

NATURE CONSERVATION PROJECTS IN MILITARY DISTRICTS

Milota KUSTROVÁ

Engineer, PhD,

The Armed Forces Academy of General M. R. Štefánik, Liptovský Mikuláš, Slovakia

Military areas are very valuable sites from the perspective of nature conservation. The article explains the key factors in maintaining high biodiversity in these areas. It discusses the impact of destructive military activities on building and maintaining valuable habitats of European importance and the necessity to preserve these areas for the conservation of natural values for future generations. Extensive reorganization of the armed forces after the Cold War in Europe has resulted in the decommissioning of a large number of military sites from active military use. Ultimately their changed use has a negative impact on biodiversity. This article informs about the existence and importance of a database of military areas in Central and Eastern Europe and the attempt to declare these as protected areas. At the end of the article mentions LIFE+ projects aimed at the protection of nature in military areas, carried out in the countries of Central and Eastern Europe.

Key words: *military training area, military district, biodiversity, conservation.*

1. INTRODUCTION

The term “military areas” covers a wide and heterogeneous range of terrains and infrastructures owned and/or used by the armed forces. Although some have no particular interest for nature conservation, most of the military areas, and especially those used for training and testing, contain significant, even spectacular, amounts of natural and semi natural habitats and landscapes, with corresponding abundances of wildlife. Sometimes they are among the richest and most important sites for biodiversity in their country. Training areas can measure in thousands or tens of thousands of hectares each, but smaller military areas should not be overlooked: between airfield runways or around munitions depots and radar installations, for instance,

ecologically interesting pockets of nature often occur.

Prior to the extensive intensification of the country areas dedicated for military purposes had represented quite large surfaces in the individual countries of Europe, ranging to several thousands of hectares (France 265 000 ha, Great Britain 240 000 ha, Italy 170 000 ha, Germany 682 000 ha, Poland 191 000 ha, Slovakia 91 000 ha). Due to their large size, long-term isolation and specific regime these areas are very interesting regarding nature protection. After the Cold War in 1990 there were many profound changes in the armed forces of European countries and many redundant military areas were decommissioned. Since then their use has changed. Even the existing military training areas are exposed to pressures given

their commercial value. [3]

The armed forces may not originally have had the intention to preserve large tracts of natural heritage, but the fact that de facto they have done so, deserves to be acknowledged.

2. THE UNIQUE CHARACTER OF MILITARY AREAS

At first sight military activities and nature protection do not seem to have something in common. Military areas (military districts, military training areas, shooting ranges, lighthouses, radar stations, etc.) are usually considered destroyed land by laymen. This widespread notion is adopted especially by those who have never been in any military area. Obviously it is not true.

Military activities can be related to contamination of the environment by chemical, nuclear or oil material, with soil, flora and fauna destruction, noise pollution. However, the mentioned negative factors, if ever there, affect only very small areas that are intensively being used for training and are found inside the military training areas (e.g. shooting ranges, target areas). Due to safety reasons, these small areas intensively used for military training are surrounded by larger areas that serve as protection zones where there is practically no military activity. These protection zones are several times larger than areas intensively used for military activities. Thus they are very important in relation to nature protection. Their biological value is several times higher than the value of the surrounding land. Protection zones often serve as important refuge for endangered animal and plant species including habitats and species

of national and European importance.

Military areas have been isolated from surrounding land for decades. It is strictly forbidden for the public to enter military areas, as well as the use of these areas for non-military purposes. Thanks to long-term isolation from the surrounding land, military areas have been spared from human activities with negative impact on nature, such as intense agriculture and forestry, industrial production, mining and quarrying, construction and tourism. Many military areas have high biodiversity due to the fact, that they have never been used for agriculture. These areas have never been fertilised, manured, nor drained. There is a basic ecological principle in nature – the fewer nutrients in soli, the more diverse plant species. Oligotrophic environment (poor in nutrients) is more useful for the existence of microhabitats with specific plant and animal species in comparison to soil and water rich in phosphorus, when the ecosystem becomes uniform and the biodiversity decreases.

Regular disturbance of soil crusts as a result of military activities, which imitates the natural erosion by wind and water, paradoxically supports the preservation of some important habitats essential for the preservation of endangered plant and animal communities. Several rare plant species and invertebrates are dependent on military activities, which help maintain their habitats. Thus, bombing, shellfire, fires for training purposes and manoeuvres of armoured vehicles can imitate natural erosion processes and create conditions for pioneer plant and animal species or prevent natural

succession. Although bare sand and soil are uncommon habitats, they host a variety of rare plants and invertebrates. Tracked vehicles' traces filled with water can become an ideal habitat for amphibians.

Military areas in Europe have maintained relatively good conditions for natural communities, such as different types of water-meadows, natural forests, meadow communities, heathlands, bogs, open sand dunes and others, that can be found in the wild just in limited areas or not at all. As part of Europe's natural heritage, some parts of military areas are included in the system of areas of European significance and SPAs (NATURA 2000), which means the recognition of their natural values and manifestation of interest of the European Union to maintain these sites.

In spite of the fact that military districts' primary purpose is to meet the objectives regarding the national defence tasks, this purpose is not in conflict with the interests of nature conservation. The Armed Forces originally did not plan on preserving large areas of natural heritage, but the fact that they involuntarily did do it, has to be taken into account. At present, we notice the efforts of multifunctional of utilization of military territories not just in Western countries, but also in Central and Eastern Europe. The effort of all NATO and EU member countries that follow certain environmental standards is to include nature conservation into strategic programmes of their department of defence.

3. MILITARY SITES IN CENTRAL AND EASTERN EUROPE

As already mentioned, after the end of Cold War there has been an extensive reorganization

in the armed forces of individual countries of Central and Eastern Europe. There have been significant staff reductions, as well as military machinery, facilities and training grounds reduction.

Many of the areas previously used by the military for decades for their activities have suddenly become unnecessary for the armed forces and have gradually been sold or restored to the original owners or state. Many times these were areas important in terms of nature conservation. Land use of these areas has changed. In most cases this change has had a negative impact on the biodiversity in these former military training areas, which were inaccessible for the public and which were not used for agriculture nor forestry.

Thus declaring these former military areas as protected areas efforts to prevent their privatization are essential for nature conservation and biodiversity.

In this context the German natural foundation David (*Naturstiftung David*) has created a database that offers important information on military areas out of order as well as actively used military training areas in Germany and some countries of Central and Eastern Europe. The data collection was launched in German military training areas in 2001, in Central and Eastern Europe in 2008. Information in the database is regularly updated and in future the database will be expanded and it will include further countries. It should be noted, however, that the quality of the information from the database differs depending on the country and federal republics. Since 2005 90 000 hectares of decommissioned military sites in Germany have been declared national natural landmark. [4, 6]

Table no. 1 Number of military sites in Central and Eastern Europe
Source: Naturstiftung David - The database "nature conservation and military"

Country	All military sites	Sites actively used by the military	Military sites abolished	Military sites partially suspended
Germany	621	200	409	12
Poland	18	12	5	1
Czech Republic	19	11	7	1
Slovakia	9	5	4	0
Hungary	7	6	1	0
Estonia	6	6	0	0
Latvia	1	1	0	0
Lithuania	7	0	2	5

4. CARE OF MILITARY AREAS

Natural biotopes in military training areas are exposed to many threats. The most significant ones include:

- Natural succession of vegetation,
- Lack of reconciliation between the military use and nature conservation,
- Lack of awareness and capacities of military institutions to deal with nature conservation issues.

In Slovakia, unlike other European countries, the protection of nature within the department of defence is still not given adequate attention. The department lacks specialists in the field of nature conservation and also in the field of protection of rare biotopes in the military training areas (MTA), which leads to neglecting or underestimating this issue within the planning and practical realization of military activities. On the other hand the Armed Forces (AF) of the Slovak Republic (SR) do not hinder the cooperation in the field of nature conservation with non-governmental organizations. The proof is the cooperation of AF of SR within the successful realization of projects of the European Committee, especially focused on environment, within the

programme LIFE nature and LIFE+, in which Slovakia has been participating since 2002. Similar projects have been performed also in other countries of Central and Eastern Europe (see Table 2).

Table no. 2 Overview of projects LIFE+ in MTA in countries of Central and Eastern Europe
Source: HÖNTSCH, K., JOHST, A.: *Military training areas of high nature conservation value in Central and Eastern Europe – first analysis of database and networking process*

Country	Full name of LIFE+ project	Total budget	EU co-financing
Hungary	Restoration and conservation of priority habitats and species in the Eastern Balkan area	2,218,000 €	70 %
	Establishing the background of saving the Hungarian meadows of high conservation value	640,000 €	50 %
	Conservation of Old lands in Hungary	2,150,000 €	60 %
	Conservation of Aquatic habitats in the Carpathian basin	547,000 €	70 %
Slovakia	Restoration and management of Sand Dunes habitats in Záhorská Militária Training Area	1,138,000 €	70 %
	Restoration of wetlands in Záhorská Militária Training Area	812,000 €	50 %
Latvia	Military Training Areas in the Eastern Baltic Sea	1,711,000 €	50 %
	Restoration of biological diversity in military training area and Natura2000 site Aukse	900,000 €	50 %

With Latvia and Hungary, Slovakia appears to be the CEE/SEE country where practical nature restoration and management work within military areas, and the collaboration between defence and environment authorities and NGOs, is most advanced. Thus, these three countries can act as role models and examples.

5. LIFE PROGRAMS IN THE MTA'S OF THE SLOVAK REPUBLIC

Zahorie Military District is the oldest and largest military district in Slovakia and it presently covers an area of 27 650 ha. Zahorie Military District was established in its recent

area in 1950, hence before the large-scale intensification of landscape. Since that time, the entire area has been used predominantly for military purposes. Other human activities have been restricted to the services for the military area only. This very specific land use has resulted in conservation of a unique area of great natural values. Running and still waters and wetlands alternate with dry sand dunes. Chemistry of eolian dunes is extremely acidic, which is reflected in specific soil conditions and vegetation cover. Thanks to extraordinary habitat diversity, there is a high number of species and communities with different ecological requirements present here on a relatively small area. High biological diversity is given also by the location of the area being situated on the edge of the Alpine, Pannonic and Continental biogeographic regions. Forest habitats of various types ranging from fen alder woods to dry pine-oak woods cover more than 72% of the area. 18 habitats of Community Importance and 6 habitats of National Importance have been recorded in the area. Thanks to the unique natural richness of Zahorie Military District, parts of this area have been included in the NATURA 2000 network. At present, ten Sites of Community Importance with a total area of almost 5 000 ha are located in Zahorie Military District, while proposals of other sites have been elaborated. In all Sites of Community Importance within Zahorie Military District their military use is considered as a priority. However, usually this is not in conflict with the interests of nature conservation. Zahorie has been the

scene of two nature restoration and management projects, co-financed by EU-LIFE. [1,2]

5.1. PROJECT 'RESTORATION OF THE WETLANDS OF ZAHORIE LOWLAND'

The first one in terms of its scope and lasting from 2005 to 2009, the project 'Restoration of the Wetlands of Zahorie Lowland' (WETREST, LIFE05 NAT/SK/000112) submitted by the State Nature Conservancy of the Slovak Republic was supported under the LIFE NATURE Program of the European Commission. The main project objective was to contribute to the development of NATURA 2000 network in Zahorie Lowland through the conservation, restoration and overall enhancement of important wetland habitats and species. The following activities were carried out as a part of the project implementation:

- Elaboration and implementation of Management Plans and Restoration Projects for 8 most significant wetlands - proposed Sites of Community Importance (4 of them are situated within Zahorie Military District),
- Elaboration of amendments to the forest management plans so that they are in compliance with the requirements of nature conservation,
- Implementation of specific restoration and management measures - restoration of the water regime of wetlands (blocking and backfilling the drainage ditches, restoration of small streams) and improvement of habitat conditions required by the most threatened plant and animal species,
- Construction of the fish bypass on Rudava River near Veľké Leváre community in order to enable

fish migration that has been obstructed by the existing weir, Restoration of species-rich lowland hay meadows along Rudava River (tree and bush cutting, mowing),

- Education and training of project personnel, including excursions, seminars and work - shops for staff of partner organizations participating in the project,

- Raising public awareness on wetland conservation and restoration through the project presentation in media, publishing information and education materials, organizing lectures and excursions for general public and installing information panels at the project sites.

All these actions dealt with sites that were not directly used for military training, but lay within the buffer zone around the exercise areas. [8]

5.2. THE 'RESTORATION AND MANAGEMENT OF SAND DUNES HABITATS IN ZÁHORIE MTA' PROJECT

At present, the rare habitats on the shooting ranges of the Zahorie Military Training Area are threatened by tree overgrowth, especially Scots Pine and Black Locust. Such overgrowing results in serious changes in the structure of these habitats and furthermore decreases the diversity of their unique flora and fauna. The second project does however deal directly with land used for military training and exercises. Therefore, since 2006 to 2011 the Military Technical and Testing Institute Zahorie, in cooperation with the State Nature Conservation of the Slovak Republic and the Regional Association for Nature Conservation

and Sustainable Development (BROZ), implemented the project 'Restoration and Management of Sand Dunes Habitats in Zahorie Military Training Area' (ZAHORIE SANDS, LIFE06NAT/SK/000115). The main objective of the project is to contribute to the development of the European network of protected areas NATURA 2000 in the Zahorie Military Training Area, especially through the enhanced conservation of the sand dunes and dry heaths habitats, their restoration and improvement of the living conditions for their characteristic species. Project area is formed by three Sites of Community Importance (SCI Bežnisko, SCI Kotlina and SCI Šranecké piesky). All three SCIs are actively used as shooting ranges and located in Zahorie MTA.

The following activities have been performed as a part of project implementation:

- Elaboration and testing of new methods and approaches to the habitat management in military areas to reconcile Natura 2000 conservation requirements with their military use;

- Elaboration and implementation of comprehensive Management Plans for 3 Sites of Community Importance (SCI Bežnisko, SCI Kotlina and SCI Šranecké piesky);

- Implementation of specific restoration and management measures and improvement of habitat conditions for the most threatened plant and animal species at the total area almost 500 ha;

- Favorable conservation status of the habitats and species of Community interest was reached at all 3 project sites;

- Education and training of project personnel, including excursions, seminars and workshops for staff of partner organizations participating in the project;

- Raising awareness of military personnel on nature conservation topics and improvement of cooperation between military and nature conservation institutions on nature conservation management in Zahorie MTA and other military areas in Slovakia;

- Raising public awareness on nature conservation in military areas and other project issues through project presentation in the media, publishing information and education materials, organizing lecture and excursions and installing information panels at project sites.

6. CONCLUSION

The long-term specific regime in the military areas has abruptly contributed to the rise of areas of high natural value. Biodiversity in military training areas is several times greater than in surrounding areas. This fact has to be taken into account and we must make every effort to ensure that the status of these areas is preserved. Many of the military training areas have been abolished and their use has been radically changed. The change has brought along also negative effects on nature in form of biodiversity reduction. It is important to learn from these experiences and when abolishing such military areas we should seek an appropriate form of area protection. [9]

European Committee supports and co-finances environmentally oriented projects also in military

environment with the aim to ensure that the situation of biotopes and species significant for Europe does not worsen. In 2004 the Slovak government approved the National list of proposed sites of Community Importance. Many of the proposed and chosen areas are in military districts or former military districts and have been included in the system of NATURA 2000, whose goal is to preserve the most precious natural biotopes and most endangered plants and animals.

The cooperation of the department of defense, state institutions and non-governmental organizations within the nature protection in the military training areas is now common practice in almost all developed countries. Learning about the natural values of military areas and understanding the importance of their protection is the best way to protect nature effectively, in the long-term and preserve it for the next generations. Rare biotopes and species of community importance can be preserved in the long term just with good understanding and mutual cooperation of department of defense and department of environmental protection. [5, 7]

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