

# The new National Atlas of Hungary – volume Natural Environment

Károly Kocsis<sup>a, \*</sup>, Zsombor Nemerkenyi<sup>a</sup>, László Zentai<sup>b</sup>, Gábor Gercsák<sup>b</sup>

<sup>a</sup> Hungarian Academy of Sciences, Research Centre for Astronomy and Earth Sciences, Geographical Institute, Budapest, Hungary, [karcsikarcsi11@gmail.com](mailto:karcsikarcsi11@gmail.com), [nemerkenyi.zsombor@csfk.mta.hu](mailto:nemerkenyi.zsombor@csfk.mta.hu)

<sup>b</sup> ELTE Eötvös Loránd University, Department of Cartography and Geoinformatics, Budapest, Hungary, [lzentai@caesar.elte.hu](mailto:lzentai@caesar.elte.hu), [gercsak@map.elte.hu](mailto:gercsak@map.elte.hu)

\* Corresponding author

## Abstract:

The new edition of the National Atlas of Hungary will be published in four volumes in Hungarian and in English to present the dynamic spatial structure of nature, society and the economy not merely for Hungary, but wherever the required data are available, for the Carpatho–Pannonian Area. In favour of keeping relations with the broader public and meeting the requirements of the time, the National Atlas – in addition to its impressive printed form – will be published also in digital version (e-MNA) in Hungarian and English. The traditional paper-based edition will cover the most important topics in four volumes (The Hungarian State and its Place in the World; Natural Environment; Society; Economy) and in representative quality. It will serve mainly awareness-raising and information provision rather than academic research. The current volume of the new National Atlas of Hungary (MNA), which is presenting the Natural Environment, is the outcome of wide ranging professional collaboration: 19 editors, 137 authors, 220 map authors, 17 cartographers, and several dozen professional and language proofreaders, translators have made their valuable contributions to it.

**Keywords:** National atlas, Thematic maps, Hungary

## 1. Introduction

In our days, most countries in the world have national atlases as far-reaching national symbols. Still based on scientific research, since the late 1980s the more market-oriented, more mass-consumable atlases have been issued electronically as well as in hard copy. Traditional print atlases have definitely been pushed to the background compared to their electronic versions, which contain almost unlimited amounts of multimedia elements. Electronic atlases have become primary sources and tools of obtaining and analysing regional information.

In 2013 preparations for the new (conventional) edition of the National Atlas of Hungary were started – under the coordination of the Geographical Institute of the Academy's Research Centre for Astronomy and Earth Sciences, enjoying the support of the former president of the Hungarian Academy of Sciences. It is a unique novelty of our aims that the 2018 edition of the National Atlas of Hungary wishes to present the dynamic spatial structure of nature, society and the economy not merely for Hungary, but wherever the required data are available, for the entire Carpathian Basin and its neighbourhood (the Carpatho–Pannonian Area), thus covering a territory of some half a million km<sup>2</sup> and 34 thousand settlements in twelve countries.

The traditional paper-based edition will cover the most important topics in four volumes (Part 1: The Hungarian State and its Place in the World; Part 2: Natural Environment; Part 3: Society; Part 4: Economy) and in

representative quality. It will serve mainly awareness-raising and information provision rather than academic research. Naturally, we know that paper-based volumes, whose production takes a long time, may contain less up-to-date information at the time of their issue, therefore many present-day readers find them less attractive. Nevertheless, future generations will see them as significant records of the period. In contrast, practically up-to-the-minute information and contact with the wider public will be ensured by the digital version (e-MNA) available at [www.nationalatlas.hu](http://www.nationalatlas.hu).

## 2. Antecedents of the National Atlas of Hungary

Hungarian geographers and cartographers have always played a decisive role in developing knowledge about the country and in forming an image of Hungary and the Hungarian nation. After World War I, numerous geographic and cartographic works, including maps and series of maps, were published, mostly in French, English or German. These products presented the catastrophic effects of the Treaty of Trianon (1920) on Hungary and sought to justify a complete or partial restoration of the territorial integrity of the country. However, the first national atlas with a broad range of topics in the modern sense was only published in the second half of the 20th century, in 1967. This was followed by a second edition with much richer content in 1989. The maps, with a few exceptions, concerned only the territory defined by the state boundaries of the Hungarian People's Republic. The editing of this volume was coordinated by the

Geographical Research Institute of the Academy. The Institute, reacting to the rapidly changing social and economic conditions of Hungary's political transition, published five booklets of supplementary pages to the atlas in 1994–1995. These maps were produced in a modern form and using digital technology.

Despite two decades of fundamental economic and social changes, the Republic of Hungary has not yet felt it justified to publish a new national atlas. Meanwhile, national atlases have been published one after the other throughout Europe, from Madrid to Moscow, Paris to Kiev, and Ljubljana to Warsaw. To meet public demand in Hungary, Cartographia Co. published a smaller collection of maps of Hungary in 1999. At the end of 2009 and in mid-2011, the *Academy* and the *Geographical Research Institute* of the Academy each published a small atlas (*Hungary in Maps*) using their own financial resources. However, the two atlases are no substitutes for a modern (printed and digital) Hungarian national atlas.

The following contains short descriptions of Hungarian national atlases published in the past and of those thematic atlases that are considered their forerunners; they are all published in full as far as possible.

### **2.1. Joseph CHAVANNE: Physikalisch-Statistischer Hand-Atlas von Oesterreich-Ungarn. Hölzel, Wien. 1877**

The atlas followed by a few years the publication of its German model (Andree, R. – Peschel, O.: *Physikalisch-Statistischer Atlas des Deutschen Reichs*, Velhagen-Klasing, Bielefeld-Leipzig, 1878). This thematic atlas (32.5 x 49 cm in size) was first published in booklets and on sheets respectively between 1882 and 1887, then in a single volume in Vienna in 1887, presenting the physical geographic and social-geographic (“statistical”) aspects of the Austro-Hungarian Monarchy. This atlas, published in German only, contains 50 pages of maps (20 maps at 1:2.5 million and 20 maps at 1:5 million) and 68 pages of explanatory text accompanied by numerous statistical tables). Nearly half of the map pages concern the natural environment, almost a third deal with population, and a seventh with the economy. The rest of the maps present political and administrative subjects. Although this Austro-Hungarian atlas was a pioneer publication in those years, it cannot be considered a national atlas in today's sense in view of its thematic and methodological shortcomings. However, it might be seen as the first milestone in the development of Hungarian national atlases (Hanusz, 1882, 1884, 1885, 1886, 1888).

### **2.2. EDVI ILLÉS Aladár – HALÁSZ Albert (Eds.): La Hongrie économique en cartes – The Economies of Hungary in Maps – Magyarország gazdasági térképekben. Budapest. 1920**

This three-language atlas published between 1919 and December 1920 as *background material for the peace talks in Trianon in 1920* did not meet all the criteria for a national atlas, because it mainly showed the *economy of Hungary only* on the basis of data from the last year of peace (1913). The fourth edition (29 x 20.3 cm) already contained 68 colour maps (at about 1:4.2 million scale) and six graphs (Fodor, 1920).

### **2.3. András RÓNAI (Ed.): Középeurópa Atlasz – Atlas of Central Europe. Államtudományi Intézet – Institute of Political Sciences, Budapest – Balatonfüred. 1945**

This work was edited by András Rónai, director of the *Institute of Political Sciences*, which is regarded as the organizational predecessor of the present Geographical Institute, Research Centre for Astronomy and Earth Sciences of the Hungarian Academy of Sciences. The atlas was published in *Hungarian and English* and it met all the requirements of a national atlas, with one exception: it did not show the territory of a country (Hungary) exclusively, but rather the area of Hungary, the *Carpathian Basin and its broader environment* on 134 colour maps at a scale of ca. 1:6.2 million on 334 pages. The English-language version of the atlas (31.5 x 23 cm in size) contained 171 maps on 367 pages. This masterpiece was originally prepared for the talks on the peace treaty after World War II, but later it was almost destroyed. Its *digital facsimile version* was published in Hungarian and in English on 411 pages by the Society of St. Steven and Püski Publishing House in 1993. The cartography work was mainly undertaken at the *Department of Cartography of Eötvös Loránd University* (Klinghammer, 2008).

### **2.4. RADÓ Sándor (Editor-in-chief): Magyarország Nemzeti Atlasza. Kartográfiai Vállalat, Budapest. 1967 (National Atlas of Hungary, in Hungarian)**

Preparations for the first official national atlas were started in 1959, relying on the recommendations of the Commission on National Atlases of the International Geographical Union. The work was directed by Sándor Radó, editor-in-chief. The atlas (29 x 40.6 cm in size) was published on 112 pages in 1967 with the scientific cooperation of the Hungarian Academy (mainly its Geographical Committee) and the cartographic collaboration of Cartographia Company. The aim of the National Atlas was to support “*economic management and planning*” and develop knowledge about the country. Consequently, the first “cartographic ID” of the People's Republic of Hungary was published in red binding. It had 280 maps in colour (mostly at 1:1 million to 1:2 million scales); almost 60% of the maps showed the *state of the socialist national economy*, a third represented the natural environment, while slightly more than one tenth of the maps dealt with Hungarian society (mainly with population and settlements). (Bernát, Lackó, 1969; Sziládi, 1967)

### **2.5. Márton PÉCSI (Head of the editorial board): Magyarország Nemzeti Atlasza – National Atlas of Hungary. Kartográfiai Vállalat, Budapest. 1989**

In 1983, the Hungarian Academy of Sciences, under the presidency of János Szentágothai, decided to publish a new edition of the National Atlas of Hungary. As in the case of the 1967 edition, the idea was supported by the government and the Ministry of Agriculture and Food. The National Atlas was completed in six years under the direction of Márton Pécsi, head of the editorial board and director of the Geographical Research Institute of the Academy. The National Atlas was prepared in cooperation with 87 (mostly) state institutions and organizations and 183 authors and editors, and it was published in 1989,

shortly before Hungary's democratic transformation. *It is four times as voluminous as the first edition.* The atlas was published in one single volume on 395 pages of 29 x 43 cm. Its bilingual (*Hungarian and English*) edition was an expression of Hungary's opening to the outside world. The *extent of explanatory texts* followed international trends and *significantly increased* compared to the 1967 edition (from eight pages to 100 pages). Due to the size of Hungary, the scale of most of the maps (1:1 million to 1:2 million) did not change. The structure of topics remained almost the same, reflecting the fact that the primary function of the National Atlas was to facilitate socialist regional planning. About 60% of the 763 maps continued to show the condition of the *national economy*, but the ratio of maps dealing with social topics and introductory maps increased slightly (12% and 8% respectively) at the expense of physical geographical maps (21%). When the political climate grew milder in the second half of the 1980s, the acquisition of information became easier. Moreover, it became possible to publish *criticism* of socialist industrialization, agricultural policy and regional economics. The contents of the National Atlas reflect such developments (Bassa, 1989; Pécsi, 1989).

**2.6. Márton PÉCSI (President of the editorial board) Magyarország Nemzeti Atlasza kiegészítő lapjai – National Atlas of Hungary. Supplementary Map Lift-out Series. 1–5. füzet. MTA Földrajztudományi Kutató Intézet, Budapest. 1994–1995**

The fundamental social and economic changes after 1989 and the publication of the data of the 1990 population census inspired the Geographical Research Institute of the Academy to issue *supplementary map sheets* to the National Atlas of Hungary with the purpose of quickly providing society with reliable information. In accordance with *modern international trends*, the editors broke with the tradition of publishing a uniform and large volume. *Opening up to the general public and the education system* expressed a *change in function*, as people were becoming more interested in *problem-oriented subject-matter* (such as ethnic issues, new public administration, demographic problems, international migration, elections, taxation, environmental conflicts). Further, map-making *switched* from traditional techniques to *digital technology* (ArcGIS).

**2.7. PAPP-VÁRY Árpád (Editor-in-chief): Magyarország atlasza. Cartographia, Budapest. 1999 (Atlas of Hungary, in Hungarian)**

This atlas (23.3 x 32.9 cm in size) is much easier to handle than were the former one-volume national atlases. The aim of the publisher was to present, mainly for people involved in higher education, the basic social and economic changes that took place in Hungary after 1989. The atlas has 132 numbered pages, with 106.5 pages of maps and 24.5 pages for an index and a list of settlements. Owing to changes in function and the requirements of the targeted users, the structure of the map pages differed significantly from the 1989 edition of the National Atlas. The ratio of map themes became more balanced: the ratio of economic maps fell from 49% to 23%, while the ratio of introductory general geographic and political-administrative maps increased from 10% to 26%. The scale of most maps was

1:2.5 million. The atlas contained 21 maps of the Carpathian Basin (including 16 physical geographical maps), whereas only three maps had shown this broader area in the 1989 edition of the National Atlas. This fact clearly reflected a major change in attitude.

**2.8. Károly KOCSIS – Ferenc SCHWEITZER (Eds.): Hungary in Maps. Geographical Research Institute, Hungarian Academy of Sciences, Budapest. 2009**

This relatively small-sized atlas (21 x 29.8 cm) gives an overview of the contemporary natural, social and economic state of Hungary *in English for an international readership*. The Geographical Research Institute of the Hungarian Academy of Sciences published it on the twentieth anniversary of the democratic transformation in Hungary, the tenth anniversary of Hungary's accession to NATO, and the fifth anniversary of Hungary's joining the European Union. The publication also formed part of a series of regional atlases on Southeast Europe and Ukraine. The 211-page atlas was made using digital technology, and the ratio of texts and maps was about 2:1. The *topics of nature, economy and society* were given similar weight and importance on the 142 maps. Unlike the former national atlases, this English language “business card” of the country offered new ways of presenting a range of subjects to satisfy domestic and international interest in Hungary. Such topics included ethnicity, politics, urbanization, commerce, telecommunications, and tourism (Bassa, 2009).

**2.9. KOCSIS Károly – SCHWEITZER Ferenc (Eds.): Magyarország térképekben. Geographical Research Institute, Hungarian Academy of Sciences, Budapest. 2011 (Hungary in Maps, in Hungarian)**

This publication is not just the Hungarian version of the atlas published in English in 2009; rather it is an enlarged, updated, revised and multifunctional edition with the same page size (21 x 29.8 cm). With the addition of new chapters (parliamentary elections, talent geography), the number of pages increased to 248, the number of maps to 165, and the number of authors to 38. This handy and comprehensive atlas aimed to give an overview of Hungary in the early years of the third millennium for the average educated person, for people involved in secondary and higher education, and for decision makers at government level. After the publication of the atlas in conventional printed form, the full content of the atlas was placed on the homepage of the Geographical Research Institute of the Hungarian Academy of Sciences, in this way offering fast (and free) information.

**3. Editorial policy for the new edition of the National Atlas of Hungary**

Nearly a quarter of a century following its second edition, in 2013 preparations for the new (conventional) edition of the National Atlas of Hungary were started – again under the coordination of the Geographical Institute of the MTA Research Centre for Astronomy and Earth Sciences (CSFK) of the Hungarian Academy of Sciences.

It is a unique novelty of our aims that the new edition of the National Atlas of Hungary presents the dynamic spatial structure of nature, society and the economy not merely for Hungary, but wherever the required data are available, for

the entire Carpathian Basin and its wider neighbourhood (the Carpatho–Pannonian Area), thus covering a territory of some half a million km<sup>2</sup> and 34 thousand settlements in twelve countries.

It is to be noted that in the National Atlas, we strictly distinguish the terms ‘Pannonian Basin’ and ‘Carpathian Basin’, which are frequently believed to be synonyms. While on the one hand, the Pannonian Basin is a geographical and natural phenomenon, meaning the actual basin between the Alps, the Carpathians and the Dinarides, on the other hand, the Carpathian Basin (without irredentist connotations), frequently used in colloquial Hungarian, covers the historical-cultural homeland, the autochthonous settlement area of Hungarians, in fact, the historical territory of the State.

It has been an additional important objective to compile and publish high-quality geo-informational background material for the governance and for public and higher education. In other words, we intend to make available to large sections of the population scientifically well-established reader-friendly material about Hungary and the Carpathian Basin.

In addition to the conventional (print) version, for the internet-based National Atlas, interactive analysis and searchability will be enabled; in line with contemporary technical expectations, we wish to build an interactive digital national geo-information system and upload the National Atlas content on it. In order to provide foreign readers with authentic information of international standards, in addition to the Hungarian version, it is essential to publish the English translation (with the involvement of native English speakers), as well as the Hungarian original, of the four upcoming volumes of the National Atlas to be produced in the following years and to make them available online.

For the sake of user-friendliness, each chapter of a volume has its own colour, which appears on the margins of pages, in subtitles, as well as in references to non-verbal information. Unlike in strictly academic publications, however in the same way as in other national atlases, the chapters only give the authors’ names. Their particulars (scholarly rank, position, primary employer’s name and town) are specified at the end of each volume (Authors, Bibliography and Sources). Due to the nature of the genre, we do not include any footnotes or references to any literature. Therefore, all the sources for the texts, for compiling figures, the list of further readings, and names of photographers are to be found in the Authors, Bibliography and Sources section on eleven pages. Due to these reasons (and occasionally space limitations), non-verbal sources (i.e. maps, tables, graphs, diagrams and photos) that enrich the topics do not feature the names of their authors or their origins. Titles of these vital components of the National Atlas are included in the lists of figures, tables and pictures, offering help in focused searching.

In the printed version of the National Atlas, two-page maps accompanied by detailed information have a special significance. They are not always placed next to the text they refer to because they have to be on facing pages so that their middle section should be equally readable. In addition to these illustrations, highlighted in the relevant

chapter’s colour, text boxes explaining interesting professional terms, ideas or phenomena (often containing their own graphs and other visuals) add content and help the reader use the National Atlas.

Each of the subsequent volumes will start with a brief chapter called Hungary at a glance, overviewing the country’s particulars. The maps included introduce the administrative division of Hungary in the current year, as well as the general geographical features, i.e. the topography, hydrography and the settlement and transport network of the Carpatho–Pannonian Area.

In the English versions, geographical names (e.g. topographic, hydrographic and settlement names) are given in English in the first place, or when that does not exist, in the given country’s official language. In regions where the proportion of national-ethnic minorities is over 10%, geographical names are given also in the minority language, using ethnonyms both in the maps and in the texts.

Understanding the special significance of the National Atlas, in addition to the staff of the Hungarian Academy of Sciences (MTA), colleagues from Hungarian universities and other organisations and institutions (e.g. the Ministry of Agriculture, the Mining and Geological Survey of Hungary, the Hungarian Meteorological Service, and the General Directorate of Water Management) have made their selfless effort in order to assist this national project.

It is worth noting that the two former Hungarian national atlases were published in characteristic times of the age. The first one (issued in 1967) presented Hungary when the socialist state and economy were consolidated. The second one (produced in 1989) documented Hungary in the last year of the communist state, just before the democratic transition from socialism to market economy, and was ceremoniously presented at the 14th International Cartographic Conference of the ICA held in Budapest. The maps and their accompanying descriptions in the present and forthcoming volumes of the third edition illustrate the modern and market-oriented Hungary in a completely new political and economic environment. It is almost unparalleled that a country has produced three national atlases within just a bit more than fifty years. This fact demonstrates that the Hungarian community of cartographers, geographers and related sciences has always considered it a national and professional mission to cultivate the image of the country at home and abroad too.

#### **4. National Atlas of Hungary – Natural Environment**

The current 183-page atlas (Figure 1) published in 2018 is Part 2 of a four-volume project, for Part 1 is planned to come out in late 2019. This volume of the National Atlas of Hungary is headed by an introduction to Hungary’s natural environment. It introduces the features of the lithosphere, hydrosphere, atmosphere, biosphere, and environmental protection, as well as nature conservation in Hungary, and whenever possible, in the Carpathian Basin (roughly from 44° to 50° North and 15° to 27° East) to highlight the spatial context of the themes. The equivalents of more than 200 English geographical names as used in



the country concerned are to be found in the List of English and Foreign Place Names at the end of the volume.

The people of Hungary have shown their natural interest in the geography of the neighbouring countries for a century, because a major part of the Carpatho–Pannonian Area was included in the territory of the Kingdom of Hungary for one thousand years. This explains the new editorial policy for the National Atlas, owing to which there are several atlas maps in the thirteen chapters that show and feature a much larger area (including parts of Central and Southeastern Europe) than just that of Hungary within its national borders (Figure 2). This statement is particularly true for the maps in chapters on Geology, Geophysics, Waters (Figure 3), Soils, and Landscapes (Figure 4). Therefore, this volume can also be considered as a kind of regional atlas that concentrates mainly on Hungary. This approach of the editors – without any irredentist overtone – will definitely help the international English speaking readers to see and interpret also the geopolitical position of a small country, Hungary in a broader (global) environment as well as recognize and understand the geographical unity of this region within Central Europe.

Compared to the sections dealing with the natural environment in the 1989 edition, the overall length and number of maps (scales mostly varying between 1:1,000,000 and 1:3,300,000) has doubled, and the proportion of explanatory texts, tables, graphs and pictures has increased from 25% to 50%, while the inclusion of photographs appears as a new feature of the National Atlas. The large-scale case study maps are also an additional value to the atlas. Thanks to this new approach, the number of maps covering the Carpathian Basin (scale 1:1,800,000) has risen to 33, and there are as many as 28 small-scale maps of Europe. While in the 1980s the main themes were centred on waters, geology and the climate, in the current edition the topics are much more balanced. Far more space is given to Hungary's flora and fauna, nature conservation and landscapes. Compared to its predecessors, the synthesizing chapter on natural hazards is completely new.

Finally, the list of chapters is as follows:

- I. Hungary at a glance
- II. Geology
- III. Geophysics
- IV. Relief
- V. Climate
- VI. Waters
- VII. Soils
- VIII. Vegetation
- IX. Animals
- X. Landscapes
- XI. Environmental protection
- XII. Nature conservation
- XIII. Natural hazards

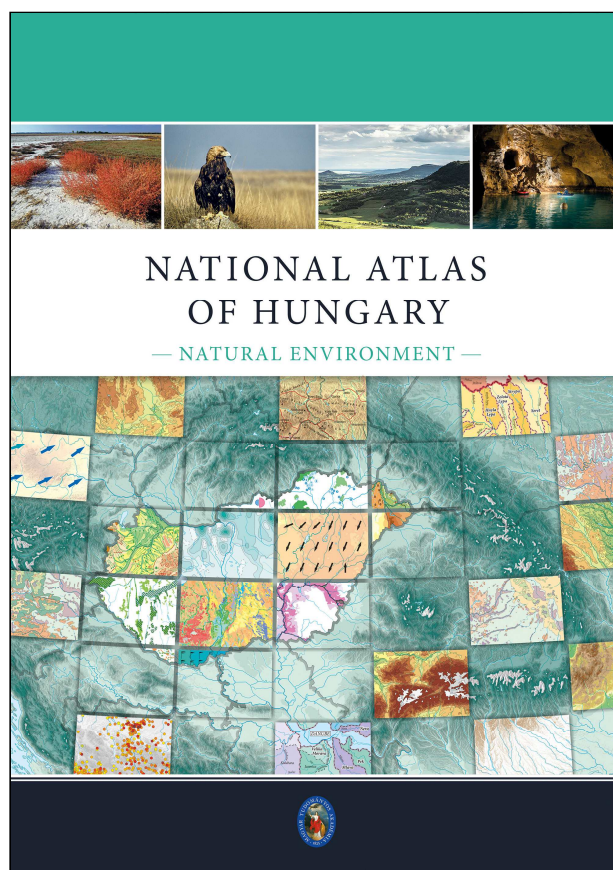


Figure 1. The cover page of the National Atlas of Hungary – Natural Environment (size 31.0 cm x 42.5 cm).

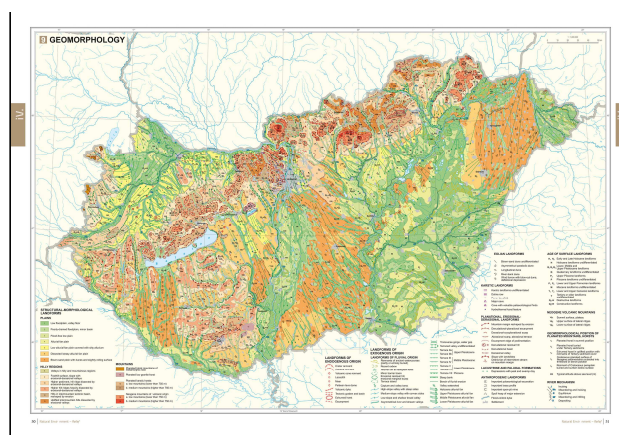


Figure 2. Geomorphology (original scale 1:1,000,000, pp. 50–51).



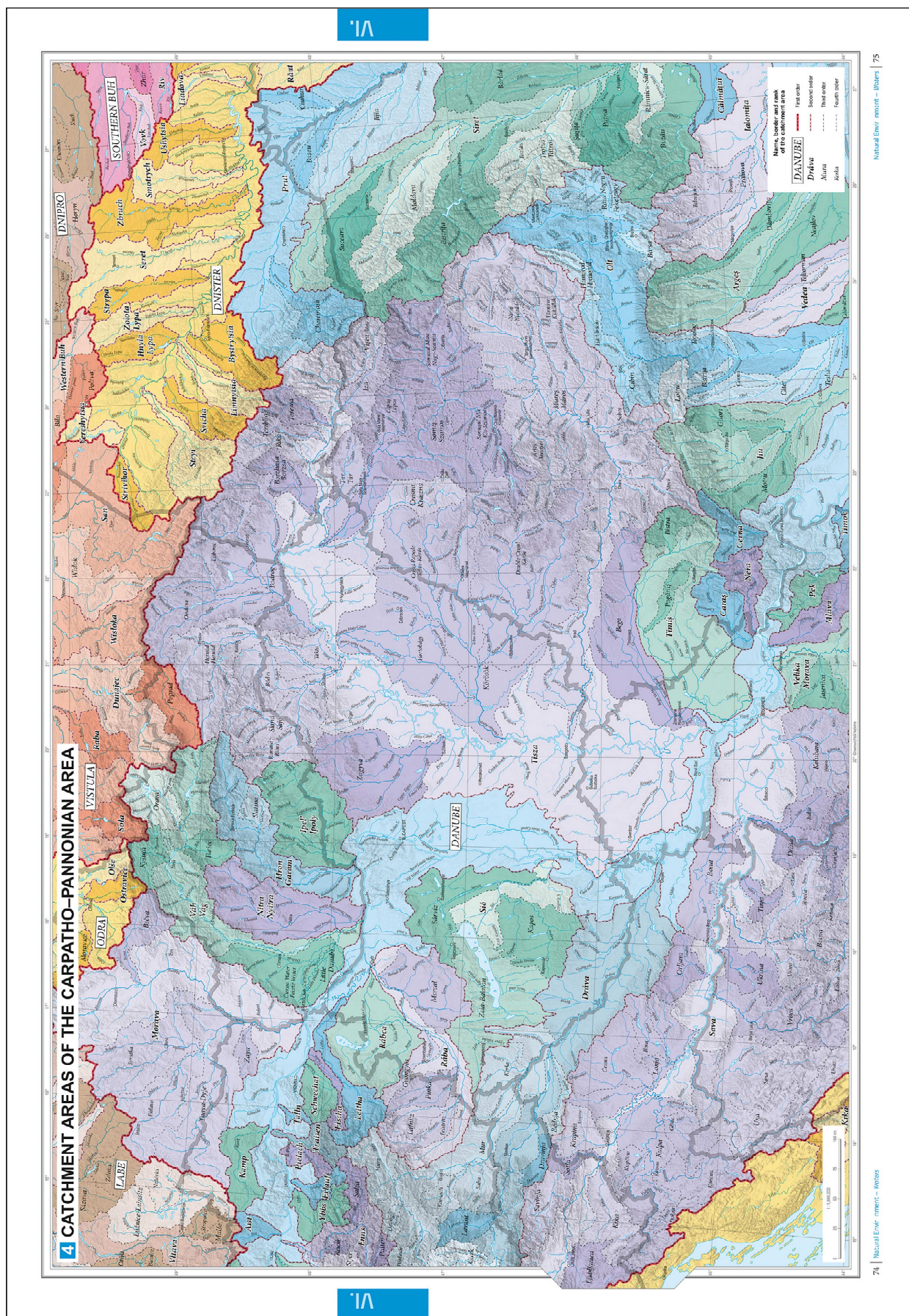


Figure 3. Catchment areas of the Carpatho-Pannonian Area (original scale 1:1,800,000, pp. 74–75).



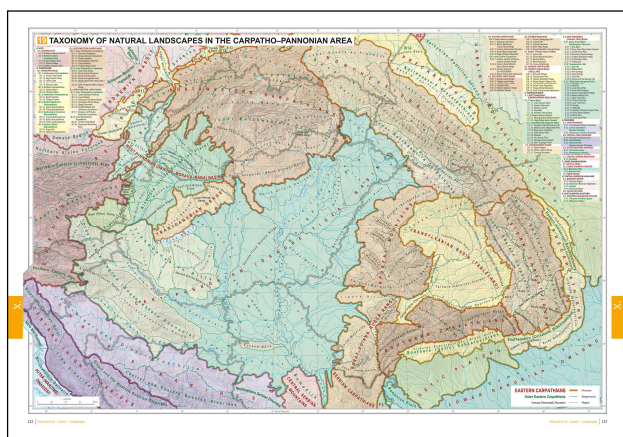


Figure 4. Taxonomy of natural landscapes in the Carpatho-Pannonian Area (original scale 1:1,800,000, pp. 122–123).

## 5. References

- Bassa, L. (1989), Book review, in *Földrajzi Értesítő* (Geographical Bulletin) (in Hungarian) 38/3–4. pp. 456–458.
- Bassa, L. (2009), Book review, in *Földrajzi Közlemények* (Geographical Review) (in Hungarian), 133/3. pp. 364–365.
- Bernát, T., Lackó, L. (1969). Book review, in *Földrajzi Közlemények* (Geographical Review) (in Hungarian), 93/2. pp. 151–161.
- Fodor, F. (1920), Book review, in *Földrajzi Közlemények* (Geographical Review) (in Hungarian), pp. 27–28.
- Hanusz, I. (1882, 1884, 1885, 1886, 1888). Book review, in *Földrajzi Közlemények* (Geographical Review) (in Hungarian), 1882. pp. 408–414, 1884. pp. 322–326, 1885. pp. 366–374, 1886. pp. 398–402, 1888. pp. 83–85.
- Klinghammer, I. (2008). András Rónai: Atlas of Central Europe – a masterpiece of maps, in *Földrajzi Értesítő* (Geographical Bulletin) (in Hungarian), 57/1–2. pp. 71–75.
- Pécsi, M. (1989). Book review, in *Magyar Tudomány* (Hungarian Science) (in Hungarian) 96/7–8. pp. 545–557.
- Sziládi, J. (1967). National Atlas of Hungary, in *Geodézia és Kartográfia*. (Geodesy and Cartography) (in Hungarian) 19/5. 364–367.