysis: deciphering the countryside*. York: Council for British Archaeology.

Turner, S. (2005) *Devon Historic Landscape Characterisation*. Exeter: Devon County Council/English Heritage. Available at: http://www.devon.gov.uk/landscape-characterisation [Accessed 07/01/2011].

UNISCAPE. *European network of universities for the implementation of the European Landscape Convention*. http://www.uniscape.eu/ [Accessed 22/10/2010].

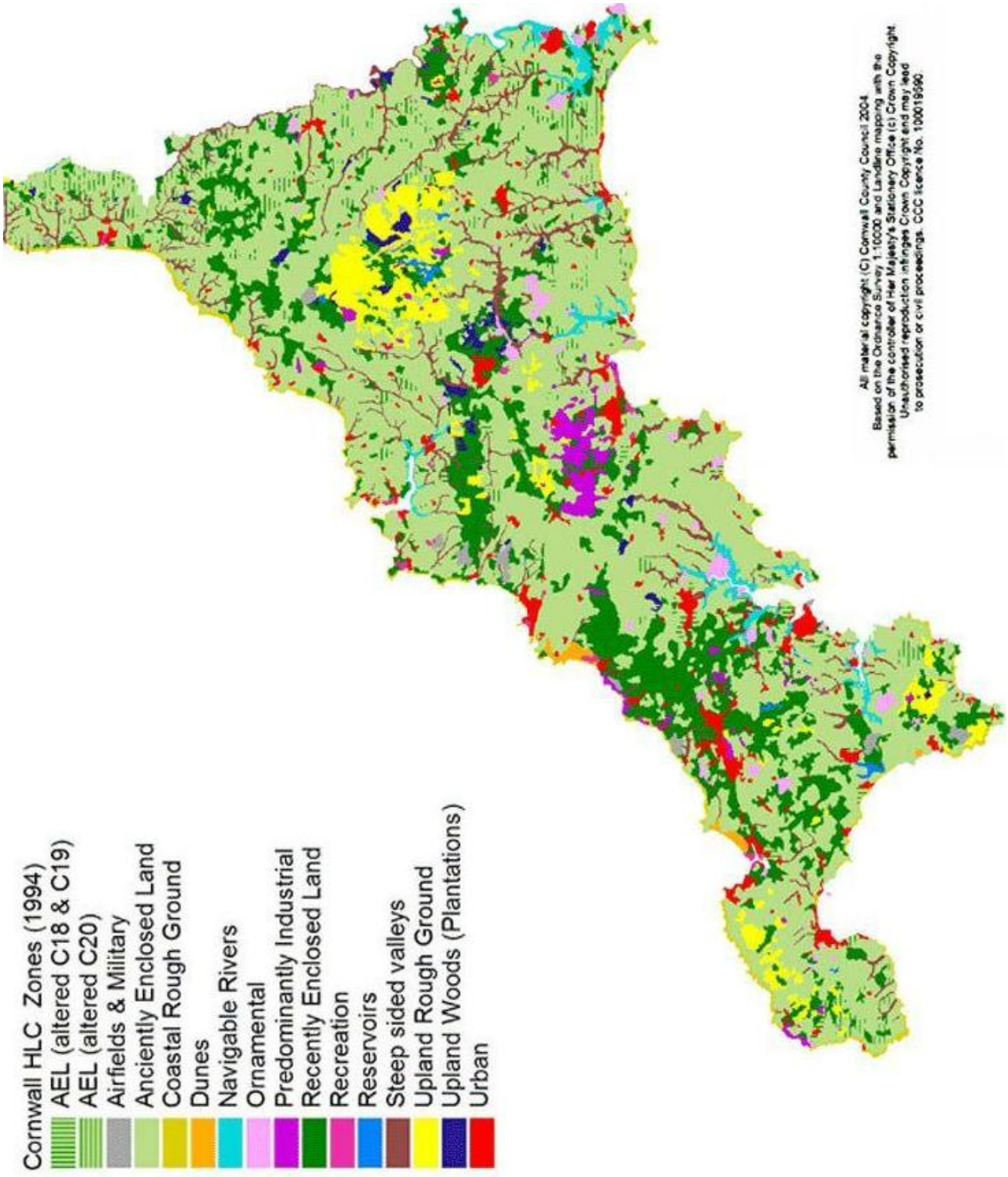

Figure 1. HLC mapping in Cornwall (source and copyright: Historic Environment Service, Cornwall County Council).

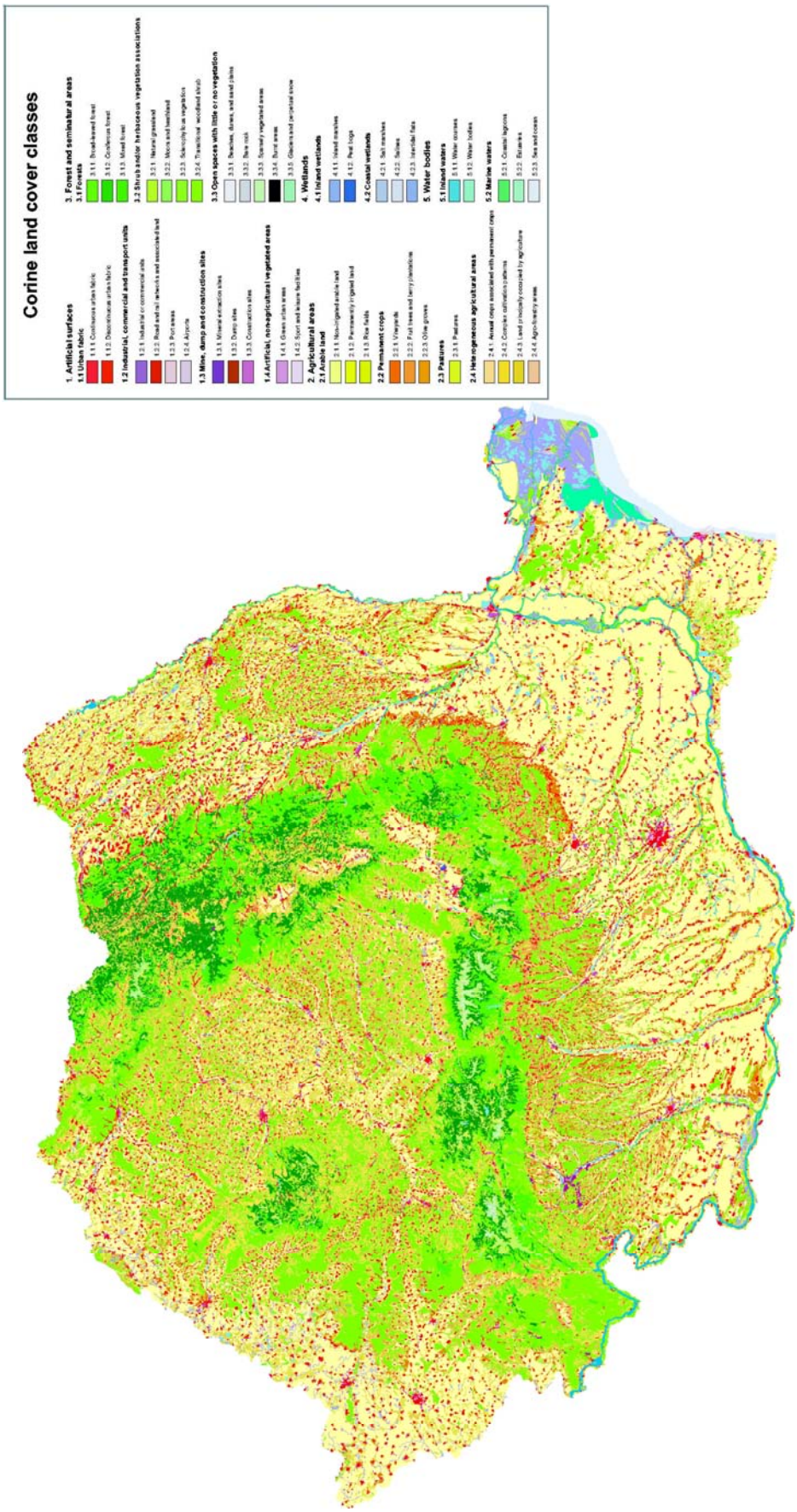

Figure 2. CORINE land cover 2000 mapping for Romania (source and copyright: European Environment Agency).

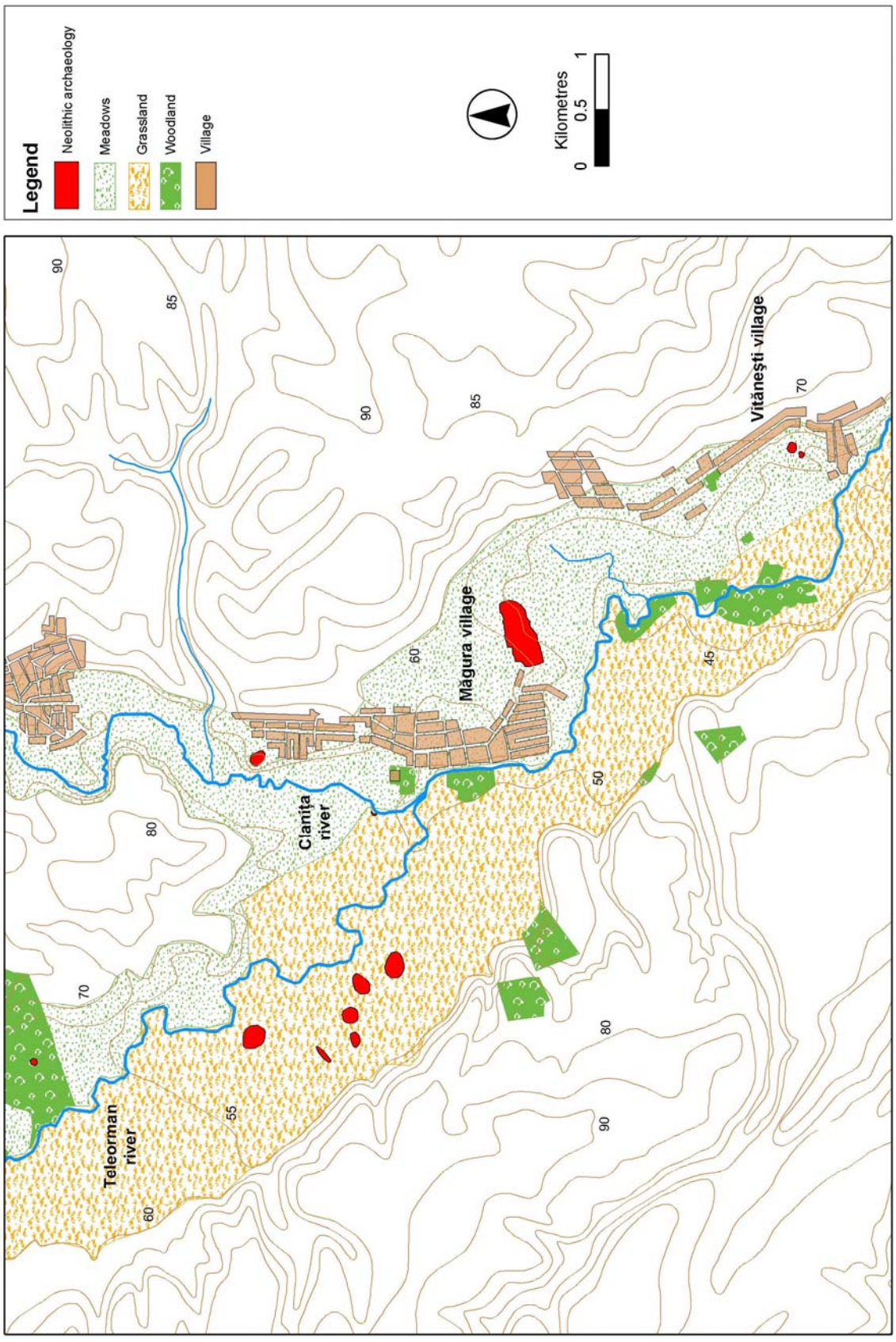

Figure 3. Distribution of Neolithic archaeology and modern land cover in the Teleorman Valley study area (source and copyright: SRAP and Mills).

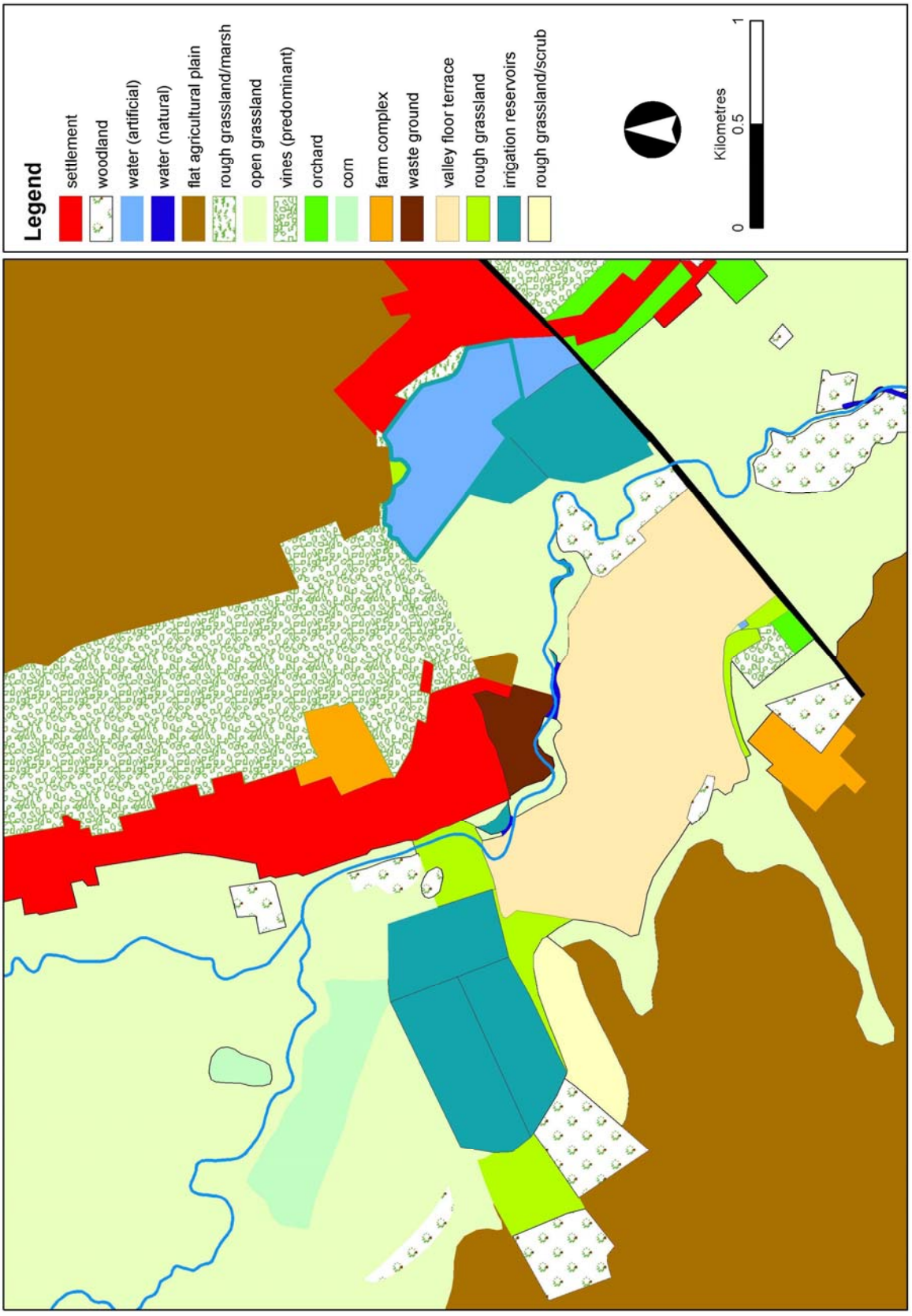

Figure 4. Detail of the proto HLC mapping centred on Măgura produced in 2004 (source and copyright: SRAP, Mills and Tapper).

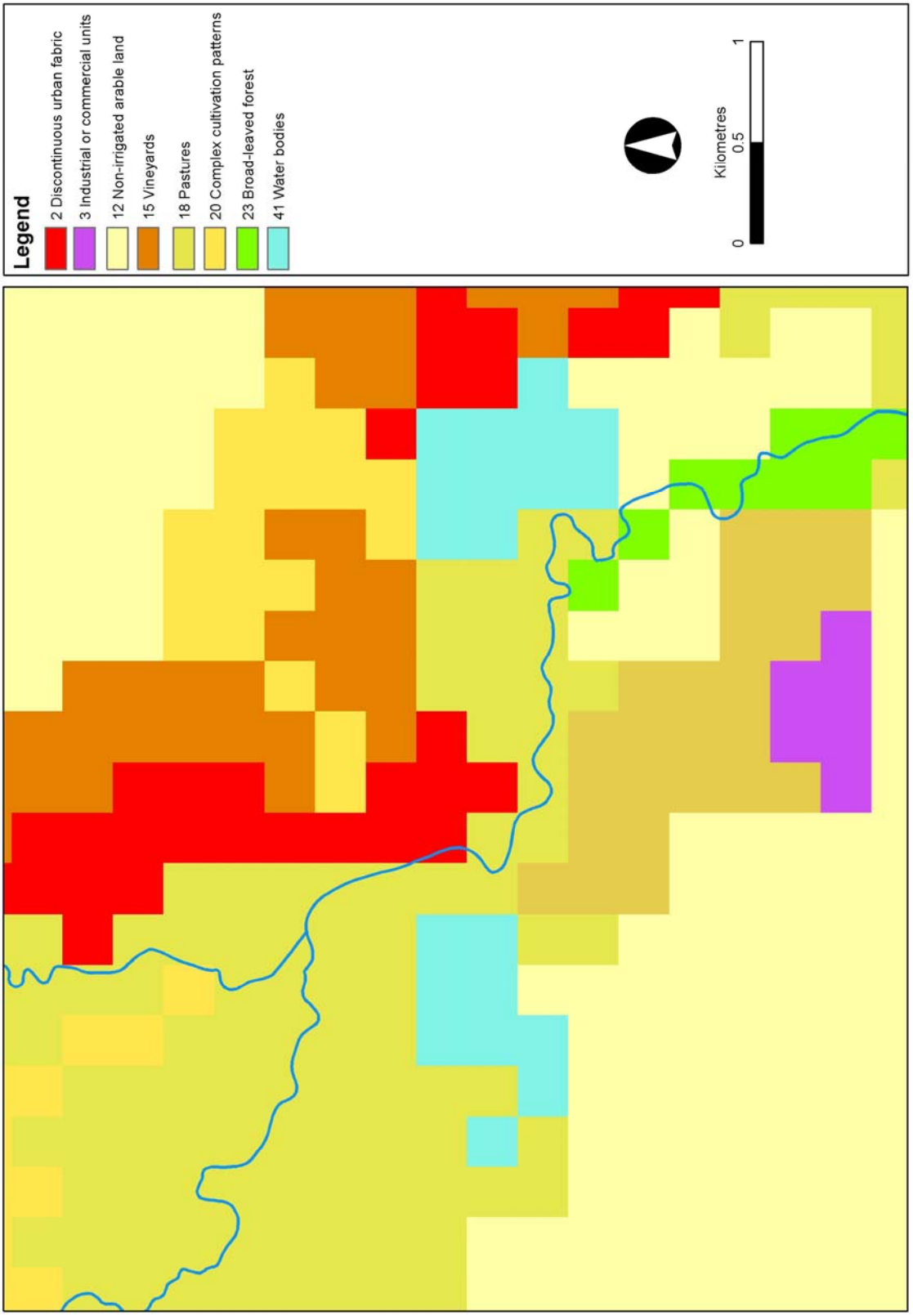

Figure 5. CORINE 2006 raster data centred on Măgura in the Teleorman Valley study area (source and copyright: European Environment Agency and SRAP).

Contributors: Sorin Ailincăi, Radian-Romus Andreescu, Douglass W. Bailey, Adrian Bălăşescu, Amy Bogaard, Albane Burens, Glicherie Caraivan, Laurent Carozza, Jean-Michel Carozza, Dimitar Chernakov, Alexandra Comşa, Mihai Ştefan Florea, Georges Ganetzovski, Maria Gurova, Costantin Haită, Andy J. Howard, Cătălin Lazăr, Mark G. Macklin, Boryana Mateva, Florian Mihail, Cristian Micu, Katia Moldoveanu, Alexandru Morintz, Amelia Pannett, Valentin Radu, Ruth A. J. Robinson, Cristian Schuster, Cosmin Ioan Suciu, Cristian Eduard Ştefan, Laurens Thissen, Svetlana Venelinova, Valentina Voinea, Angela Walker

PUBLICAȚIILE MUZEULUI JUDEȚEAN TELEORMAN

ISBN 978-606-8321-01-1