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Recommendations for Review of the Candidate Emerald Sites in Armenia

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Acronyms and Abbreviations

EU4Environment	The European Union for Environment
IBA	Important Bird Area
MoE	Ministry of Environment
NAP	National Action Plan
OECD	Organisation for Economic Co-operation and Development
PBA	Prime Butterfly Area
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization

Summary - The Emerald Network Optimization Process in Armenia

An immediate challenge identified by the Ministry of Environment (MoE), is to prepare a revised Emerald Network database for Armenia (last database version was as of 2016). This will automatically update the Emerald Barometer indicator values according to phases I, II, and III.

With a view to the above, in 2023, under the European Union for Environment (EU4Environment) Action Program, and after a series of consultations between the working group of local and international experts with the World Bank and the MoE (workshop held on October 13, 2023), the Emerald Network database was completely revised and optimized. It involved many meetings with the MoE and the World Bank team, multiple revisions, and improvements.

The Emerald Network optimization process was based on the current biodiversity information and data that were sufficient for providing population proportions. Nevertheless, biodiversity data concerning the sites requires to be updated, corrected, and completed, for example, for missing population numbers, missing species/habitats location and mapping, and so on, under a specific monitoring program. With a view to the above, a specific monitoring activity is proposed in the recommended National Action Plan (NAP), that is, field studies or existing information review about species and habitats with scientific reserves (that is, missing data).

It should be emphasized that the finalized output presented below is a set of recommendations to the Armenian Government (MoE). It is up to the MoE to finalize and proceed on the Emerald Network database update, after a consultation process is completed. According to the MoE, the current recommendation proposal will be shared with key stakeholders for a broad and open public engagement and opinion reviews.

The final output presented below, includes a revised data set of the target species and habitats per site. Each site is also illustrated with a set of maps of the new and old boundaries (in shp and kmz formats). The current document also provides the necessary scientific justification for each modification, exclusion, or addition that took place.

During the ‘Emerald Network optimization process’, a set of priorities was initially set. The key one was ensuring target species and habitats representation in Armenia. Second, the importance of an area related to the conservation of target species and habitats, either as an entire site or as part of a site. The above priorities were met after completing an overview assessment of populations and conservation areas in Armenia. As a result, existing sites were modified and new areas for conservation also proposed. In addition, existing Emerald site size correction and boundary redesign were applied to all sites (including site reduction for areas with no target object).

The Emerald Network optimization process flow included the following steps:

- Detailed analysis of current situation per site. Identification of missing data related to species and habitats included in Resolutions 4 and 6
- Preliminary assessment of ‘Sufficiency’. Analysis of the representation of species and habitats included in Resolutions 4 and 6 per site

- Database correction/update per site. Changes in the database and site descriptions - updating the lists of target species and habitats included in Resolutions 4 and 6
- Assessment of species populations and habitats—included in Resolutions 4 and 6—in the surrounding area of the proposed sites
- Identification of areas (in the surrounding areas of the sites) where populations of species included in Resolution 6 are represented in significant numbers (minimum at level b - 2–15 percent) and habitats included in Resolution 4 are represented and occupy relatively large areas or are a direct continuation of those on sites already proposed
- Further analysis of the retrieved data
- Allocation of population territories. Identification of new sites
- Mapping of new site boundaries
- Optimization of modified and new site boundaries according to a set of protected area boundary rules and best practices
- Preparation of descriptions of new proposed sites, map design, refining corrections, and changes in database per site.

Regarding site size, a few Emerald sites were disproportionately large and did not adequately cover target species populations and habitats specified in Resolutions 4 and 6 of the Berne Convention. These were reassessed and corrected.

Also, some large sites were separated into smaller sites, excluding in-between settlements, infrastructures, and other business uses. Thus, the new/modified separated sites now have a clear conservation object status.

In many cases, the site borders were redesigned. Such cases are due to the exclusion of settlements, industrial enterprises, mining industries, and agricultural lands with no target object.

At a final stage, site borders were ‘refined’, ensuring ecosystem integrity and boundaries with clear natural or other terrain delineation characteristics, for example, watersheds, rivers, roads, and mountain ranges.

The proposed set consists of 30 Emerald sites, covering 707,739.22 ha (23.8 percent of the national coverage). Proposed Emerald sites partly or fully overlap with 12 forest enterprises (out of 17), 4 national parks, 2 state reserves, and 14 sanctuaries (out of 28), as well as 1 protected landscape and 1 planned sanctuary (Tatev).

Based on the final set, the following site names were either changed or introduced:

- ‘Gnishik’ was changed to ‘Arpa’, as the protected landscape located in this site is also called ‘Arpa’.
- ‘Gorayk’ was changed to ‘Vorotan’, as the area of the new site includes not only ‘Gorayk’ but also the surroundings.
- ‘Urts’ and ‘Yerakh’ sites were changed based on the mountain ranges names, that is, Urts Mountains and Yerakh Mountains.
- Impassable Brushwood is now renamed after the main target plant species ‘Peonia’.
- Two new sites named ‘Teksar’ and ‘Voskepar’ were also added.

With a view to the goals and objectives presented above, a comparative list of the previous and proposed (modified) Emerald sites in Armenia are presented below. In addition, a justification text per site, including the revised target species and habitats lists, has also been prepared.

Comparison Table of Proposed (Modified) and Previous (2016) Emerald Sites

Table 1. List of proposed (modified) Emerald sites in Armenia

Site code	Site name	Area, ha (previous - 2016[1])	Area, ha (proposed)	Area balance and cross-reference (+ / -)	Number of species (previous - 2016[2])	Number of species (proposed)	Number of habitats (previous - 2016[3])	Number of habitats (proposed)	Comments
AM0000001	Khosrov Forest	63,794.70	40,196.81	+ (increase 13.07% for 3 proposed sites together)	Plants - 2 Invertebrate - 3 Reptiles - 2 Birds - 41 Mammals - 11	Plants - 2 Invertebrate - 3 Reptiles - 2 Birds - 40 Mammals - 11	26	19	Site AM0000001 from 2016 has been split into 3 new proposed sites: AM0000001, AM0000024, and AM0000028
AM0000002	Sevan	489,839.78	156,321.48	- (decrease 68.09%)	Plants - 5 Invertebrate - 2 Birds - 77 Mammals - 7	Plants - 4 Invertebrate - 2 Birds - 79 Mammals - 6	32	27	
AM0000003	Khor Virap	6,998.20	349.47	- (decrease 10.7% for 2 proposed sites together)	Plants - 1 Fish - 4 Reptiles - 2 Birds - 89 Mammals - 9	Plants - 1 Reptiles - 2 Birds - 38 Mammals - 9	20	13	Site AM0000003 from 2016 has been split into 2 new proposed sites: AM0000003 and AM0000025
AM0000004	Lake Arpi	56,035.50	25,346.71	- (decrease 54.8%)	Plants - 2 Invertebrate - 1 Fish - 3 Birds - 51 Mammals - 5	Plants - 2 Invertebrate - 1 Fish - 3 Birds - 55 Mammals - 5	19	19	

[1] Since 2016.
[2] Since 2016.
[3] Since 2016.

Site code	Site name	Area, ha (previous - 2016[1])	Area, ha (proposed)	Area balance and cross-reference (+ / -)	Number of species (previous - 2016[2])	Number of species (proposed)	Number of habitats (previous - 2016[3])	Number of habitats (proposed)	Comments
AM0000005	Ijevan	47,593.10	49,499.42	+ (increase 4%)	Plants - 2 Invertebrate - 3 Reptiles - 2 Birds - 24 Mammals - 9	Plants - 2 Invertebrate - 3 Reptiles - 2 Birds - 28 Mammals - 9	32	27	
AM0000006	Jajur	1,711.20	3,057.40	+ (increase 78.7%)	Plants - 3 Invertebrate - 1 Birds - 26 Mammals - 6	Plants - 3 Invertebrate - 1 Birds - 26 Mammals - 6	17	8	
AM0000007	Lori Lakes	1,596.40	3,456.93	+ (increase 116.5%)	Plants - 1 Invertebrate - 3 Birds - 28 Mammals - 4	Plants - 1 Invertebrate - 3 Birds - 30 Mammals - 4	15	14	
AM0000008	Paeonia	274.40	37.54	- (decrease 79.25% for 2 proposed sites)	Plants - 1 Invertebrate - 2 Reptiles - 1 Birds - 21 Mammals - 0	Plants - 1 Invertebrate - 2 Reptiles - 0 Birds - 21 Mammals - 0	8	6	Site AM0000008 from 2016 has been split into 2 new proposed sites: AM0000008 and AM0000026
AM0000009	Jermuk	35,015.00	33,045.29	- (decrease 5.6%)	Plants - 1 Invertebrate - 1 Fish - 3 Birds - 34 Mammals - 14	Plants - 1 Invertebrate - 1 Fish - 3 Birds - 34 Mammals - 14	28	27	
AM0000010	Aragats	9,446.70	21,237.53	+ (increase 124.8%)	Plants - 2 Birds - 17 Mammals - 1	Plants - 2 Birds - 21 Mammals - 3	9	8	
AM0000011	Dilijan	38,634.30	35,323.17	- (decrease 8.6%)	Plants - 2 Invertebrate - 3 Fish - 1 Birds - 42 Mammals - 8	Plants - 2 Invertebrate - 4 Fish - 1 Birds - 41 Mammals - 9	29	29	

Site code	Site name	Area, ha (previous - 2016[1])	Area, ha (proposed)	Area balance and cross-reference (+ / -)	Number of species (previous - 2016[2])	Number of species (proposed)	Number of habitats (previous - 2016[3])	Number of habitats (proposed)	Comments
AM0000012	Arpa	30,300.10	27,187.74	- (decrease 10.3%)	Plants - 2 Invertebrate - 2 Fish - 3 Reptiles - 1 Birds - 37 Mammals - 14	Plants - 2 Invertebrate - 2 Fish - 3 Reptiles - 1 Birds - 37 Mammals - 14	36	36	
AM0000013	Vorotan	4,056.70	3,231.41	- (decrease 20.3%)	Plants - 1 Invertebrate - 0 Birds - 26 Mammals - 4	Plants - 1 Invertebrate - 0 Birds - 38 Mammals - 4	9	7	
AM0000014	Arevik	60,804.70	56,114.08	- (decrease 7.7%)	Plants - 2 Invertebrate - 2 Fish - 4 Reptiles - 2 Birds - 41 Mammals - 14	Plants - 2 Invertebrate - 3 Fish - 4 Reptiles - 2 Birds - 39 Mammals - 14	34	34	
AM0000015	Zangezur	49,066.60	28,899.17	+ (increase 11.8% for 2 proposed sites)	Plants - 3 Invertebrate - 3 Reptiles - 2 Birds - 33 Mammals - 12	Plants - 0 Invertebrate - 2 Reptiles - 0 Birds - 32 Mammals - 11	39	12	Site AM0000015 from 2016 has been split into 2 new proposed sites: AM0000015 and AM0000027
AM0000016	Tatev	14,873.10	12,699.32	- (decrease 14.6%)	Plants - 2 Invertebrate - 2 Fish - 3 Reptiles - 1 Birds - 32 Mammals - 12	Plants - 2 Invertebrate - 2 Fish - 3 Reptiles - 1 Birds - 32 Mammals - 12	26	24	
AM0000017	Metsamor	26,427.30	10,186.12	- (decrease 61.5%)	Fish - 4 Reptiles - 2 Birds - 76 Mammals - 6	Fish - 4 Reptiles - 1 Birds - 76 Mammals - 6	15	18	

Site code	Site name	Area, ha (previous - 2016[1])	Area, ha (proposed)	Area balance and cross-reference (+ / -)	Number of species (previous - 2016[2])	Number of species (proposed)	Number of habitats (previous - 2016[3])	Number of habitats (proposed)	Comments
AM0000018	Khndzoresk	3,425.70	3,456.97	+ (increase 0.9%)	Plants - 1 Invertebrate - 2 Birds - 28 Mammals - 13	Plants - 1 Invertebrate - 2 Birds - 29 Mammals - 13	20	20	
AM0000019	Vanand	8,222.30	20,475.54	+ (increase 149%)	Fish - 4 Reptiles - 2 Birds - 38 Mammals - 4	Fish - 4 Reptiles - 2 Birds - 38 Mammals - 4	13	13	
AM0000020	Akhuryan	8,389.70	7,586.46	- (decrease 9.6%)	Plants - 1 Invertebrate - 1 Fish - 4 Reptiles - 1 Birds - 57 Mammals - 4	Plants - 1 Invertebrate - 1 Fish - 4 Reptiles - 1 Birds - 57 Mammals - 4	7	7	
AM0000021	Rhododendron caucasicus	16,191.10	15,607.00	- (decrease 3.6%)	Plants - 2 Invertebrate - 0 Birds - 22 Mammals - 8	Plants - 2 Invertebrate - 2 Birds - 22 Mammals - 7	14	14	
AM0000022	Arayiler	4,676.70	4,073.72	- (decrease 12.9%)	Plants - 1 Reptiles - 1 Birds - 36 Mammals - 7	Plants - 1 Reptiles - 1 Birds - 37 Mammals - 7	15	15	
AM0000023	Debed	56,346.40	57,360.59	+ (increase 1.8%)	Plants - 2 Invertebrate - 0 Reptiles - 2 Birds - 39 Mammals - 8	Plants - 2 Invertebrate - 3 Reptiles - 2 Birds - 39 Mammals - 8	22	22	
AM0000024	Urts Mountains		19,214.41		—	Plants - 1 Invertebrate - 1 Reptiles - 1 Birds - 38 Mammals - 9	—	11	Former part of Khosrov

Site code	Site name	Area, ha (previous - 2016[1])	Area, ha (proposed)	Area balance and cross-reference (+ / -)	Number of species (previous - 2016[2])	Number of species (proposed)	Number of habitats (previous - 2016[3])	Number of habitats (proposed)	Comments
AM0000025	Armash		5,902.58		—	Fish - 4 Reptiles - 2 Birds - 89 Mammals - 8	—	11	Former part of Khor Virap
AM0000026	Emys orbicularis		18.61		—	Invertebrate - 2 Reptiles - 1 Birds - 21 Mammals - 4	—	6	Former part of impassable brushwood
AM0000027	Shikahogh		25,946.81		—	Plants - 3 Invertebrate - 4 Reptiles - 2 Birds - 33 Mammals - 12	—	37	Former part of Zangezur
AM0000028	Yerakh Mountains		12,720.97		—	Reptiles - 1 Birds - 16 Mammals - 3	—	5	Former part of Khosrov forest
AM0000029	Teksar		11,381.29		—	Plants - 1 Invertebrate -10 Birds - 31 Mammals - 11	—	16	New proposed site
AM0000030	Voskepar		17,804.68		—	Invertebrate - 3 Reptiles - 1 Birds - 25 Mammals - 8	—	10	New proposed site
Total area		1,033,719.68	707,739.22	- (decrease 31.5%)	Plants - 8 Invertebrate - 8 Fish - 4 Reptiles - 3 Birds - 109 Mammals - 16	Plants - 8 Invertebrate - 9[4] Fish - 4 Reptiles - 3 Birds - 109 Mammals - 16	65	64[5]	

[4] 1 species, *Cerambyx cerdo*, added first time.
[5] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

Presentation and Justification of Changes per Emerald Site

AM0000001 'Khosrov forest'

The previous site (2016) is divided into three different new sites (area increase of 13.07 percent for the three proposed sites together), Khosrov Forest, Urts Mountains, and Yerakh Mountains (described separately below). During the redesigning of the site boundaries, specific areas were removed with no target object considered. Such areas are located between these three sites, that is, Khosrov Forest, Urts Mountains and Yerakh Mountains, and include settlements, fields, orchards, and vineyards, as well as areas where geological exploration work will be carried out. In addition, Mount Yeranos with its surroundings has been added to the territory of the state reserve 'Khosrov forest'.

All previously mentioned target species are presented in the three new sites together except *Burhinus oedicnemus*. The following additions are made in the joint list of target species: two bird species *Pterocles orientalis* and *Charadrius alexandrinus* and one mammal species *Myotis blythi*.

All target habitats, except habitat C2.18, are presented in the three new sites together, and additionally two new habitats (E6.2 and F6.8) are added.

The target species and habitats of the new proposed site are presented below.

Number of species included in Resolution 6: 58 (AM000001)

Type	Number of species	Species
Plants	2	*Dactylorhiza chuhensis* and *Echium russicum*
Invertebrate	3	*Callimorpha (Euplagia) quadripunctaria, Cerambyx cerdo*, and *Coenagrion ornatum*
Reptiles	2	*Testudo graeca* and *Mauremys capsica*
Birds	40	*Accipiter brevipes, Aegolius funereus, Aegypius monachus, Alcedo atthis, Anthus campestris, Aquila chrysaetos, Aquila clanga, Aquila heliaca, Aquila nipalensis, Aquila pomarina, Bubo bubo, Bucanetes githagineus, Buteo rufinus, Calandrella brachydactyla, Caprimulgus europaeus, Ciconia ciconia, Circaetus gallicus, Circus aeruginosus, Circus cyaneus, Circus macrourus, Circus pygargus, Coracias garullus, Dendrocopos syriacus, Emberiza hortulana, Falco biarmicus, Falco naumanni, Falco peregrinus, Gypaetus barbatus, Gyps fulvus, Hieraaetus pennatus, Lanius collurio, Lanius minor, Lullula arborea, Luscinia svecica, Melanocorypha calandra, Milvus migrans, Neophron percnopterus, Pernis apivorus, Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	11	*Canis lupus, Capra aegagrus, Lutra lutra, Miniopterus schreibersii, Myotis emarginatus, Panthera pardus, Rhinolophus euryale, Rhinolophus ferrumequinum, Rhinolophus mehelyi, Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 19 (AM000001)

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies

Code	Habitat
C1.3411	Water crowfoot communities in shallow water
C1.4	Permanent dystrophic lakes, ponds, and pools
C2.1A	Mesotrophic vegetation of spring brooks
C2.1B	Eutrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.28	Eutrophic vegetation of fast-flowing streams
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation
D5.2	Beds of large sedges normally without free-standing water
E1.3	Mediterranean xeric grassland
F3.245	Eastern mediterranean deciduous thickets
F5.13	Juniper matorral
F7	Spiny mediterranean heaths
F9.1	Riverine scrub
F9.3	Southern riparian galleries and thickets
G1.11	Riverine willow woodland
G1.3	Mediterranean riparian woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*

AM0000002 'Sevan'

A significant area reduction (decrease of 68.09 percent) is applied during the site boundary redesign since the site area was based on the administrative region boundaries including the entire Lake Sevan Basin (together with the lake itself). Thus, the modified proposal focuses on the actual areas with target objects including the territory of the Sevan National Park, areas on the Sevan and Areguni ridges where juniper woodlands and residual oak forests are represented, as well as areas including the most important rivers above the mouth to cover target habitats in the waterlogged areas.

The site also does not include areas on the Geghama ridge, where the only target species (*Saxifraga hirculus*) grows in the alpine belt. However, the largest population of this species (more than 75 percent) grows on Mount Aragats, and it is covered by site AM0000010 'Aragats'.

Changes are made in the list of target species: From the list of birds, *Marmaronetta angustirostris* is removed (has no regular occurrence in the area), and three new species are added: *Phalacrocorax pygmaeus*, *Porphyrio porphyrio*, and *Tetrax tetrax*. From the list of mammals, *Capra aegagrus* was removed.

From the list of target habitats C1.1, C2.224, C2.25, E1.11, and E1.83[6] were removed.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 92

Type	Number of species	Species
Plants	4	*Dactylorhiza chuhensis, Echium russicum*, *Ligularia sibirica,* and *Ligularia sibirica*
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria* and *Maculinea nausithous*
Birds	79	*Accipiter brevipes, Acrocephalus melanopogon, Aegypius monachus, Alcedo atthis, Anthus campestris, Aquila heliaca, Aquila nipalensis, Aquila pomarina, Ardea purpurea, Ardeola ralloides, Aythya nyroca, Botaurus stellaris, Bubo bubo, Burhinus oedicnemus, Buteo rufinus, Calandrella brachydactyla, Charadrius alexandrinus, Chlidonias hybridus, Chlidonias leucopterus, Chlidonias niger, Circaetus gallicus*, *Circus aeruginosus, Circus cyaneus, Circus macrourus, Circus pygargus, Cygnus bewickii, Cygnus cygnus, Egretta alba, Egretta garzetta, Emberiza hortulana, Falco cherrug, Falco columbarius, Falco naumanni, Falco peregrinus, Falco vespertinus, Ficedula parva, Ficedula semitorquata, Gallinago media, Glareola nordmanni, Glareola pratincola, Grus grus, Gypaetus barbatus, Gyps fulvus, Haliaeetus albicilla, Hieraaetus pennatus, Himantopus himantopus, Ixobrychus minutus, Lanius collurio, Lanius minor, Larus genei, Larus minutus, Limosa lapponica, Luscinia svecica, Melanocorypha calandra, Mergellus albellus, Milvus migrans, Neophron percnopterus, Nycticorax nycticorax, Pandion haliaetus, Pelecanus crispus, Pelecanus onocratulus, Pernis apivorus, Phalacrocorax pygmaeus, Phalaropus lobatus, Philomachus pugnax, Phoenicopterus ruber, Platalea leucorodia, Plegadis falcinellus, Pluvialis apricaria, Porphyrio porphyrio, Porzana porzana, Pyrrhocorax pyrrhocorax, Recurvirostra avosetta, Sterna caspia, Sterna hirundo, Tadorna ferruginea, Tetrax tetrax, Tringa glareola*, and *Xenus cinereus*
Mammals	6	*Canis lupus, Lutra lutra, Lynx lynx, Myotis emarginatus, Ursus arctos*, and *Vormela peregusna*

[6] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

Number of habitats included in Resolution 4: 27

Code	Habitat
C1.25	Submerged carpets of stoneworts in mesotrophic waterbodies
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.33	Rooted submerged vegetation of eutrophic waterbodies
C2.12	Hard water springs
C2.18	Acid oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation
C3.51	Euro-Siberian dwarf annual amphibious swards
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D2.3	Transition mires and quaking bogs
D5.2	Beds of large sedges normally without free-standing water
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows
E4.3	Acid alpine and subalpine grassland
E5.5	Subalpine moist or wet tall-herb and fern stands
F5.13	Juniper matorral
F7	Spiny mediterranean heaths
G1.11	Riverine willow woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H2.3	Temperate-montane acid siliceous screes
H3.1	Acid siliceous inland cliffs

AM0000003 'Khor Virap'

The previous site (2016) is divided into two new sites (decrease of 10.7 percent for two proposed sites together) named 'Khor Virap' and 'Armash'. The territory between these two new sites is occupied by settlements and agricultural land (fields, orchards, and vineyards), thus excluded since there is no target object.

In the list of target species, the following changes were made for this site: in the list of birds, the following species were removed: *Aquila clanga*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Circaetus gallicus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Falco biarmicus*, *Falco columbarius*, *Falco naumanni*, and *Falco vespertinus*. Two new species were added: *Pelecanus onocrotalus* and *Plegadis falcinellus*.

It should also be mentioned that bird species excluded from this site as well as target species from other groups are still presented in the new proposed 'Armash' site (see description below). The joint target habitat list from the two newly proposed sites does not include two previously mentioned habitats (C1.3411 and E5.4). The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 50

Type	Number of species	Species
Plants	1	*Microcnemum coralloides* ssp. *Anatolicum*
Reptiles	2	*Mauremys caspica* and *Testudo graeca*
Birds	38	*Acrocephalus melanopogon*, *Anthus campestris*, *Ardea purpurea*, *Ardeola ralloides*, *Asio flammeus*, *Aythya nyroca*, *Botaurus stellaris*, *Buteo rufinus*, *Calandrella brachydactyla*, *Chlidonias leucopterus*, *Ciconia ciconia*, *Circus aeruginosus*, *Coracias garullus*, *Egretta alba*, *Egretta garzetta*, *Falco peregrinus*, *Gallinago media*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Ixobrychus minutus*, *Lanius minor*, *Larus genei*, *Larus minutus*, *Luscinia svecica*, *Marmaronetta angustirostris*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Pelecanus onocrotalus*, *Pernis apivorus*, *Phalacrocorax pygmaeus*, *Plegadis falcinellus*, *Porzana porzana*, *Porzana parva*, *Porzana pusilla*, *Tadorna ferruginea*, and *Tringa glareola*
Mammals	9	*Canis lupus*, *Lutra lutra*, *Miniopterus schreibersii*, *Myotis blythi*, *Myotis emarginatus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, and *Rhinolophus hipposideros*

Number of habitats included in Resolution 4: 13

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.4	Permanent dystrophic lakes, ponds, and pools
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation
C3.51	Euro-Siberian dwarf annual amphibious swards
D2.3	Transition mires and quaking bogs
D6.1	Inland saltmarshes
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E3.4	Moist or wet eutrophic and mesotrophic grassland
E6.2	Continental inland salt steppes
F6.8	Xero-halophile scrubs
F7	Spiny mediterranean heaths
F9.3	Southern riparian galleries and thickets

AM0000004 'Lake Arpi'

The previous site area (2016) is reduced (decrease of 54.8 percent) by excluding settlements and arable lands, leaving exclusively the territory of the Arpi Lich National Park and adjacent grasslands on the mountain slopes where target species and habitats are present.

All target species and habitats remained, and four more bird species are added: *Aquila clanga*, *Circaetus gallicus*, *Ficedula parva*, and *Ficedula semitorquata*.

All target habitats remain unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 62

Type	Number of species	Species
Plants	2	*Echium russicum* and *Ligularia sibirica*
Invertebrate	1	*Maculinea nausithos*
Fish	3	*Aspius aspius*, *Barbus capito*, and *Sabajenewia aurata*
Birds	55	*Accipiter brevipes*, *Acrocephalus melanopogon*, *Alcedo atthis*, *Aquila chrysaetos*, *Aquila clanga*, *Aquila nipalensis*, *Aquila pomarina*, *Ardea purpurea*, *Ardeola ralloides*, *Asio flammeus*, *Aythya nyroca*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Ciconia ciconia*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garullus*, *Crex crex*, *Egretta garzetta*, *Emberiza hortulana*, *Falco cherrug*, *Falco columbarius*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Ficedula parva*, *Ficedula semitorquata*, *Gallinago media*, *Grus grus*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Ixobrychus minutus*, *Lanius collurio*, *Lanius minor*, *Larus genei*, *Limosa lapponica*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, *Recurvirostra avosetta*, *Sterna hirundo*, *Tadorna ferruginea*, *Tringa glareola*, and *Xenus cinereus*
Mammals	5	*Canis lupus*, *Lutra lutra*, *Myotis blythii*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 19

Code	Habitat
C1.25	Submerged carpets of stoneworts in mesotrophic waterbodies
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.3411	Water crowfoot communities in shallow water
C2.18	Acid oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
D2.3	Mesotrophic vegetation of slow-flowing rivers
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
D5.2	Beds of large sedges normally without free-standing water
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows

Code	Habitat
E3.4	Moist or wet eutrophic and mesotrophic grassland
E3.5	Moist or wet oligotrophic grassland
E5.5	Subalpine moist or wet tall-herb and fern stands
H2.3	Temperate-montane acid siliceous screes

AM0000005 'Ijevan'

A small area increase of the site is applied (increase of 4 percent) to the previous site (2016). The reason for the expansion is to also include apart from the forests meadow habitats, which will significantly contribute to improving the rational conservation of some species of vertebrate animals and plants. Forests and pastures in this area are a benefit since they will contribute to a holistic and multifunctional forest and pasture management in the future.

All target species remained, and four more bird species are added: *Aegypius monachus* (regular visitor), *Aquila nipalensis*, *Circus macrourus*, and *Falco naumanni* (regular spring/autumn passage).

From the list of target habitats C1.32, C2.1B, C2.33, C2.34, G1, and A.4 habitats are removed and E3.5 is added.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 44

Type	Number of species	Species
Plants	2	*Echium russicum* and *Steveniella satyrioides*
Invertebrate	3	*Callimorpha (Euplagia) quadripunctaria*, *Cerambyx cerdo*, and *Rosalia alpine*
Reptiles	2	*Emys orbicularis* and *Testudo graeca*
Birds	28	*Aegypius monachus*, *Aquila chrysaetos*, *Aquila pomarina*, *Aquila nipalensis*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Ciconia nigra*, *Circaetus gallicus*, *Circus macrourus*, *Crex crex*, *Dendrocopos medius*, *Dryocopus martius*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Ficedula parva*, *Ficedula semitorquata*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	9	*Canis lupus*, *Lutra lutra*, *Lynx lynx*, *Myotis blythii*, *Myotis bechsteini*, *Miniopterus schreibersii*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Ursus arctos*

Number of habitats included in Resolution 4: 27

Code	Habitat
C2.26	Lime-rich oligotrophic vegetation of fast-flowing streams
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.28	Eutrophic vegetation of fast-flowing streams
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D5.2	Beds of large sedges normally without free-standing water
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
E5.5	Subalpine moist or wet tall-herb and fern stands
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F5.13	Juniper matorral

Code	Habitat
F7	Spiny mediterranean heaths
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.22	Mixed oak-elm-ash woodland of great rivers
G1.6	Beech woodland
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H1	Caves
H2.4	Temperate-montane calcareous and ultra-basic screes
H3.2	Basic and ultra-basic inland cliffs

AM0000006 'Jajur'

A significant area increase of the site is applied (increase of 78.7 percent). The reason for the expansion is to include all forest lands on the Shirak ridge. This will improve the target habitats coverage, as well as the capability to protect the target species.

The lists of target species and habitats remain unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 36

Type	Number of species	Species
Plants	3	*Dracocephalum austriacum*, *Echium russicum*, and *Ligularia sibirica*
Invertebrate	1	*Callimorpha (Euplagia) quadripunctaria*
Birds	26	*Accipiter brevipes*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Crex crex*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Pandion haliaetus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	6	*Canis lupus*, *Miniopterus schreibersii*, *Myotis blythii*, *Rhinolophus ferrumequinum*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 8

Code	Habitat
C2.19	Lime-rich oligotrophic vegetation of spring brooks
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.4	Calcareous alpine and subalpine grassland
F7	Spiny mediterranean heaths
H2.4	Temperate-montane calcareous and ultra-basic screes
H3.2	Basic and ultra-basic inland cliffs

AM0000007 'Lori lakes'

A significant area increase (increase of 116.5 percent) of the site is applied. The boundaries of the AM0000007 'Lori lakes' shp file in the Emerald Network database (2016) are incorrect, showing a larger area (20,906 ha instead of 1,596.4 ha). It is clearly a boundary mapping error in the database that has been corrected in the current recommended context. Apart from the incorrect shp file ('Site display' in sdf), the current information provided in the respective sdf file is correct.[7]

The modified new proposed site includes all major lakes and reservoirs in the Lori highland plain. The area expansion will improve the ability to protect target species and habitats. During the site borders redesign, agricultural lands and airport facilities were excluded.

In the list of target species, two new bird species are added: *Cygnus cygnus* - winter visitor and *Tadorna ferruginea* - regularly occurring.

The lists of target habitats remain unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 38

Type	Number of species	Species
Plants	1	*Echium russicum*
Invertebrate	3	*Leucorrhinia pectoralis*, *Maculinea nausithous*, and *Vertigo angustior*
Birds	30	*Accipiter brevipes*, *Acrocephalus melanopogon*, *Aquila nipalensis*, *Aquila pomarina*, *Asio flammeus*, *Botaurus stellaris*, *Buteo rufinus*, *Ciconia ciconia*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Crex crex*, *Cygnus cygnus*, *Egretta alba*, *Falco columbarius*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Gallinago media*, *Grus grus*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Lanius collurio*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Pernis apivorus*, *Tadorna ferruginea*, and *Tringa glareola*
Mammals	4	*Canis lupus*, *Lutra lutra*, *Miniopterus schreibersii*, and *Myotis blythii*

Number of habitats included in Resolution 4: 14

Code	Habitat
C1.224	Floating bladderwort colonies
C1.225	Floating *Salvinia natans* mats
C1.25	Submerged carpets of stoneworts in mesotrophic waterbodies
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.33	Rooted submerged vegetation of eutrophic waterbodies
C2.1A	Mesotrophic vegetation of spring brooks
C2.27	Mesotrophic vegetation of fast-flowing streams
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation
D2.3	Mesotrophic vegetation of slow-flowing rivers
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
D5.2	Beds of large sedges normally without free-standing water
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E3.5	Moist or wet oligotrophic grassland

[7] https://natura2000.eea.europa.eu/Emerald/SDF.aspx?site=AM0000007.

AM0000008 'Paeonia'

The site (previously named impassable brushwood) is separated into two new sites (decrease of 79.25 percent for two proposed sites)—AM0000008 'Paeonia' and AM0000026 'Emys orbicularis'. In fact, the site is allocated to preserve only one population of the target species *Paeonia tenuifolia* in Armenia. The site area boundaries are optimized and include precisely where the target species grows. All other target animal species and habitats were previously insignificantly represented (with a low percentage in total number and area).

All previously mentioned target species are presented in the two new sites.

From the previous list of target habitats, F3.247 is removed, and two new habitats C1.32 and C1.4 are added (see also AM0000026) in the two new sites.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 24

Type	Number of species	Species
Plants	1	*Paeonia tenuifolia*
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria*, and *Cerambyx cerdo*
Birds	21	*Accipiter brevipes*, *Aquila chrysaetos*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garullus*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*

Number of habitats included in Resolution 4: 6 (AM000008)

Code	Habitat
E1.11	Euro-Siberian rock debris swards
E1.3	Mediterranean xeric grassland
F3.245	Eastern mediterranean deciduous thickets
F7	Spiny mediterranean heaths
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
H3.1	Acid siliceous inland cliffs

AM0000009 'Jermuk'

During 2016, as planned and proposed by the World Wide Fund for Nature, the candidate Emerald site matched with the territory of the respective national park. The proposed new site area is slightly reduced (decrease of 5.6 percent), compared to 2016, and site boundaries are redesigned (by removing and adding small parts).

Deleted areas may include some target species (widespread throughout the country such as *Buteo rufinus, Emberiza hortulana*, and *Lanius collurio*) in very small numbers related to the total population, that is, less than 1 percent of the total populations in Armenia.

On the other hand, added site boundaries include the habitats of *Capra aegagrus*, as well as nesting and feeding areas of target bird species, such as *Anthus campestris, Aquila chrysaetos, Aquila pomarina, Buteo rufinus, Emberiza hortulana, Gypaetus barbatus, Hieraaetus pennatus*, and *Lanius collurio*.

The list of previous target species remains unchanged. From the list of target habitats, E1.83 was removed. [8]

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 53

Type	Number of species	Species
Plants	1	*Echium russicum*
Invertebrate	1	*Callimorpha (Euplagia) quadripunctaria*
Fish	3	*Aspius aspius*, *Barbus capito*, and *Sabanejewia aurata*
Birds	34	*Accipiter brevipes*, *Aegypius monachus*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila nipalensis*, *Aquila pomarina*, *Ardea purpurea*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Coracias garullus*, *Crex crex*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco cherrug*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Ixobrychus minutus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Porzana porzana*, *Pyrrhocorax pyrrhocorax*, *Sterna hirundo*, *Sylvia nisoria*, and *Tringa glareola*
Mammals	14	*Canis lupus*, *Capra aegagrus*, *Lutra lutra*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis bechsteini*, *Myotis blythii*, *Myotis emarginatus*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Rhinolophus mehelyi*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 27

Code	Habitat
C1.1	Permanent oligotrophic lakes, ponds, and pools
C2.12	Hard water springs
C2.18	Acid oligotrophic vegetation of spring brooks
C2.19	Lime-rich oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks

[8] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

Code	Habitat
D2.3	Mesotrophic vegetation of slow-flowing rivers
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
D5.2	Beds of large sedges normally without free-standing water
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.3	Acid alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
F5.13	Juniper matorral
F7	Spiny mediterranean heaths
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H1	Caves
H2.3	Temperate-montane acid siliceous screes
H3.1	Acid siliceous inland cliffs

AM0000010 'Aragats'

The territory of the site is significantly expanded (increase of 124.8 percent), covering not only the Aragats Alpine sanctuary but also the adjacent slopes and gorges, which will allow to include in the site almost the entire population of the target species *Saxifraga hirculus* and the nesting and feeding areas of most of the target bird species listed in the table below.

In the list of target species, all previously mentioned are presented, and some additions are made: in the list of birds, four new species are added, *Anthus campestris, Aquila clanga, Aquila heliaca*, and *Bubo bubo*, as well as two new species are added to mammal list: *Vormela peregusna* and *Myotis blythii*.

From the previous list of habitats, E1.83[9] is removed.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 26

Type	Number of species	Species
Plants	2	*Echium russicum* and *Saxifraga hirculus*
Birds	21	*Aegypius monachus*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila clanga*, *Aquila heliaca*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Circaetus gallicus*, *Emberiza hortulana*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	3	*Canis lupus*, *Myotis blythii*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 8

Code	Habitat
C1.1	Permanent oligotrophic lakes, ponds, and pools
C2.18	Acid oligotrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.3	Acid alpine and subalpine grassland
F5.13	Juniper matorral
H2.3	Temperate-montane acid siliceous screes
H3.1	Acid siliceous inland cliffs

[9] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

AM0000011 'Dilijan'

The site area is slightly reduced (decrease of 8.6 percent), remaining with the territory of the Dilijan National Park and excluding settlements and infrastructure with no target species and habitats.

Some changes were made to the list of target species: in the list of mammals, *Miniopterus schreibersii* was included, and in the list of invertebrates, *Maculinea nausithous* was included and one bird species excluded (*Acrocephalus melanopogon*).

The number of habitats remains unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 58

Type	Number of species	Species
Plants	2	*Echium russicum* and *Ligularia sibirica*
Invertebrate	4	*Callimorpha (Euplagia) quadripunctaria*, *Cerambyx cerdo*, *Maculinea nausithous*, and *Rosalia alpina*
Fish	1	*Sabanejewia aurata*
Birds	41	*Accipiter brevipes*, *Aegypius monachus*, *Alcedo atthis*, *Aquila clanga*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Asio flammeus*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Crex crex*, *Dendrocopos medius*, *Dryocopus martius*, *Emberiza hortulana*, *Falco cherrug*, *Falco columbarius*, *Falco peregrines*, *Falco vespertinus*, *Ficedula parva*, *Ficedula semitorquata*, *Grus grus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	9	*Canis lupus*, *Lutra lutra*, *Lynx lynx*, *Myotis bechsteinii*, *Myotis blythii*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Miniopterus schreibersiiu*, and *Ursus arctos*

Number of habitats included in Resolution 4: 29

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C2.12	Hard water springs
C2.18	Acid oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.1B	Eutrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.26	Lime-rich oligotrophic vegetation of fast-flowing streams
C2.28	Eutrophic vegetation of fast-flowing streams
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D2.3	Transition mires and quaking bogs
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E3.5	Moist or wet oligotrophic grassland

Code	Habitat
E5.4	Moist or wet tall-herb and fern fringes and meadows
E5.5	Subalpine moist or wet tall-herb and fern stands
F3.245	Eastern mediterranean deciduous thickets
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.22	Mixed oak-elm-ash woodland of great rivers
G1.6	Beech woodland
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G1.A4	Ravine and slope woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.4E	Ponto-Caucasian Scots pine forests
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*

AM0000012 'Arpa'

The site (previous name is 'Gnishik') was slightly reduced (decrease of 10.3 percent) to exclusively cover the territory of Arpa Protected Landscape on the base of assessing the presence/absence of target species and habitats. The boundary change does not cause any effect on the populations of target species and habitats.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 59

Type	Number of species	Species
Plants	2	*Dactylorhiza chuhensis* and *Echium russicum*
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria* and *Pseudophilotis bavius*
Fish	3	*Aspius aspius*, *Barbus capito*, and *Sabanejewia aurata*
Reptiles	1	*Mauremys capsica*
Birds	37	*Accipiter brevipes*, *Aegypius monachus*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Ciconia ciconia*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garullus*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Grus grus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nissoria*
Mammals	14	*Canis lupus*, *Capra aegagrus*, *Lutra lutra*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis blythii*, *Myotis emarginatus*, *Panthera pardus*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Rhinolophus mehelyi*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 36

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.3411	Water crowfoot communities in shallow water
C2.18	Acid oligotrophic vegetation of spring brooks
C2.19	Lime-rich oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.1B	Eutrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.26	Lime-rich oligotrophic vegetation of fast-flowing streams
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C2.34	Eutrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows

Code	Habitat
E3.4	Moist or wet eutrophic and mesotrophic grassland
E3.5	Moist or wet oligotrophic grassland
E4.3	Acid alpine and subalpine grassland
E4.4	Calcareous alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
F5.13	Juniper matorral
F7	Spiny mediterranean heaths
F9.1	Riverine scrub
F9.3	Southern riparian galleries and thickets
G1.11	Riverine willow woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H1	Caves
H2.4	Temperate-montane calcareous and ultra-basic screes
H2.6	Calcareous and ultra-basic screes of warm exposures
H3.2	Basic and ultra-basic inland cliffs
H3.511	Limestone pavements

AM0000013 'Vorotan'

The territory of the site (previous name is 'Gorayk') is slightly reduced (decrease of 20.3 percent), and boundaries are redesigned, to cover the habitats of some species of birds and bats.

In the list of target species, all previously mentioned species are presented, and 12 new bird species are added: *Anthus campestris*, *Aquila nipalenisis*, *Asio flammeus*, *Bubo bubo*, *Chlidonias leucopterus*, *Ciconia nigra*, *Egretta alba*, *Egretta garzetta*, *Falco peregrinus*, *Lanius minor*, *Melanocorypha calandra*, and *Tadorna ferruginea*.

From the list of target habitats, D5.2, E3.5, and E4.3 are removed, and G1.11 is added.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 43

Type	Number of species	Species
Plants	1	*Echium russicum*
Birds	38	*Accipiter brevipes*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila nipalenisis*, *Aquila pomarina*, *Asio flammeus*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Chlidonias leucopterus*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus macrourus*, *Circus pygargus*, *Crex crex*, *Egretta alba*, *Egretta garzetta*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Porzana porzana*, *Pyrrhocorax pyrrhocorax*, *Sterna hirundo*, *Tadorna ferruginea*, and *Tringa glareola*
Mammals	4	*Canis lupus*, *Myotis blythi*, *Rhinolophus hipposideros*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 7

Code	Habitat
C2.18	Acid oligotrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
E2.3	Mountain hay meadows
H3.1	Acid siliceous inland cliffs

AM0000014 'Arevik'

The territory of the site is slightly reduced (decrease of 7.7 percent) based on the presence/absence of target species and habitat, limiting it to the territory of the Arevik National Park and excluding settlements and areas with mining operations.

In the list of target species, two bird species from the previous list are removed - *Oenanthe pleschanka* and *Pelecanus onocrotalus* (not observed in this area) and one species - *Vertigo moulinsiana* is added to the list of invertebrates.

The list of target habitats remains unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 64

Type	Number of species	Species
Plants	2	*Echium russicum* and *Steveniella satyrioides*
Invertebrate	3	*Callimorpha (Euplagia) quadripunctaria*, *Cerambyx cerdo*, and *Vertigo moulinsiana*
Fish	4	*Aspius aspius*, *Barbus capito*, *Rhodeus sericeus amarus*, and *Sabanejewia aurata*
Reptiles	2	*Mauremys caspica* and *Testudo graeca*
Birds	39	*Accipiter brevipes*, *Acrocephalus melanopogon*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Ardeola ralloides*, *Botaurus stellaris*, *Bubo bubo*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Coracias garullus*, *Dendrocopos medius*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco peregrinus*, *Ficedula semitorquata*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Ixobrychus minutus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Pernis apivorus*, *Porphyrio porphyrio*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	14	*Canis lupus*, *Capra aegagrus*, *Lutra lutra*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis blythii*, *Myotis emarginatus*, *Panthera pardus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 34

Code	Habitat
C2.18	Acid oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.1B	Eutrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.28	Eutrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C2.34	Eutrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
D5.2	Beds of large sedges normally without free-standing water
E1.11	Euro-Siberian rock debris swards

Code	Habitat
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E3.5	Moist or wet oligotrophic grassland
E4.3	Acid alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F5.13	Juniper matorral
F6.8	Xero-halophile scrubs
F7	Spiny mediterranean heaths
F9.1	Riverine scrub
F9.3	Southern riparian galleries and thickets
G1.11	Riverine willow woodland
G1.3	Mediterranean riparian woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H2.3	Temperate-montane acid siliceous screes
H2.5	Acid siliceous screes of warm exposures
H3.1	Acid siliceous inland cliffs

AM0000015 'Zangezur'

The previous site 'Zangezur' (2016) was separated into two new sites (increase of 11.8 percent for the two proposed sites).

Settlements, infrastructure, and areas occupied by mining enterprises are excluded from this site.

All the species from the previous site's list of target species are still included in the two new sites. Additionally, some bird species have been added: *Aquila clanga*, *Aquila heliaca*, and *Crex crex* (observed in the area regularly) in 'Zangezur' site and *Aegolius funereus* and *Aquila nipalensis* (that occur in the area) in Shikahogh site, as well as one invertebrate - *Coenagrion ornatum* is added in Shikahogh site. From the joint list of target habitats E1.83[10] was excluded.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 45 (AM0000015)

Type	Number of species	Species
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria* and *Coenagrion ornatum*
Birds	32	*Accipiter brevipes*, *Aegypius monachus*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila pomarina*, *Aquila heliaca*, *Aquila clanga*, *Bubo bubo*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus cyaneus*, *Coracias garrulus*, *Crex crex*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	11	*Canis lupus*, *Capra aegagrus*, *Miniopterus schreibersii*, *Myotis blythii*, *Myotis emarginatus*, *Panthera pardus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Ursus arctos*

Number of habitats included in Resolution 4: 12 (AM0000015)

Code	Habitat
C1.1	Permanent oligotrophic lakes, ponds, and pools
C2.12	Hard water springs
C2.18	Acid oligotrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
E1.11	Euro-Siberian rock debris swards
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.3	Acid alpine and subalpine grassland
F7	Spiny mediterranean heaths
H2.5	Acid siliceous screes of warm exposures
H3.1	Acid siliceous inland cliffs

[10] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

AM0000016 'Tatev'

The site area is slightly reduced (decrease of 14.6 percent) excluding settlements and infrastructure with no target objects.

All previous target species are presented in the new site.

From the list of target habitats, C1.1 and E1.83[11] are removed.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 52

Type	Number of species	Species
Plants	2	*Echium russicum* and *Steveniella satyrioides*
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria* and *Cerambyx cerdo*
Fish	3	*Aspius aspius*, *Barbus capito*, and *Sabanejewia aurata*
Reptiles	1	*Mauremys capsica*
Birds	32	*Accipiter brevipes*, *Aegypius monachus*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Ciconia nigra*, *Circaetus gallicus*, *Coracias garrulus*, *Dendrocopos medius*, *Dendrocopos syriacus*, *Dryocopus martius*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Ficedula parva*, *Ficedula semitorquata*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	12	*Canis lupus*, *Capra aegagrus*, *Lutra lutra*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis blythii*, *Myotis emarginatus*, *Panthera pardus*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Ursus arctos*

Number of habitats included in Resolution 4: 24

Code	Habitat
C2.12	Hard water springs
C2.18	Acid oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.3	Acid alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F5.13	Juniper matorral
F7	Spiny mediterranean heaths

[11] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

Code	Habitat
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H2.3	Temperate-montane acid siliceous screes
H3.1	Acid siliceous inland cliffs

AM0000017 'Metsamor'

The site area is reduced (decrease of 61.5 percent), leaving the wetland habitats as the predominant feature and excluding settlements and agricultural lands (fields, orchards, and vineyards).

All previously mentioned target species are presented in the new site.

In the list of habitats, C1.33, C2.33, and D5.2 habitats are added. The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 87

Type	Number of species	Species
Fish	4	*Aspius aspius*, *Barbus capito*, *Rhodeus sericeus amarus*, and *Sabanejewia aurata*
Reptiles	1	*Testudo graeca*
Birds	76	*Accipiter brevipes*, *Acrocephalus melanopogon*, *Alcedo atthis*, *Anthus campestris*, *Aquila nipalensis*, *Aquila pomarina*, *Ardea purpurea*, *Ardeola ralloides*, *Aythya nyroca*, *Botaurus stellaris*, *Burhinus oedicnemus*, *Calandrella brachydactyla*, *Charadrius alexandrinus*, *Chlidonias hybridus*, *Chlidonias leucopterus*, *Chlidonias niger*, *Ciconia ciconia*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Cygnus bewickii*, *Cygnus cygnus*, *Dendrocopos syriacus*, *Egretta alba*, *Egretta garzetta*, *Emberiza hortulana*, *Falco biarmicus*, *Falco columbarius*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Gallinago media*, *Gelochelidon nilotica*, *Glareola pratincola*, *Grus grus*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Ixobrychus minutus*, *Lanius collurio*, *Lanius minor*, *Larus genei*, *Larus melanocephalus*, *Larus minutus*, *Limosa lapponica*, *Luscinia svecica*, *Marmaronetta angustirostris*, *Melanocorypha calandra*, *Mergellus albellus*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Pandion haliaetus*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Pernis apivorus*, *Phalacrocorax pygmaeus*, *Phalaropus lobatus*, *Phoenicopterus ruber*, *Philomachus pugnax*, *Platalea leucorodia*, *Plegadis falcinellus*, *Pluvialis apricaria*, *Porphyrio porphyrio*, *Porzana parva*, *Porzana porzana*, *Porzana pusilla*, *Recurvirostra avosetta*, *Sterna caspia*, *Sterna hirundo*, *Sternula albifrons*, *Tadorna ferruginea*, *Tringa glareola*, and *Xenus cinereus*
Mammals	6	*Lutra lutra*, *Miniopterus schreibersii*, *Myotis blythii*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Rhinolophus mehelyi*

Number of habitats included in Resolution 4: 18

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.33	Rooted submerged vegetation of eutrophic waterbodies
C1.3411	Water crowfoot communities in shallow water
C1.4	Permanent dystrophic lakes, ponds, and pools
C2.33	Mesotrophic vegetation of slow-flowing rivers
C2.34	Eutrophic vegetation of slow-flowing rivers
C3.51	Euro-Siberian dwarf annual amphibious swards
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
D5.2	Beds of large sedges normally without free-standing water
E1.3	Mediterranean xeric grassland

Code	Habitat
E6.2	Continental inland salt steppes
F6.8	Xero-halophile scrubs
F7	Spiny mediterranean heaths
F9.3	Southern riparian galleries and thickets
G1.11	Riverine willow woodland
H1	Caves

AM0000018 'Khndzoresk'

It is proposed to slightly increase (increase of 0.9 percent) the territory of the site, redesigning the boundaries along natural boundaries. All previously mentioned target species are presented in the new site, and *Gypaetus barbatus* is added to the bird list.

The list of target habitats remains unchanged. The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 44

Type	Number of species	Species
Plants	1	*Echium russicum*
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria*, and *Cerambyx cerdo*
Birds	29	*Accipiter brevipes*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	13	*Canis lupus*, *Lutra lutra*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis bechsteinii*, *Myotis blythii*, *Myotis emarginatus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 20

Code	Habitat
C2.1A	Mesotrophic vegetation of spring brooks
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.28	Eutrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E3.4	Moist or wet eutrophic and mesotrophic grassland
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F7	Spiny mediterranean heaths
G1.11	Riverine willow woodland
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H1	Caves
H2.3	Temperate-montane acid siliceous screes
H2.5	Acid siliceous screes of warm exposures
H3.1	Acid siliceous inland cliffs

AM0000019 'Vanand'

The territory of the previous site (2016) is significantly increased (increase of 149 percent), to allow a better population coverage of the target species and habitats; the number of target species and habitats remains the same.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 48

Type	Number of species	Species
Fish	4	*Aspius aspius*, *Barbus capito*, *Rhodeus sericeus amarus*, and *Sabanejewia aurata*
Reptiles	2	*Mauremys caspica* and *Testudo graeca*
Birds	38	*Accipiter brevipes*, *Anthus campestris*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Burhinus oedicnemus*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Ciconia ciconia*, *Ciconia nigra*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Dendrocopos syriacus*, *Falco columbarius*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Milvus milvus*, *Neophron percnopterus*, *Otis tarda*, *Pandion haliaetus*, *Pernis apivorus*, *Pluvialis apricaria*, *Pterocles orientalis*, *Pyrrhocorax pyrrhocorax*, and *Tetrax tetrax*
Mammals	4	*Canis lupus*, *Myotis blythi*, *Rhinolophus ferrumequinum*, and *Rhinolophus mehelyi*

Number of habitats included in Resolution 4: 13

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.3411	Water crowfoot communities in shallow water
C1.4	Permanent dystrophic lakes, ponds, and pools
C2.34	Eutrophic vegetation of slow-flowing rivers
C3.51	Euro-Siberian dwarf annual amphibious swards
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D6.1	Inland saltmarshes
E1.3	Mediterranean xeric grassland
E6.2	Continental inland salt steppes
F6.8	Xero-halophile scrubs
F7	Spiny mediterranean heaths
F9.3	Southern riparian galleries and thickets

AM0000020 'Akhuryan'

The site area is proposed to be slightly decreased (decrease of 9.6 percent), optimizing its boundaries along natural boundaries and allowing a better population coverage of the target species and habitats.

The number of target species and habitats remains the same.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 68

Type	Number of species	Species
Plants	1	*Echium russicum*
Invertebrate	1	*Callimorpha (Euplagia) quadripunctaria*
Fish	4	*Aspius aspius*, *Barbus capito*, *Rhodeus sericeus amarus*, and *Sabanejewia aurata*
Reptiles	1	*Mauremys capsica*
Birds	57	*Accipiter brevipes*, *Alcedo atthis*, *Anthus campestris*, *Aquila clanga*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Ardea purpurea*, *Ardeola ralloides*, *Botaurus stellaris*, *Bubo bubo*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Charadrius alexandrinus*, *Chlidonias leucopterus*, *Ciconia ciconia*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Crex crex*, *Egretta alba*, *Egretta garzetta*, *Emberiza hortulana*, *Falco cherrug*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Gallinago media*, *Grus grus*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Ixobrychus minutes*, *Lanius collurio*, *Larus genei*, *Lullula arborea*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Otis tarda*, *Pandion haliaetus*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Pernis apivorus*, *Philomachus pugnax*, *Pluvialis apricaria*, *Porzana parva*, *Recurvirostra avosetta*, *Sterna hirundo*, *Tadorna ferruginea*, *Tetrax tetrax*, *Tringa glareola*, and *Xenus cinereus*
Mammals	4	*Canis lupus*, *Lutra lutra*, *Myotis blythi*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 7

Code	Habitat
C2.33	Mesotrophic vegetation of slow-flowing rivers
C2.34	Eutrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E6.2	Continental inland salt steppes

AM0000021 'Rhododendron caucasicus'

Based on assessing the presence/absence of target species and habitats, a small (decrease of 3.6 percent) area reduction is proposed limiting it to the territory of the sanctuary. In fact, the site is designated for conservation of habitat F2.22 (Alpide acidocline alpenrose heaths).

In the list of target species, all previous species remain and two invertebrate species are added: *Cerambyx cerdo* and *Maculinea nausithous*. The list of habitats remains unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 33

Type	Number of species	Species
Plants	2	*Echium russicum* and *Ligularia sibirica*
Invertebrate	2	*Cerambyx cerdo* and *Maculinea nausithous*
Birds	22	*Aegypius monachus*, *Aquila chrysaetos*, *Aquila pomarina*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Crex crex*, *Dendrocoptes medius*, *Emberiza hortulana*, *Falco peregrinus*, *Ficedula parva*, *Ficedula semitorquata*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	7	*Canis lupus*, *Lynx lynx*, *Myotis blythii*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Ursus arctos*, and *Vormela peregusna*

Number of habitats included in Resolution 4: 14

Code	Habitat
C2.12	Hard water springs
C2.19	Lime-rich oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.26	Lime-rich oligotrophic vegetation of fast-flowing streams
E1.2	Perennial calcareous grassland and basic steppes
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.4	Calcareous alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
F2.22	Alpide acidocline alpenrose heaths
F3.247	Ponto-Sarmatic deciduous thickets
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
H2.3	Temperate-montane acid siliceous screes
H3.2	Basic and ultra-basic inland cliffs

AM0000022 'Arayiler'

There is a small reduction (decrease of 12.9 percent) of the site area as a result of optimizing the site boundaries. Also, during boundaries optimization changes, part of the Kasakh River gorge has been included, as an important area for nesting and feeding of many target bird species.

In the list of target species, some changes are made: two bird species are added - *Gypaetus barbatus, Gyps fulvus* and one species removed from birds list - *Porphyrio porphyrio.*

The list of habitats remains unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 46

Type	Number of species	Species
Plants	1	*Echium russicum*
Reptiles	1	*Testudo graeca*
Birds	37	*Accipiter brevipes*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Crex crex*, *Dendrocopos medius*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Grus grus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	7	*Canis lupus*, *Lutra lutra*, *Lynx lynx*, *Myotis blythii*, *Rhinolophus blasii*, *Rhinolophus ferrumequinum*, and *Ursus arctos*

Number of habitats included in Resolution 4: 15

Code	Habitat
C2.1A	Mesotrophic vegetation of spring brooks
C3.55	Sparsely vegetated river gravel banks
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E4.3	Acid alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
E5.5	Subalpine moist or wet tall-herb and fern stands
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F7	Spiny mediterranean heaths
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
H2.3	Temperate-montane acid siliceous screes
H3.2	Basic and ultra-basic inland cliffs

AM0000023 'Debed'

The site area is slightly expanded (increase of 1.8 percent), to include adjacent forest habitats. Expanding forest habitat coverage will improve the conservation and management of the target species and habitats.

In the list of target species, three invertebrate species were added - *Cerambyx cerdo*, *Maculinea nausithous*, and *Rosalia alpine.*

The list of habitats remains unchanged.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 53

Type	Number of species	Species
Plants	2	*Echium russicum* and *Ligularia sibirica*
Invertebrate	3	*Cerambyx cerdo*, *Maculinea nausithous*, and *Rosalia alpina*
Reptiles	2	*Mauremys caspica* and *Testudo graeca*
Birds	39	*Accipiter brevipes*, *Aegypius monachus*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila heliaca*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garrulus*, *Crex crex*, *Dendrocoptes medius*, *Dendrocopos syriacus*, *Dryocopus martius*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Ficedula parva*, *Ficedula semitorquata*, *Grus grus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	8	*Canis lupus*, *Lutra lutra*, *Lynx lynx*, *Myotis blythii*, *Myotis emarginatus*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Ursus arctos*

Number of habitats included in Resolution 4: 22

Code	Habitat
C2.1A	Mesotrophic vegetation of spring brooks
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E2.3	Mountain hay meadows
E4.4	Calcareous alpine and subalpine grassland
E5.5	Subalpine moist or wet tall-herb and fern stands
F2.22	Alpide acidocline alpenrose heaths
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.22	Mixed oak-elm-ash woodland of great rivers
G1.6	Beech woodland

Code	Habitat
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G1.A4	Ravine and slope woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H3.2	Basic and ultra-basic inland cliffs

AM0000024 'Urts Mountains

This site is the result of the separation of a part of the AM0000001 Khosrov Forest Emerald site from 2016. (see AM0000001 'Khosrov forest' site). Currently, the area does not include any settlements and infrastructure. As mentioned in the description of AM0000001, all target species besides birds as well as target habitats from 2016 are represented in the three new sites.

All previously mentioned target species are presented in the three new sites together except *Burhinus oedicnemus*. The following additions are made in the joint list of target species: two bird species - *Charadrius alexandrinus* and *Pterocles orientalis* and one mammal species - *Myotis blythi*.

All target habitats, except habitat C2.1, are presented in the three new sites together, and two new habitats (E6.2 and F6.8) are added. The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 50

Type	Number of species	Species
Plants	1	*Echium russicum*
Invertebrate	1	*Callimorpha (Euplagia) quadripunctaria*
Reptiles	1	*Testudo graeca*
Birds	38	*Accipiter brevipes*, *Aegypius monachus*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila clanga*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Bucanetes githagineus*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Ciconia ciconia*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garullus*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pterocles orientalis*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	9	*Canis lupus*, *Capra aegagrus*, *Miniopterus schreibersii*, *Myotis emarginatus*, *Panthera pardus*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus mehelyi*, and *Ursus arctos*

Number of habitats included in Resolution 4: 11

Code	Habitat
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
F3.245	Eastern mediterranean deciduous thickets
F5.13	Juniper matorral
F7	Spiny mediterranean heaths
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H2.5	Acid siliceous screes of warm exposures
H3.1	Acid siliceous inland cliffs

AM0000025 'Armash'

This particular site is separated from the previous Khor Virap site (2016). Currently, it does not include settlements, infrastructure, and agricultural lands (fields, orchards, and vineyards), which will improve conservation and management of the target species and habitats.

The target species list of this site includes all previous target species of fishes, reptiles, and birds. It should also be mentioned that previous target species from other groups which are not presented in this site are still presented in the new proposed 'Khor Virap' site.

The joint target habitat list from the two newly proposed sites does not include two previously mentioned habitats (C1.3411 and E5.4).

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 103

Type	Number of species	Species
Fish	4	*Aspius aspius*, *Barbus capito*, *Rhodeus sericeus amarus*, and *Sabanejewia aurata*,
Reptiles	2	*Mauremys caspica* and *Testudo graeca*
Birds	89	*Accipiter brevipes*, *Acrocephalus melanopogon*, *Alcedo atthis*, *Anser erythropus*, *Anthus campestris*, *Aquila clanga*, *Aquila heliaca*, *Aquila nipalensis*, *Aquila pomarina*, *Ardea purpurea*, *Ardeola ralloides*, *Asio flammeus*, *Aythya nyroca*, *Botaurus stellaris*, *Burhinus oedicnemus*, *Buteo rufinus*, *Calandrella brachydactyla*, *Charadrius alexandrinus*, *Charadrius asiaticus*, *Charadrius lesshenaultii*, *Charadrius morinellus*, *Chlidonias hybridus*, *Chlidonias leucopterus*, *Chlidonias niger*, *Ciconia ciconia*, *Ciconia nigra*, *Circaetus gallicus*, *Circus aeruginosus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garullus*, *Crex crex*, *Cygnus bewickii*, *Cygnus cygnus*, *Dendrocopos syriacus*, *Egretta alba*, *Egretta garzetta*, *Falco biarmicus*, *Falco cherrug*, *Falco columbarius*, *Falco naumanni*, *Falco peregrinus*, *Falco vespertinus*, *Gallinago media*, *Gelochelidon nilotica*, *Glareola nordmanni*, *Glareola pratincola*, *Grus grus*, *Haliaeetus albicilla*, *Hieraaetus pennatus*, *Himantopus himantopus*, *Hoplopterus spinosus*, *Ixobrychus minutus*, *Lanius minor*, *Larus genei*, *Larus melanocephalus*, *Larus minutus*, *Limosa lapponica*, *Luscinia svecica*, *Marmaronetta angustirostris*, *Melanocorypha calandra*, *Mergellus albellus*, *Milvus migrans*, *Neophron percnopterus*, *Nycticorax nycticorax*, *Oxyura leucocephala*, *Pandion haliaetus*, *Pelecanus crispus*, *Pelecanus onocrotalus*, *Pernis apivorus*, *Phalacrocorax pygmaeus*, *Phalaropus lobatus*, *Philomachus pugnax*, *Phoenicopterus ruber*, *Platalea leucorodia*, *Plegadis falcinellus*, *Pluvialis apricaria*, *Porphyrio porphyrio*, *Porzana parva*, *Porzana porzana*, *Porzana pusilla*, *Recurvirostra avosetta*, *Sternula albifrons*, *Sterna caspia*, *Sterna hirundo*, *Tadorna ferruginea*, *Tringa glareola*, and *Xenus cinereus*
Mammals	8	*Lutra lutra*, *Miniopterus schreibersii*, *Myotis blythi*, *Myotis emarginatus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, and *Rhinolophus hipposideros*

Number of habitats included in Resolution 4: 11

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.33	Rooted submerged vegetation of eutrophic waterbodies
C1.4	Permanent dystrophic lakes, ponds, and pools
C2.34	Eutrophic vegetation of slow-flowing rivers
C3.4	Species-poor beds of low-growing water-fringing or amphibious vegetation

Code	Habitat
C3.51	Euro-Siberian dwarf annual amphibious swards
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D6.1	Inland saltmarshes
F9.3	Southern riparian galleries and thickets
G1.11	Riverine willow woodland

AM0000026 'Emys orbicularis'

The site is separated from the previous impassable brushwood site (2016) (see AM0000008 'Paeonia') to focus exclusively on the conservation of the species *Emys orbicularis*. All other species and habitats have no decisive importance here and are represented by insignificant populations and areas.

Four species of mammals were added to the list of target species: *Myotis blythi*, *Myotis emarginatus*, *Rhinolophus ferrumequinum*, and *Rhinolophus hipposideros*.

All previously mentioned target species are presented in the two new sites. From the previous list of target habitats, F3.247 is removed and two new habitats - C1.32 and C1.4 are in added in the two new sites (see also AM0000008).

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 28

Type	Number of species	Species
Invertebrate	2	*Callimorpha (Euplagia) quadripunctaria* and *Cerambyx cerdo*
Reptiles	1	*Emys orbicularis*
Birds	21	*Accipiter brevipes*, *Aquila chrysaetos*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circus cyaneus*, *Circus macrourus*, *Circus pygargus*, *Coracias garullus*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	4	*Myotis blythi*, *Myotis emarginatus*, *Rhinolophus ferrumequinum*, and *Rhinolophus hipposideros*

Number of habitats included in Resolution 4: 6

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C1.4	Permanent dystrophic lakes, ponds, and pools
F3.245	Eastern mediterranean deciduous thickets
F7	Spiny mediterranean heaths
G1.22	Mixed oak-elm-ash woodland of great rivers
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas

AM0000027 'Shikahogh'

The territory of the site is separated from the previous site Zangezur (2016) (see AM0000015 'Zangezur'). Currently, it does not include settlements and infrastructure and is limited to the territory of Shikahogh State reserve and two sanctuaries, that is, Khustup and Plane Grove; it also includes small areas of adjacent territories.

As was mentioned in the target species list of the previous site, all species are still presented in the two new sites together; also, some bird species are added: *Aquila heliaca*, *Aquila clanga*, and *Crex crex* (observed in the area regularly) in 'Zangezur' site and *Aegolius funereus* and *Aquila nipalensis* (that occur in the area) in Shikahogh site, as well as one invertebrate - *Coenagrion ornatum* added in Shikahogh site. From the joint list of target habitats, E1.83[12] was excluded (see also AM0000015).

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 54

Type	Number of species	Species
Plants	3	*Dactylorhiza chuhensis*, *Echium russicum*, and *Steveniella satyrioides*
Invertebrate	4	*Callimorpha (Euplagia) quadripunctaria*, *Cerambyx cerdo*, *Coenagrion ornatum*, and *Rosalia alpine*
Reptile	2	*Emys orbicularis* and *Mauremys capsica*
Birds	33	*Accipiter brevipes*, *Aegolius funereus*, *Aegypius monachus*, *Alcedo atthis*, *Aquila chrysaetos*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus cyaneus*, *Coracias garrulus*, *Dendrocopos medius*, *Dendrocopos syriacus*, *Dryocopus martius*, *Emberiza hortulana*, *Falco peregrinus*, *Ficedula parva*, *Ficedula semitorquata*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Melanocorypha calandra*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, *Pyrrhocorax pyrrhocorax*, and *Sylvia nisoria*
Mammals	12	*Canis lupus*, *Capra aegagrus*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis blythii*, *Myotis emarginatus*, *Panthera pardus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Ursus arctos*

Number of habitats included in Resolution 4: 37

Code	Habitat
C1.32	Free-floating vegetation of eutrophic waterbodies
C2.12	Hard water springs
C2.18	Acid oligotrophic vegetation of spring brooks
C2.1A	Mesotrophic vegetation of spring brooks
C2.1B	Eutrophic vegetation of spring brooks
C2.25	Acid oligotrophic vegetation of fast-flowing streams
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.28	Eutrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
D4.1	Rich fens, including eutrophic tall-herb fens and calcareous flushes and soaks
D5.2	Beds of large sedges normally without free-standing water

[12] Habitat E1.83 Mediterraneo-montane Nardus stricta swards is removed. According to latest research, this habitat is not found in Armenia.

Code	Habitat
E1.11	Euro-Siberian rock debris swards
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.3	Sub-mediterranean humid meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.3	Acid alpine and subalpine grassland
E5.4	Moist or wet tall-herb and fern fringes and meadows
E5.5	Subalpine moist or wet tall-herb and fern stands
F3.245	Eastern mediterranean deciduous thickets
F3.247	Ponto-Sarmatic deciduous thickets
F5.13	Juniper matorral
F7	Spiny mediterranean heaths
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.22	Mixed oak-elm-ash woodland of great rivers
G1.3	Mediterranean riparian woodland
G1.A1	Oak-ash-hornbeam woodland on eutrophic and mesotrophic soils
G1.A4	Ravine and slope woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H2.3	Temperate-montane acid siliceous screes
H2.5	Acid siliceous screes of warm exposures
H3.1	Acid siliceous inland cliffs

AM0000028 'Yerakh Mountains'

The site is separated from AM0000001 Khosrov Forest site (2016) (see AM0000001 'Khosrov forest' site). Currently, it does not include settlements and infrastructure.

All previously mentioned target species are presented in the three new sites together except *Burhinus oedicnemus*. The following additions are made in the joint list of target species: one bird species - *Charadrius alexandrinus* and one mammal species - *Myotis blythi.*

All target habitats, except habitat C2.18, are presented in the three new sites together, and two new habitats (E6.2 and F6.8) are added.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 20

Type	Number of species	Species
Reptiles	1	*Testudo graeca*
Birds	16	*Aegypius monachus*, *Aquila chrysaetos*, *Bubo bubo*, *Bucanetes githagineus*, *Buteo rufinus*, *Calandrella brachydactyla*, *Charadrius alexandrinus*, *Circaetus gallicus*, *Coracias garrulus*, *Falco biarmicus*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Neophron percnopterus*, *Oenanthe pleschanka*, and *Pernis apivorus*
Mammals	3	*Canis lupus*, *Myotis blythi*, and *Rhinolophus blasii*

Number of habitats included in Resolution 4: 5

Code	Habitats
E1.2	Perennial calcareous grassland and basic steppes
E1.3	Mediterranean xeric grassland
E6.2	Continental inland salt steppes
F6.8	Xero-halophile scrubs
F7	Spiny mediterranean heaths

AM0000029 'Teksar'

The newly proposed site will significantly improve the representation of both individual target species and habitats in the Emerald Network. The Teksar Mountain requires evaluation as a potential Important Bird Area (IBA) and as a Prime Butterfly Area (PBA). Yeghegis State sanctuary is also a part of this site.

There are 131 species of birds recorded in the area, among which 101 are breeding and 30 are recorded during migration or found during the breeding season having this site as part of their foraging range.[13] Also, 31 bird species are included Resolution 6 of the Bern Convention.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 44

Type	Number of species	Species
Plants	1	*Echium russicum*
Invertebrate	1	*Callimorpha (Euplagia) quadripunctaria*
Birds	31	*Accipiter brevipes*, *Alcedo atthis*, *Anthus campestris*, *Aquila chrysaetos*, *Aquila nipalensis*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Calandrella brachydactyla*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus cyaneus*, *Circus pygargus*, *Coracias garrulus*, *Crex crex*, *Dendrocopos syriacus*, *Emberiza hortulana*, *Falco cherrug*, *Falco naumanni*, *Falco peregrinus*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lanius minor*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Sylvia nisoria*
Mammals	11	*Canis lupus*, *Capra aegagrus*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis blythii*, *Panthera pardus*, *Rhinolophus blasii*, *Rhinolophus euryale*, *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, and *Ursus arctos*

Number of habitats included in Resolution 4: 16

Code	Habitats
C2.27	Mesotrophic vegetation of fast-flowing streams
C2.33	Mesotrophic vegetation of slow-flowing rivers
C3.55	Sparsely vegetated river gravel banks
C3.62	Unvegetated river gravel banks
E1.3	Mediterranean xeric grassland
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
E4.4	Calcareous alpine and subalpine grassland
F7	Spiny mediterranean heaths
G1.11	Riverine willow woodland
G1.A4	Ravine and slope woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas
G3.9	Coniferous woodland dominated by *Cupressaceae* or *Taxaceae*
H2.4	Temperate-montane calcareous and ultra-basic screes
H2.6	Calcareous and ultra-basic screes of warm exposures
H3.2	Basic and ultra-basic inland cliffs

[13] Aghababyan, K., G. Khanamirian, A. Khachatryan, B. Martirosyan, V. Grigoryan, T. Zuerker, and S. Baloyan. 2022. "Evaluation of Importance of Teksar Mountain of Armenia for Bird and Butterfly Protection." *International Journal of Zoology and Animal Biology* 5 (5): DOI: 10.23880/izab-16000401.

AM0000030 'Voskepar'

The newly proposed site is located in the Tavush region and borders with the AM0000005 'Ijevan' site. The vegetation in the site is represented mainly by beech and oak forests and subalpine meadows. Establishing this site as a candidate will promote the continuity of forest and meadow ecosystems and habitats included in Resolution 4 of the Berne Convention, as well as support to better cover the populations of species included in Resolution 6.

The target species and habitats of the proposed site are presented below.

Number of species included in Resolution 6: 37

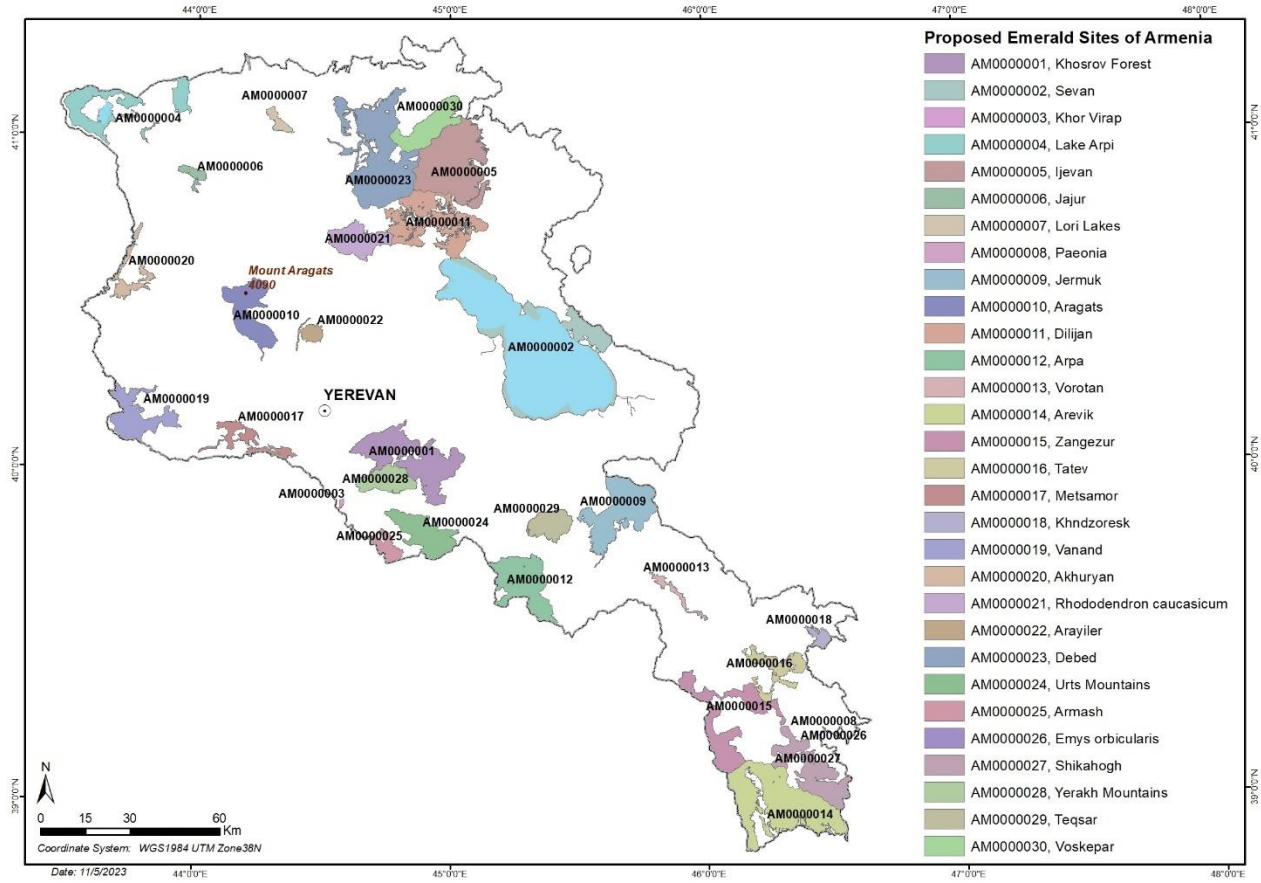
Type	Number of species	Species
Invertebrate	3	*Callimorpha (Euplagia) quadripunctaria*, *Cerambyx cerdo*, and *Rosalia alpina*
Reptiles	1	*Testudo graeca*
Birds	25	*Aquila chrysaetos*, *Aquila pomarina*, *Bubo bubo*, *Buteo rufinus*, *Caprimulgus europaeus*, *Circaetus gallicus*, *Circus macrourus*, *Crex crex*, *Dendrocopos medius*, *Dryocopus martius*, *Emberiza hortulana*, *Falco naumanni*, *Falco peregrinus*, *Ficedula parva*, *Ficedula semitorquata*, *Gypaetus barbatus*, *Gyps fulvus*, *Hieraaetus pennatus*, *Lanius collurio*, *Lullula arborea*, *Luscinia svecica*, *Milvus migrans*, *Neophron percnopterus*, *Pernis apivorus*, and *Pyrrhocorax pyrrhocorax*
Mammals	8	*Canis lupus*, *Lutra lutra*, *Lynx lynx*, *Miniopterus schreibersii*, *Myotis blythii*, *Rhinolophus hipposideros*, *Rhinolophus ferrumequinum*, and *Ursus arctos*

Number of habitats included in Resolution 4: 10

Code	Habitats
C1.33	Rooted submerged vegetation of eutrophic waterbodies
C2.28	Eutrophic vegetation of fast-flowing streams
E2.3	Mountain hay meadows
E3.4	Moist or wet eutrophic and mesotrophic grassland
F3.247	Ponto-Sarmatic deciduous thickets
F9.1	Riverine scrub
G1.11	Riverine willow woodland
G1.6	Beech woodland
G1.A4	Ravine and slope woodland
G1.A7	Mixed deciduous woodland of the Black and Caspian Seas

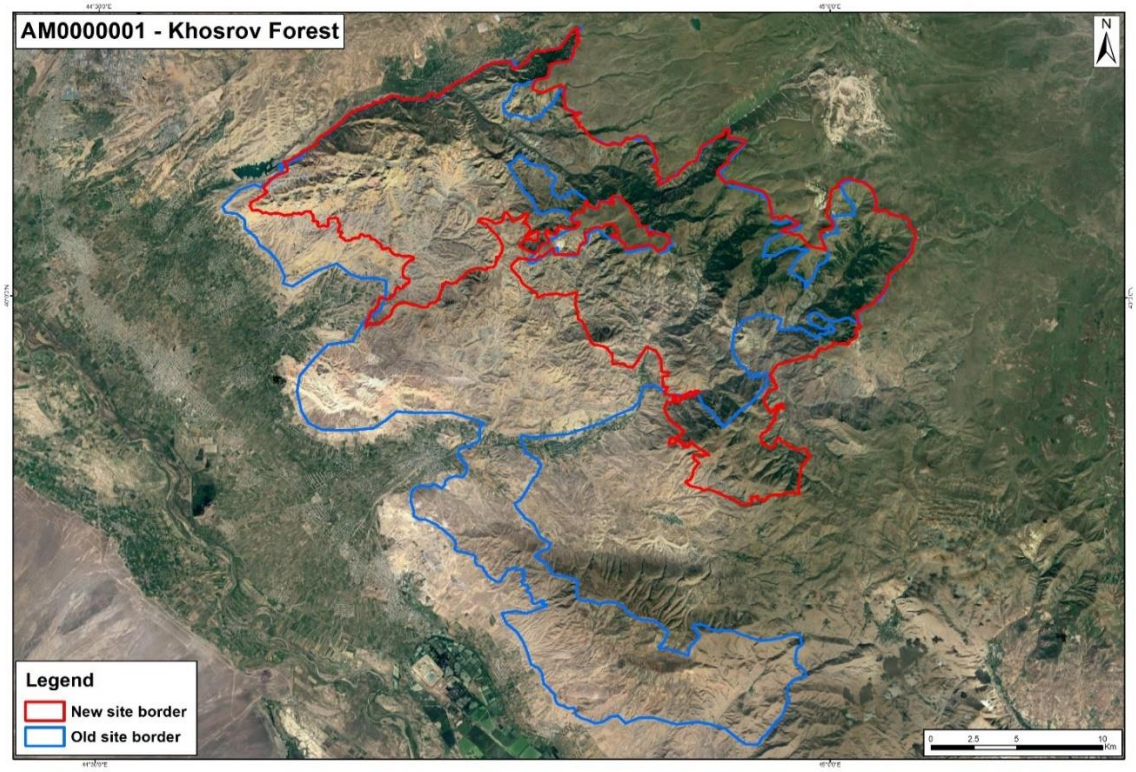
Proposed (Modified) Emerald Sites (Maps)

Figure 1. Proposed Emerald sites, Armenia (2023)



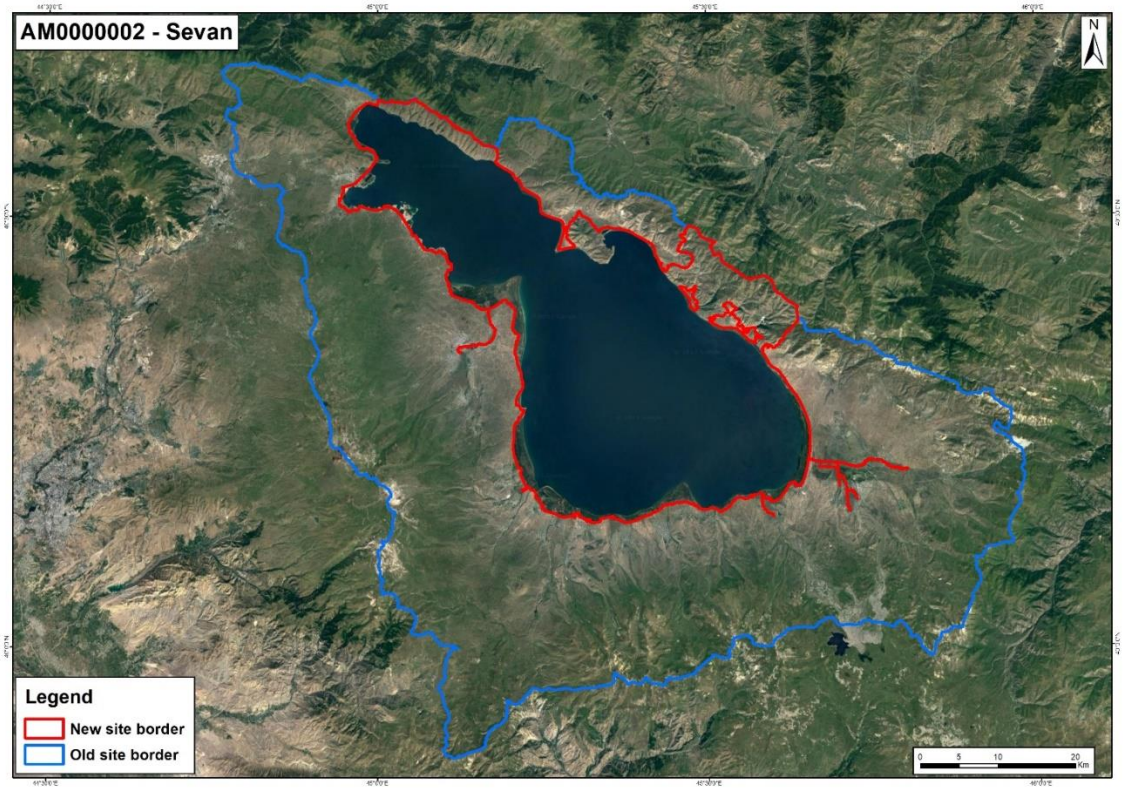
Source: Developed by kartECO for the World Bank

Figure 2. Map of Emerald site 'Khosrov forest' - AM0000001 with proposed and previous (2016) boundaries



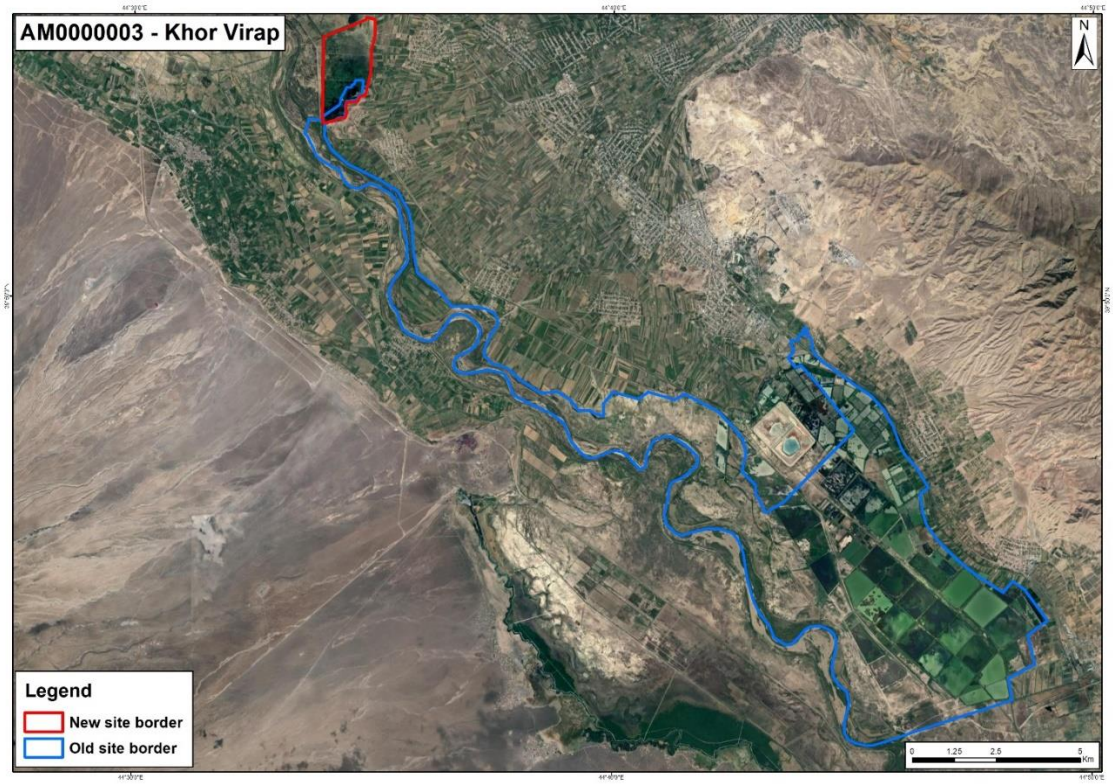
Source: Developed by kartECO for the World Bank

Figure 3. Map of Emerald site 'Sevan' - AM0000002 with proposed and previous (2016) boundaries



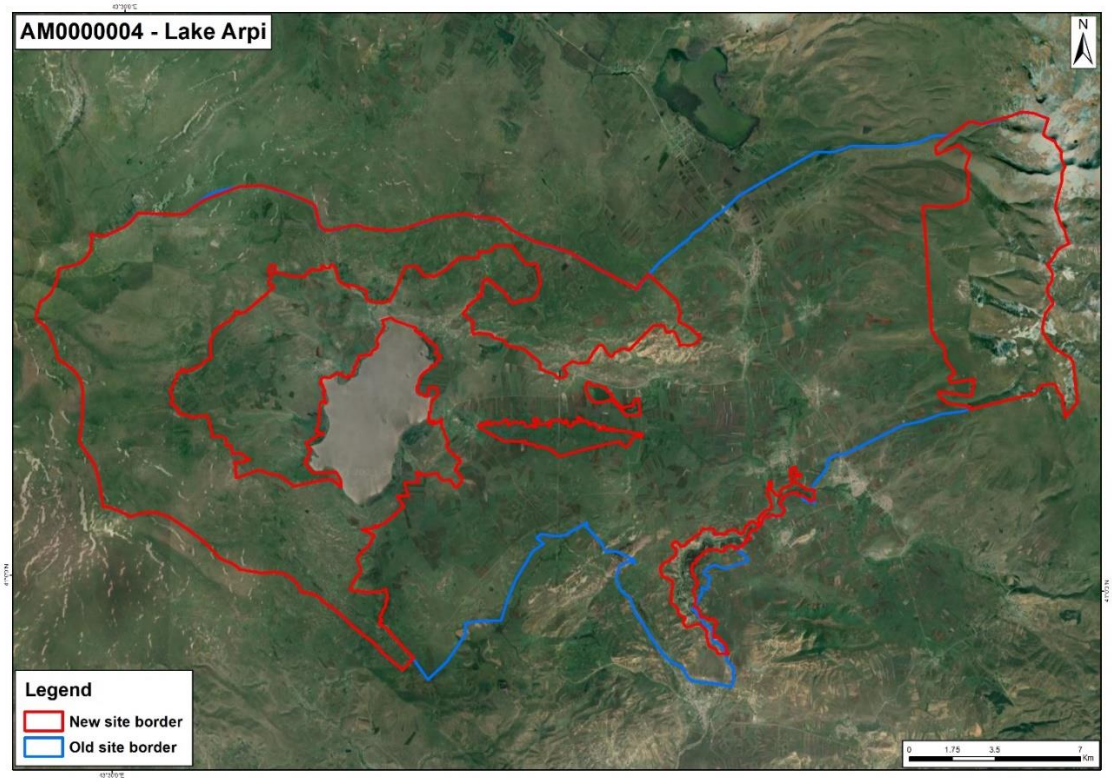
Source: Developed by kartECO for the World Bank

Figure 4. Map of Emerald site 'Khor Virap' - AM0000003 with proposed and previous (2016) boundaries



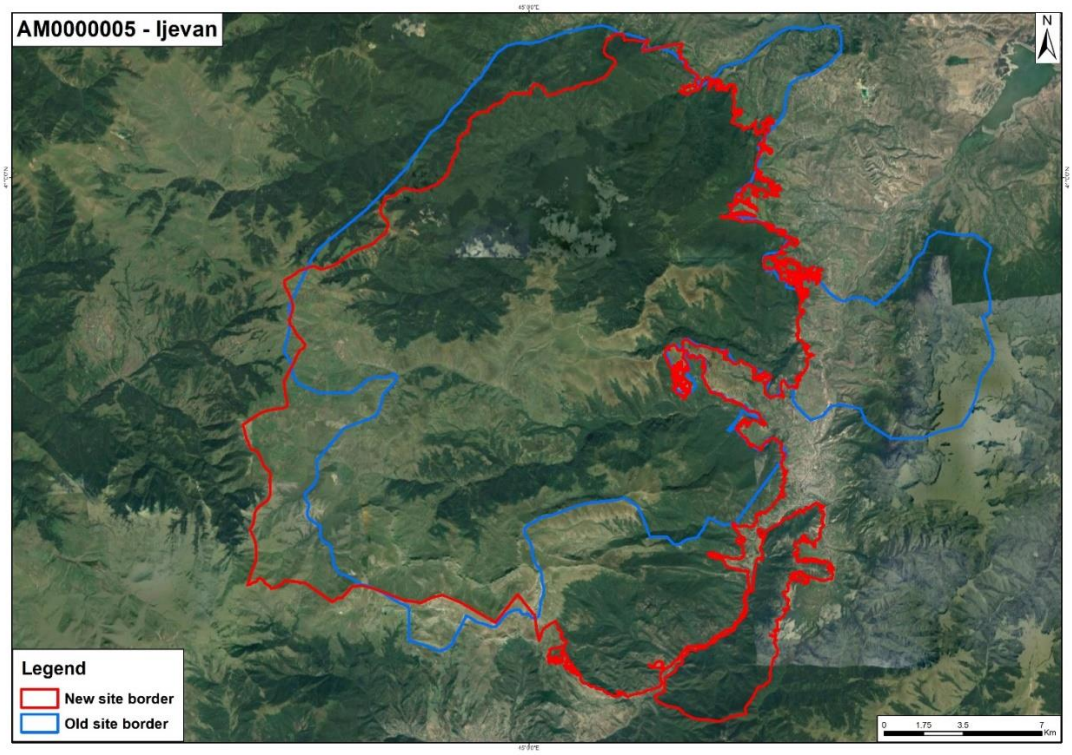
Source: Developed by kartECO for the World Bank

Figure 5. Map of Emerald site 'Lake Arpi' - AM0000004 with proposed and previous (2016) boundaries



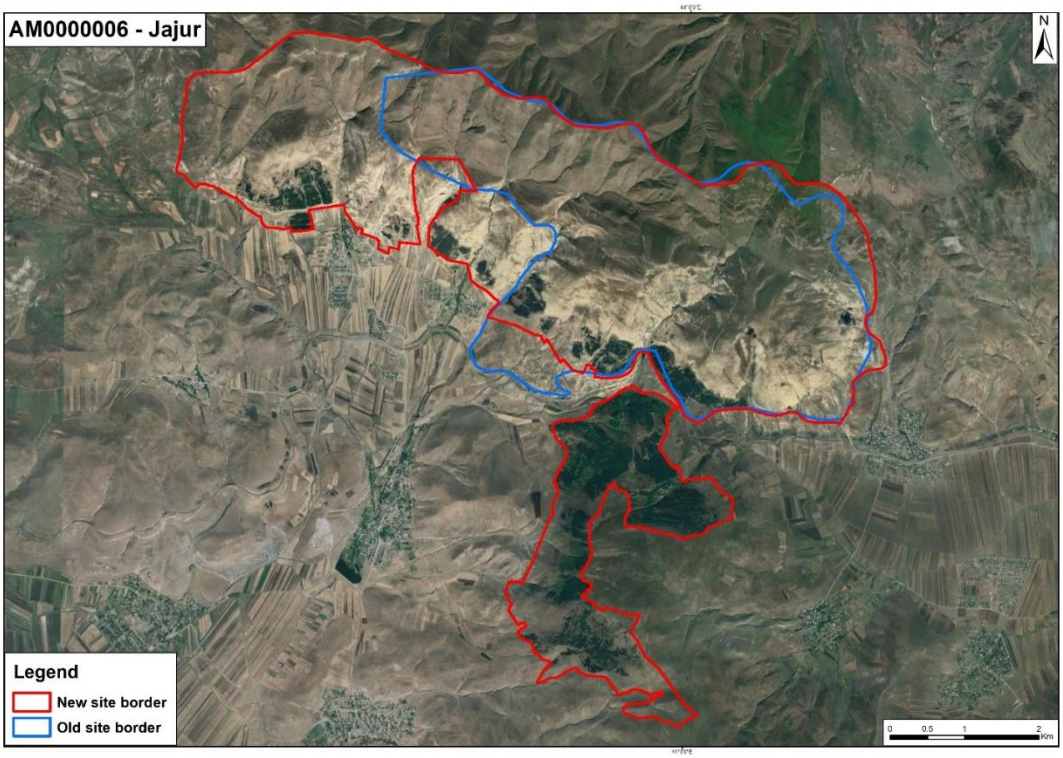
Source: Developed by kartECO for the World Bank

Figure 6. Map of Emerald site 'Ijevan' - AM0000005 with proposed and previous (2016) boundaries



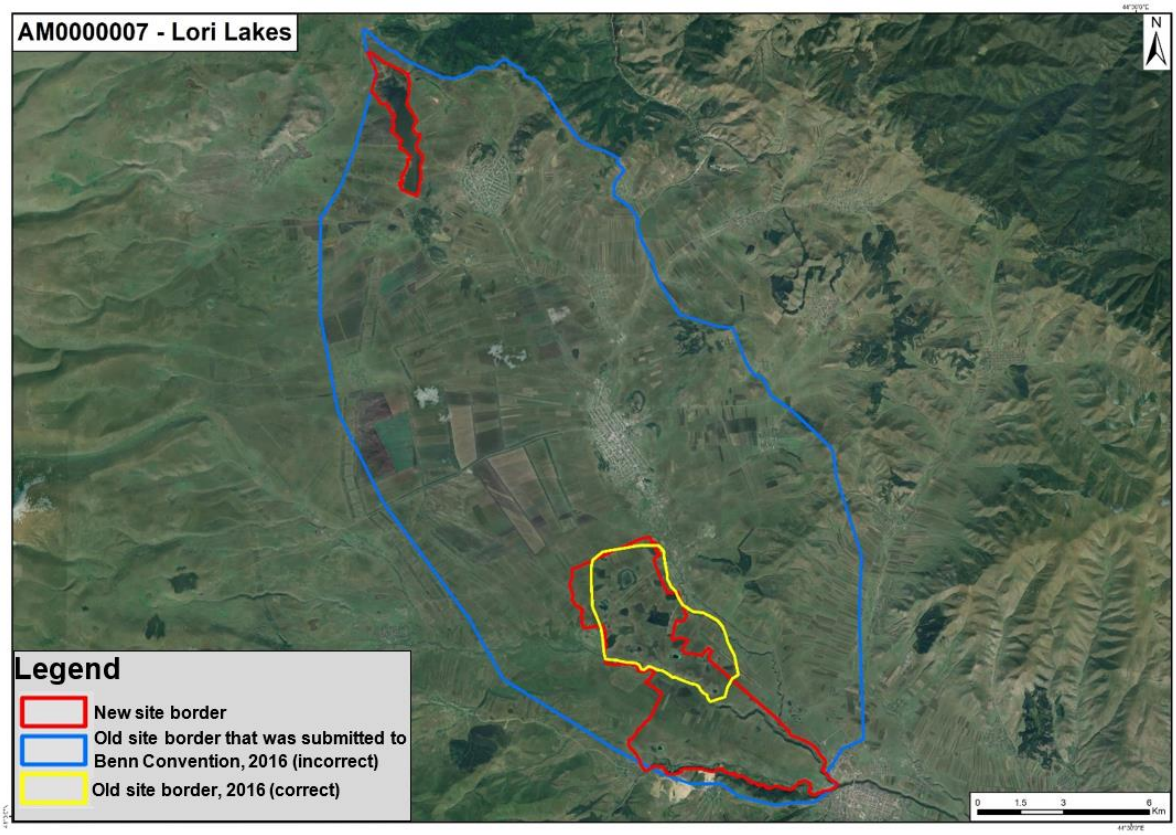
Source: Developed by kartECO for the World Bank

Figure 7. Map of Emerald site 'Jajur' - AM0000006 with proposed and previous (2016) boundaries



Source: Developed by kartECO for the World Bank

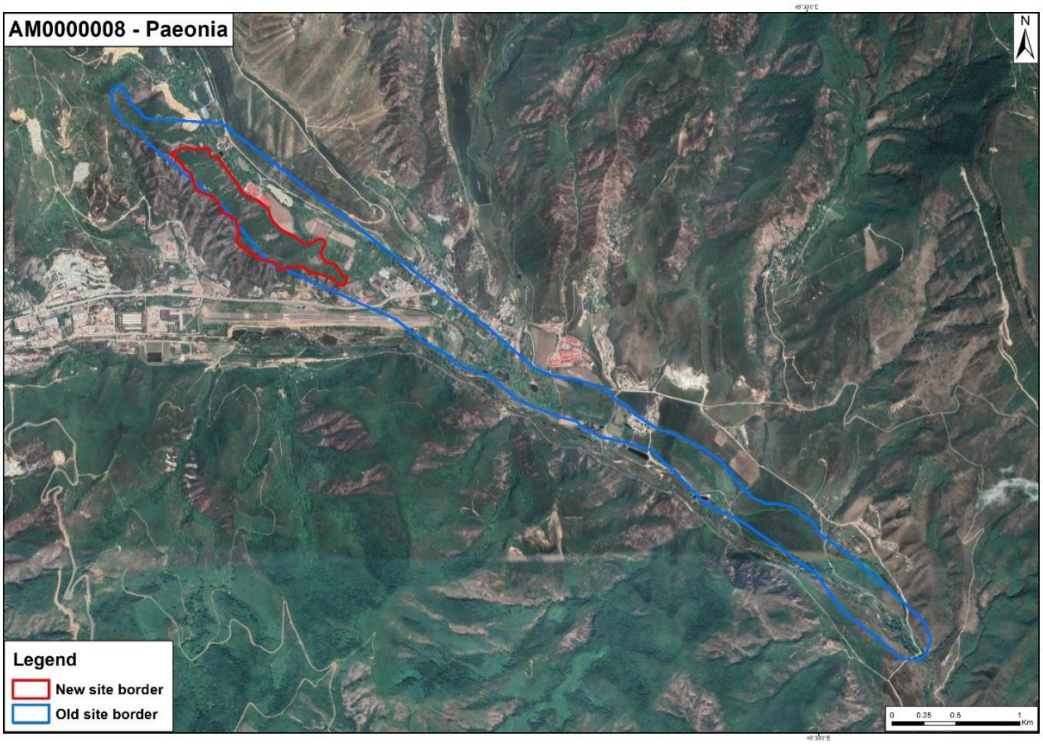
Figure 8. Map of Emerald site 'Lori Lakes' - AM0000007 with (a) new site border; (b) previous site border (incorrect), 'previous site border that was submitted to Benn Convention, 2016'; and (c) previous site border (correct) 'previous site border, 2016'[14]



Source: Developed by kartECO for the World Bank

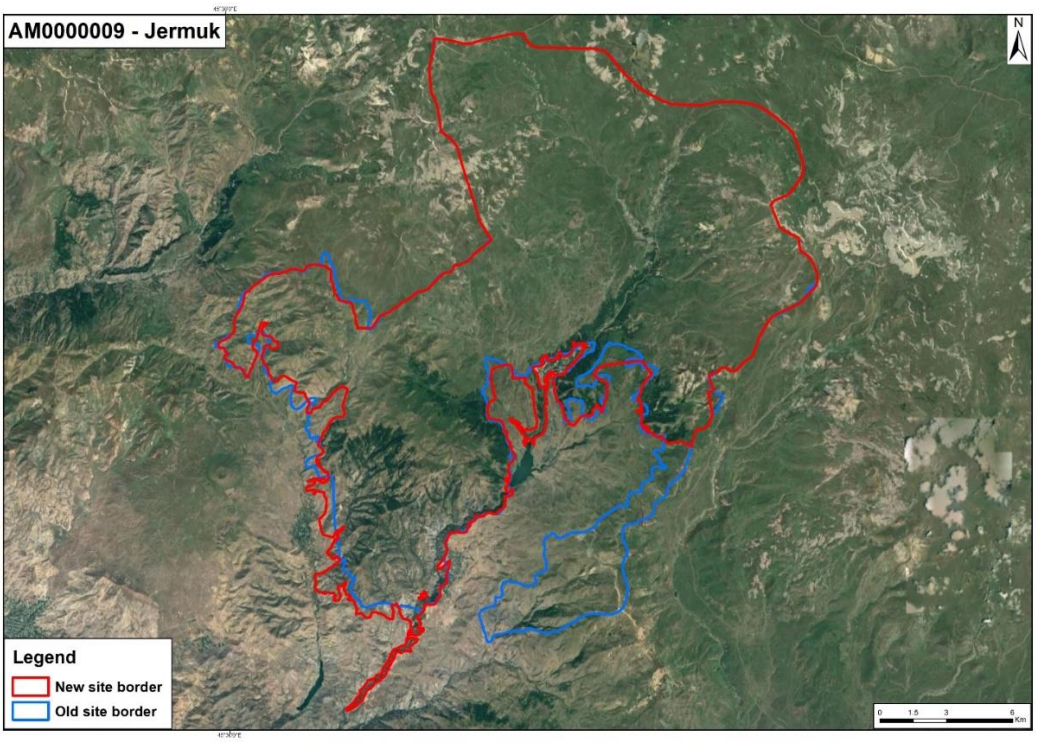
[14] The boundaries of the AM0000007 'Lori lakes' shp file in the Emerald Network database are incorrect, showing a larger area (20,906 ha instead of 1,596.4 ha). It is clearly a boundary mapping error in the database that has been corrected in the current recommended context. Apart from the incorrect shp file ('Site display' in sdf), the current information provided in the respective sdf file is correct, https://natura2000.eea.europa.eu/Emerald/SDF.aspx?site=AM0000007. For clarification, the map of the recommended Emerald site 'Lori Lakes' - AM0000007 includes both proposed and old-incorrect boundaries that were submitted to the Benn Convention in 2016 and old-correct boundaries.

Figure 9. Map of Emerald site 'Paeonia' - AM0000008 with proposed and previous (2016) boundaries



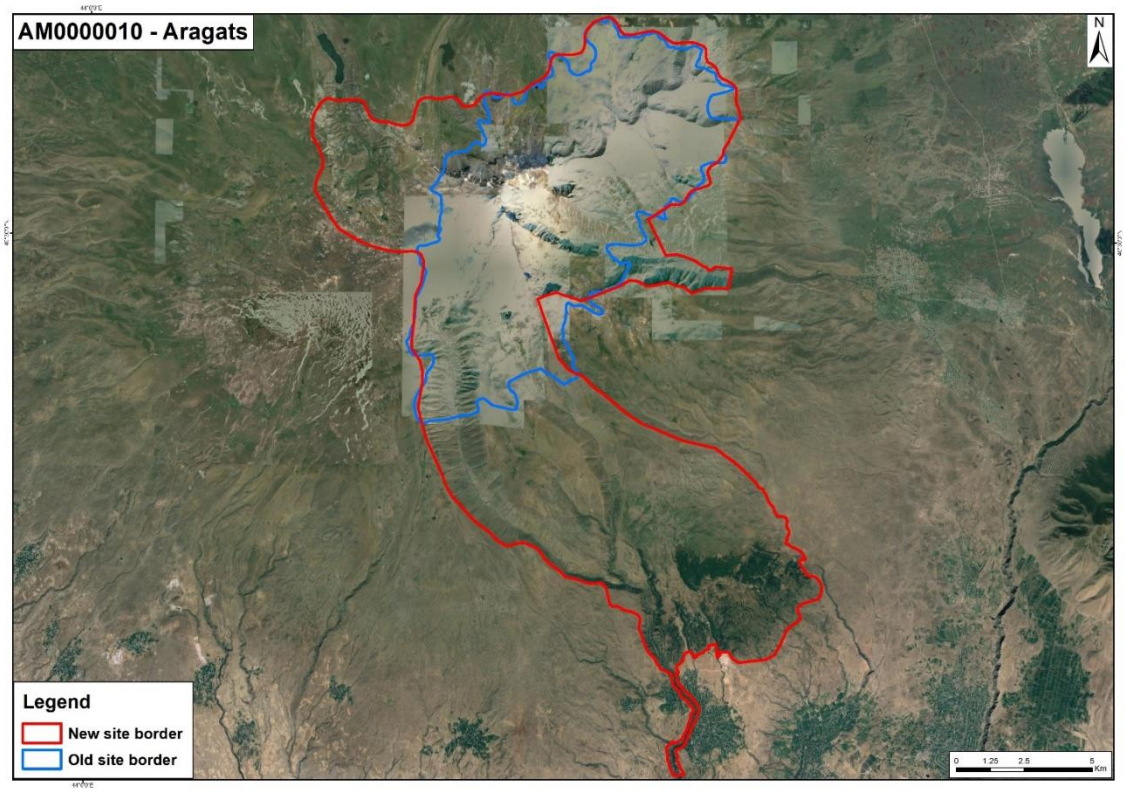
Source: Developed by kartECO for the World Bank

Figure 10. Map of Emerald site 'Jermuk' - AM0000009 with proposed and previous (2016) boundaries



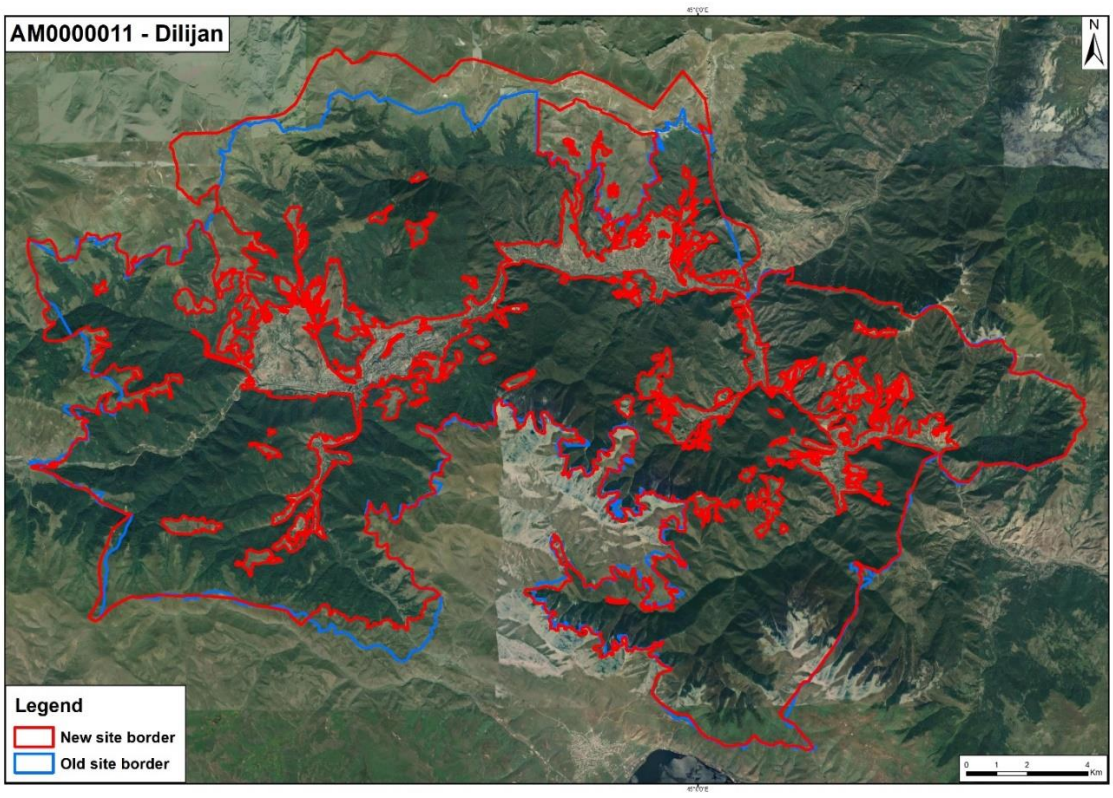
Source: Developed by kartECO for the World Bank

Figure 11. Map of Emerald site 'Aragats' - AM0000010 with proposed and previous (2016) boundaries



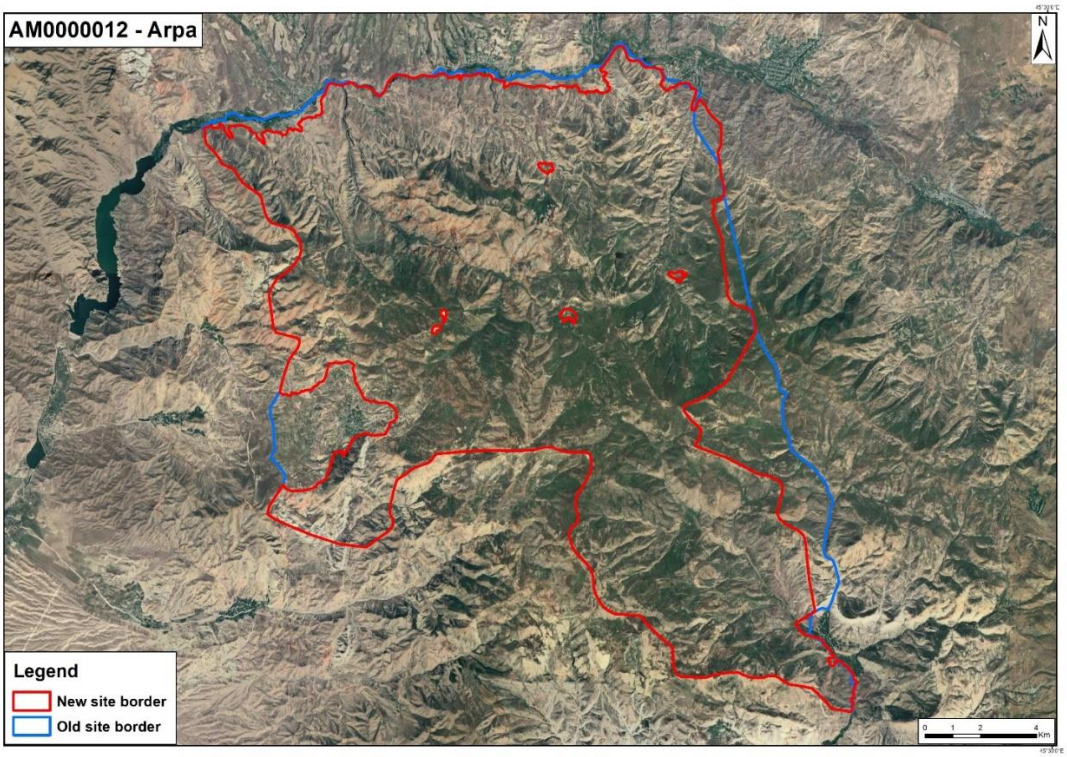
Source: Developed by kartECO for the World Bank

Figure 12. Map of Emerald site 'Dilijan' - AM0000011 with proposed and previous (2016) boundaries



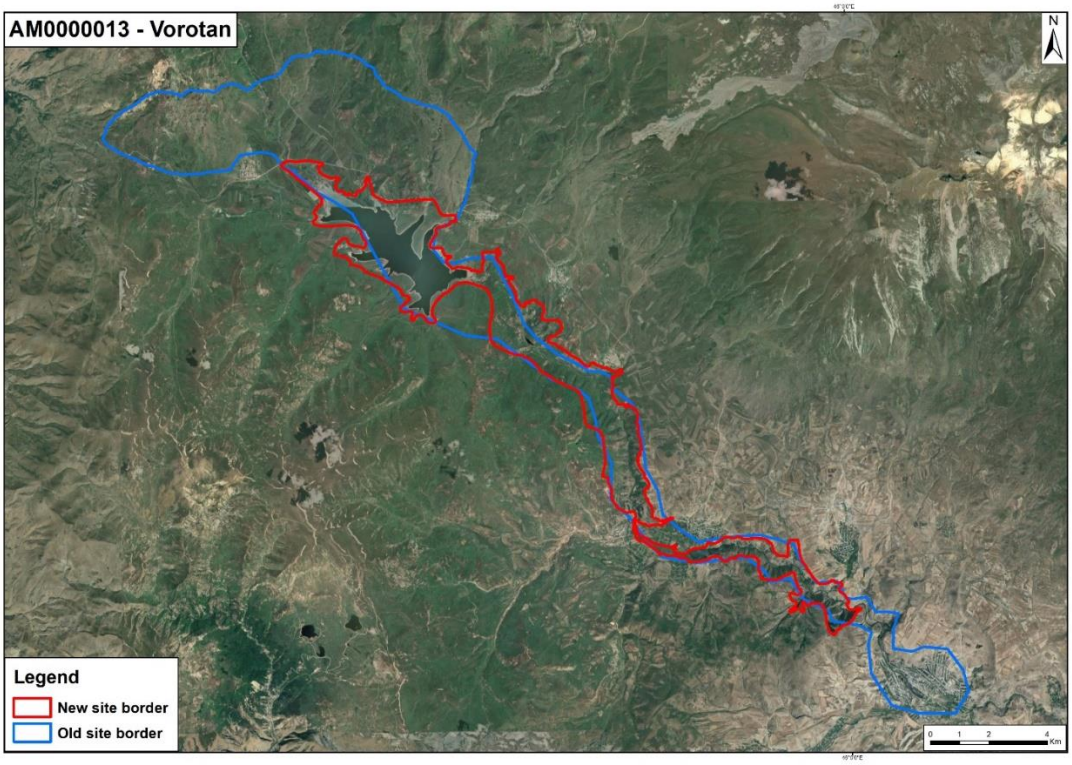
Source: Developed by kartECO for the World Bank

Figure 13. Map of Emerald site 'Arpa' - AM0000012 with proposed and previous (2016) boundaries



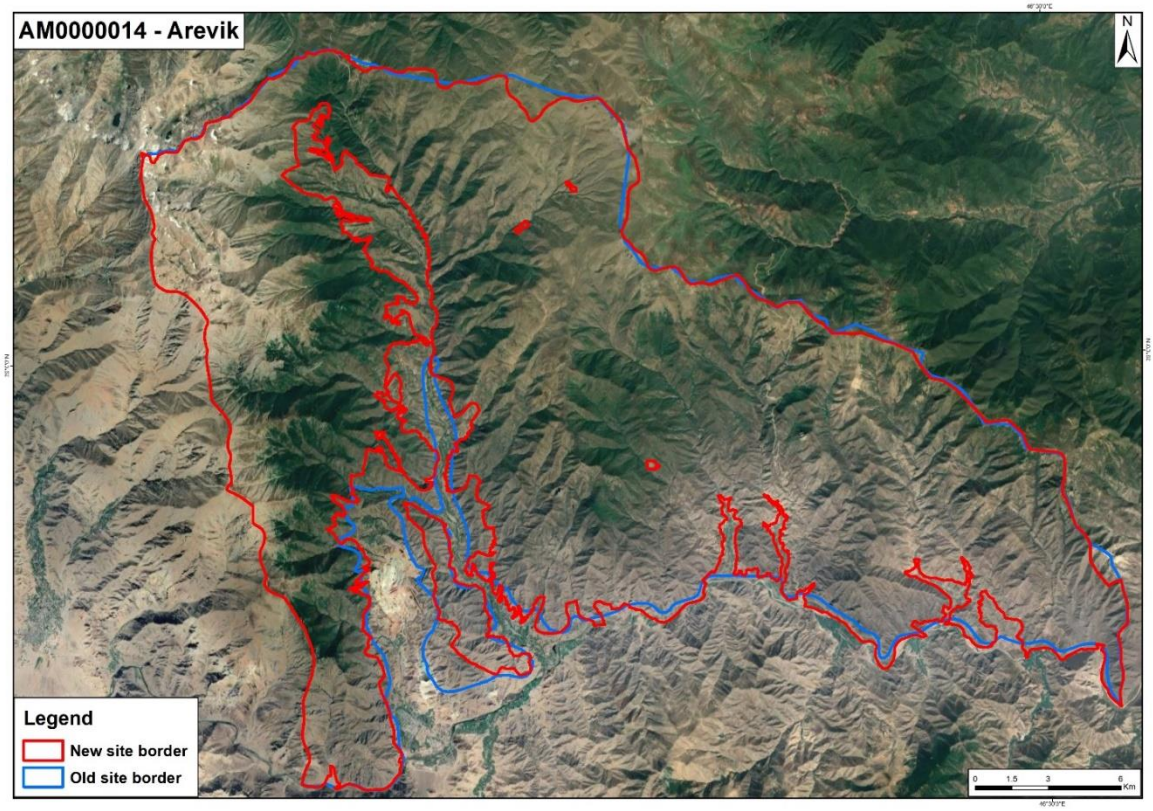
Source: Developed by kartECO for the World Bank

Figure 14. Map of Emerald site 'Vorotan' - AM0000013 with proposed and previous (2016) boundaries



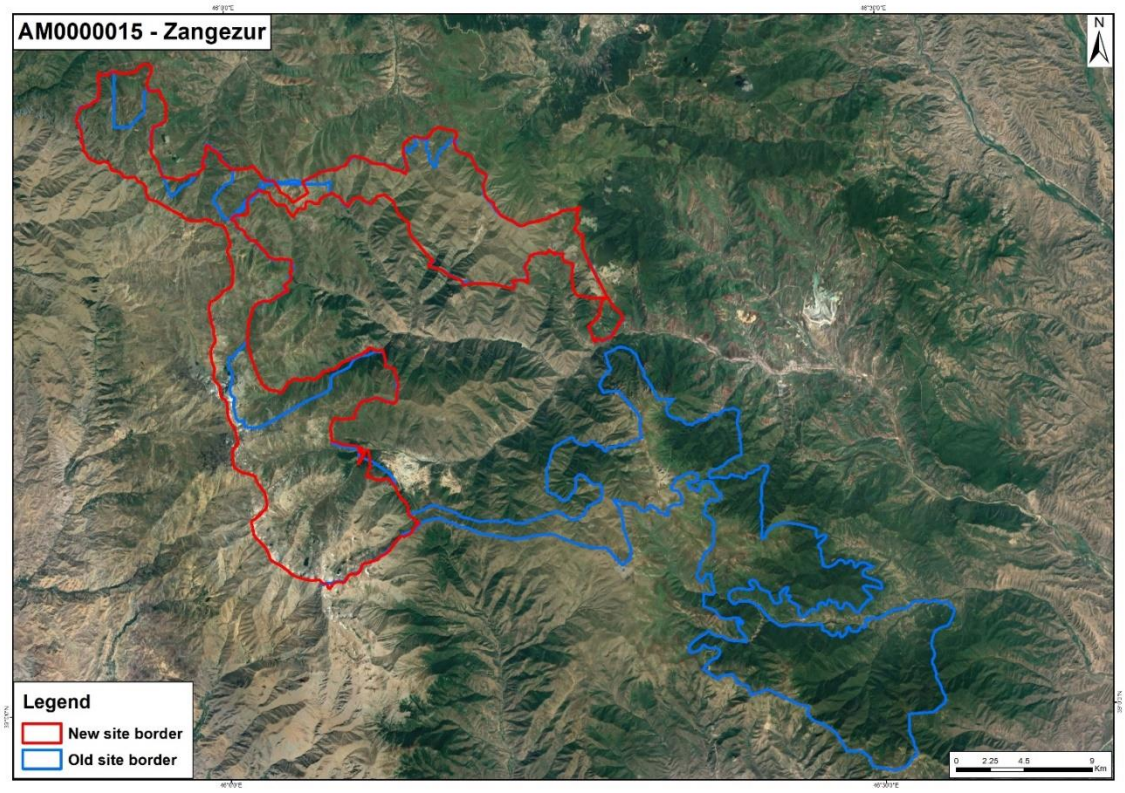
Source: Developed by kartECO for the World Bank

Figure 15. Map of Emerald site 'Arevik' - AM0000014 with proposed and previous (2016) boundaries



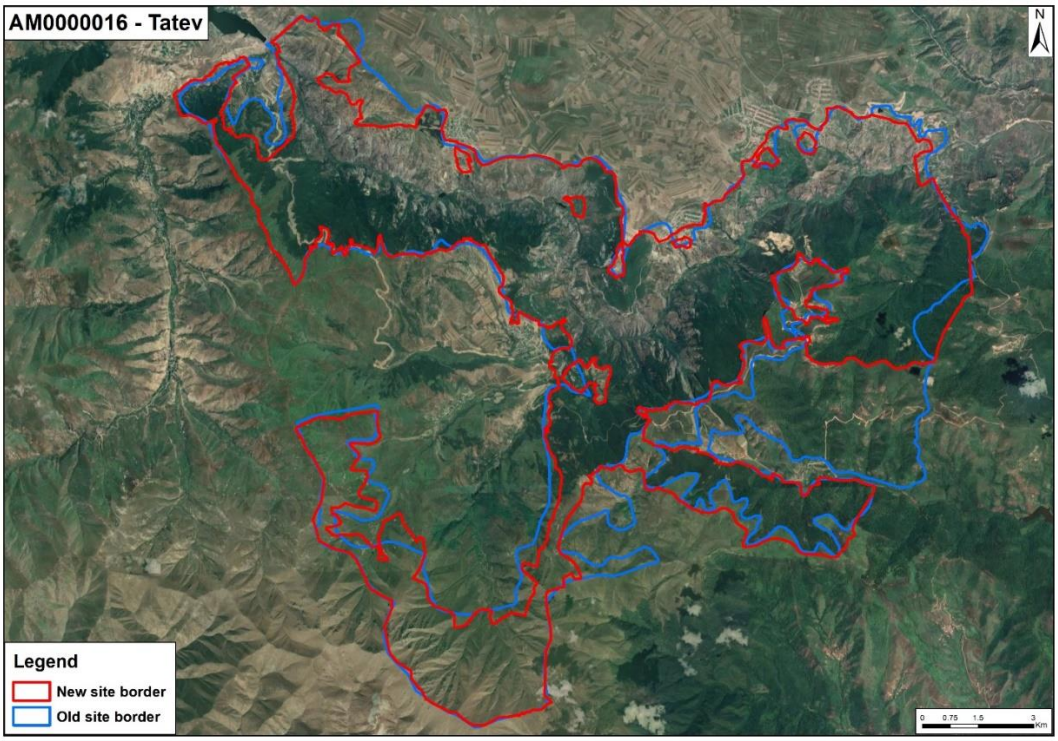
Source: Developed by kartECO for the World Bank

Figure 16. Map of Emerald site 'Zangezur' - AM0000015 with proposed and previous (2016) boundaries



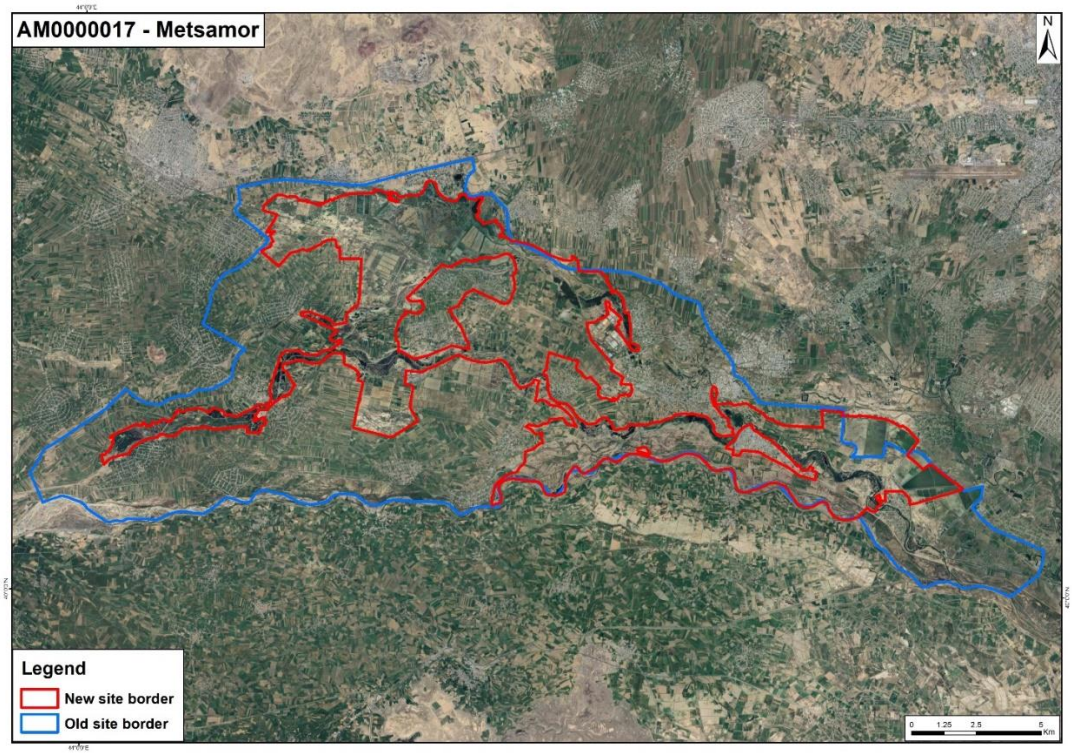
Source: Developed by kartECO for the World Bank

Figure 17. Map of Emerald site 'Tatev' - AM0000016 with proposed and previous (2016) boundaries



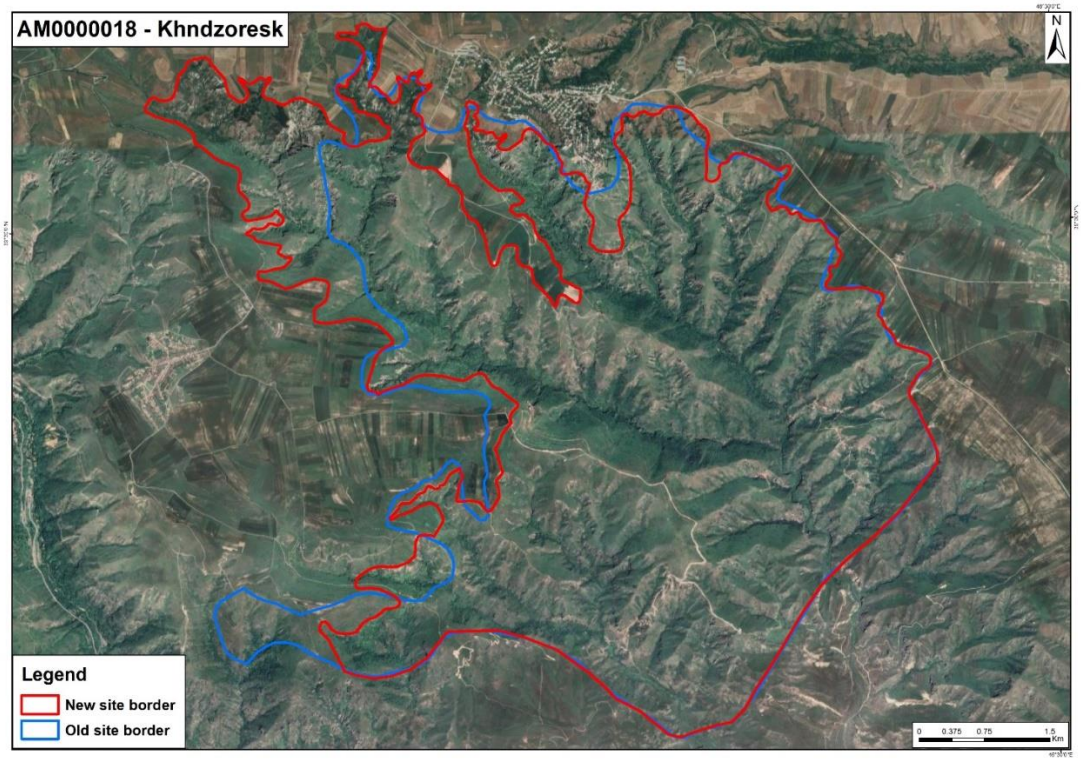
Source: Developed by kartECO for the World Bank

Figure 18. Map of Emerald site 'Metsamor' - AM0000017 with proposed and previous (2016) boundaries



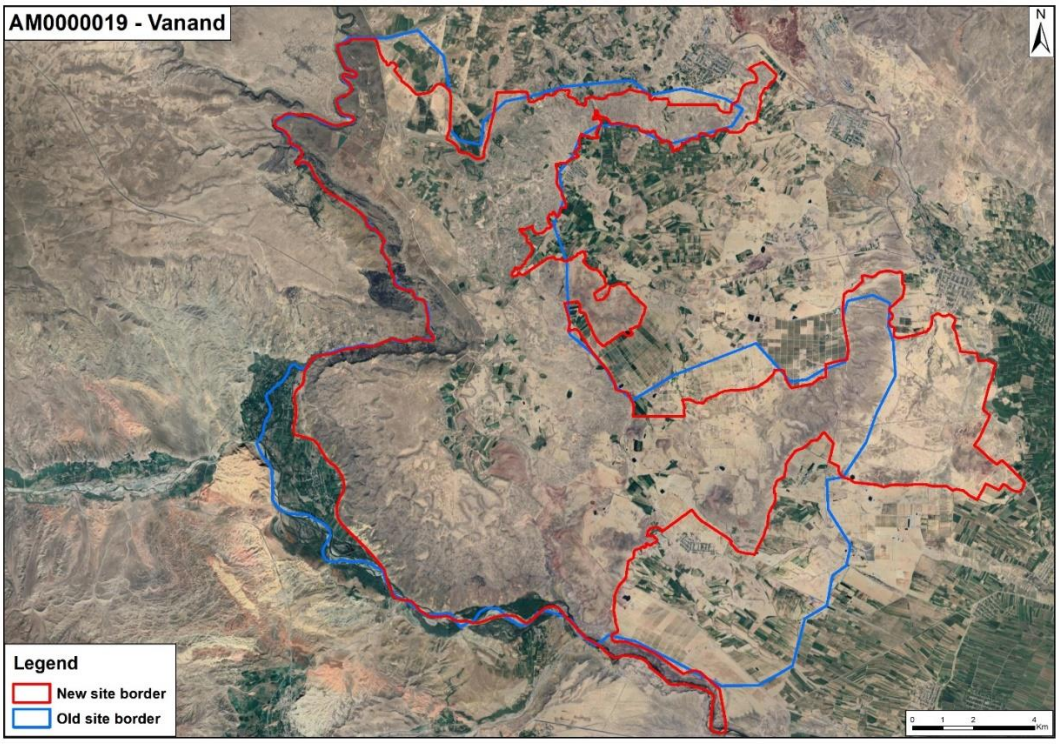
Source: Developed by kartECO for the World Bank

Figure 19. Map of Emerald site 'Khndzoresk' - AM0000018 with proposed and previous (2016) boundaries



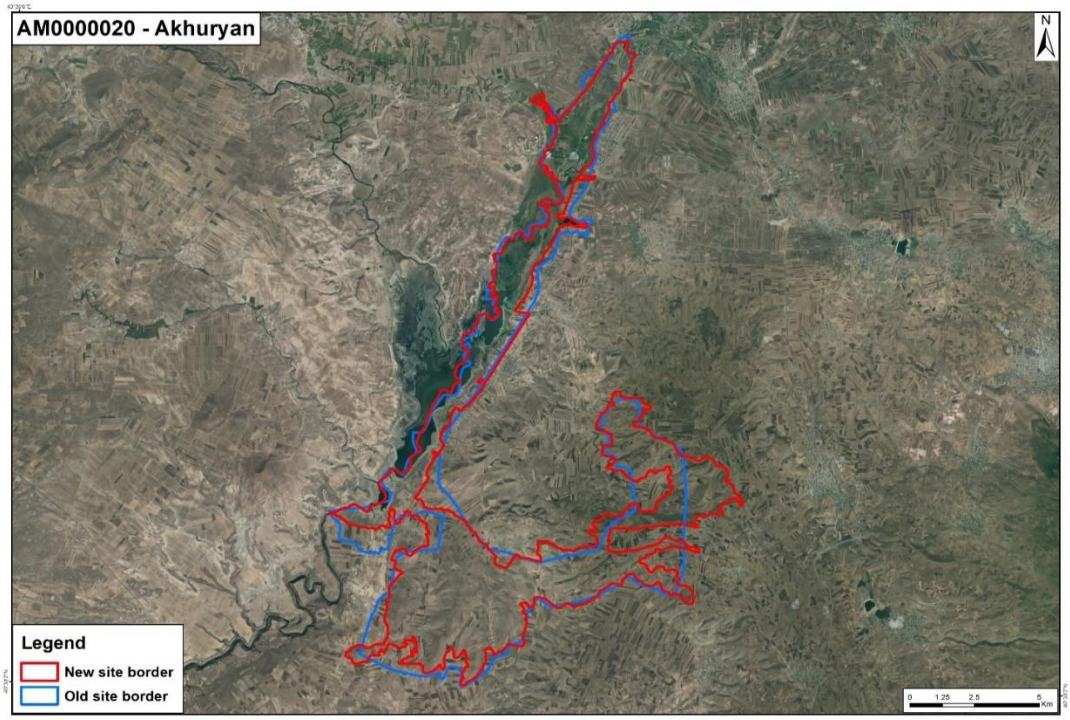
Source: Developed by kartECO for the World Bank

Figure 20. Map of Emerald site 'Vanand' - AM0000019 with proposed and previous (2016) boundaries



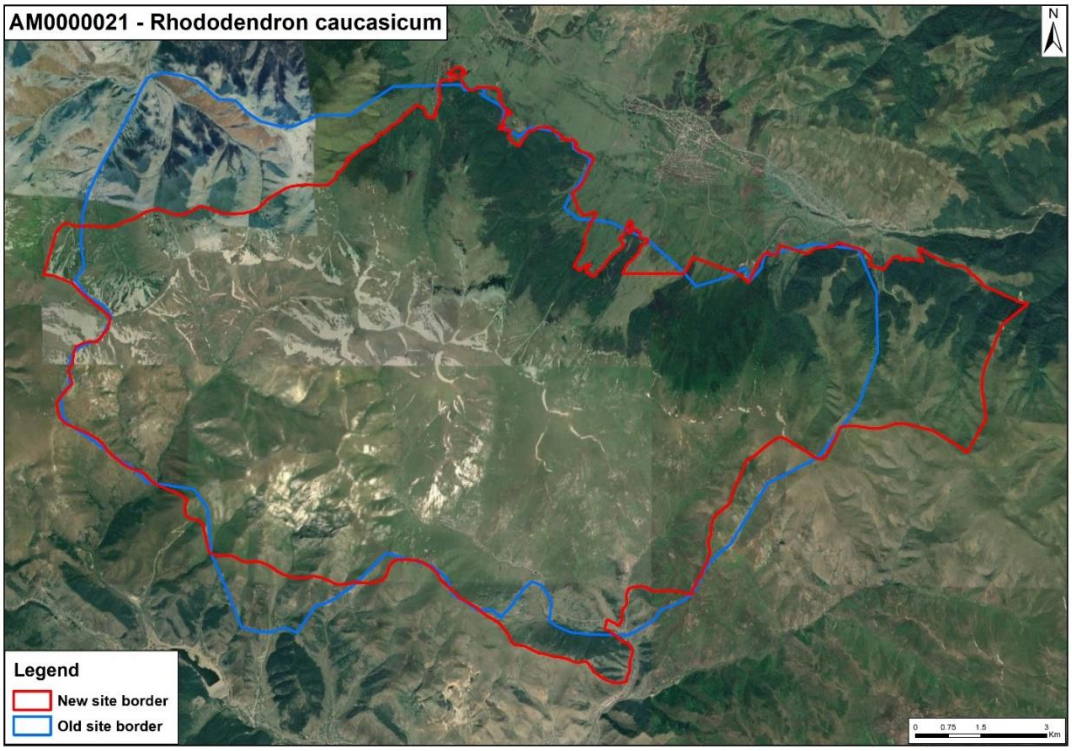
Source: Developed by kartECO for the World Bank

Figure 21. Map of Emerald site 'Akhuryan' - AM0000020 with proposed and previous (2016) boundaries



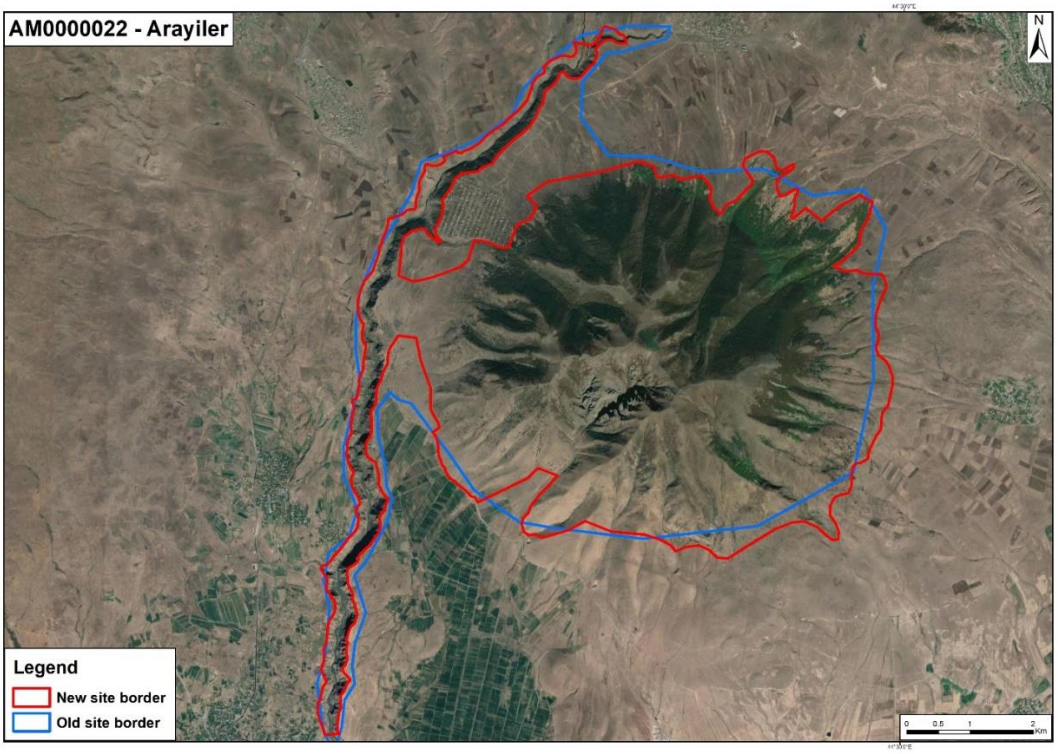
Source: Developed by kartECO for the World Bank

Figure 22. Map of Emerald site 'Rhododendron caucasicus' - AM0000021 with proposed and previous (2016) boundaries



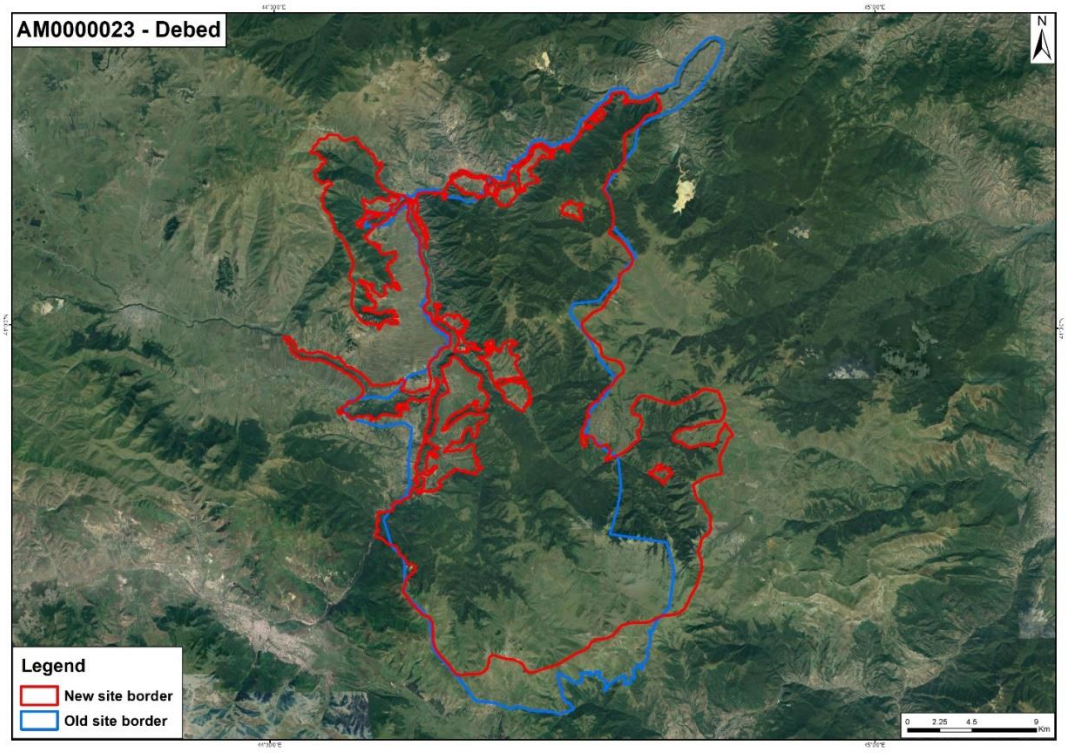
Source: Developed by kartECO for the World Bank

Figure 23. Map of Emerald site 'Arayiler' - AM0000022 with proposed and previous (2016) boundaries



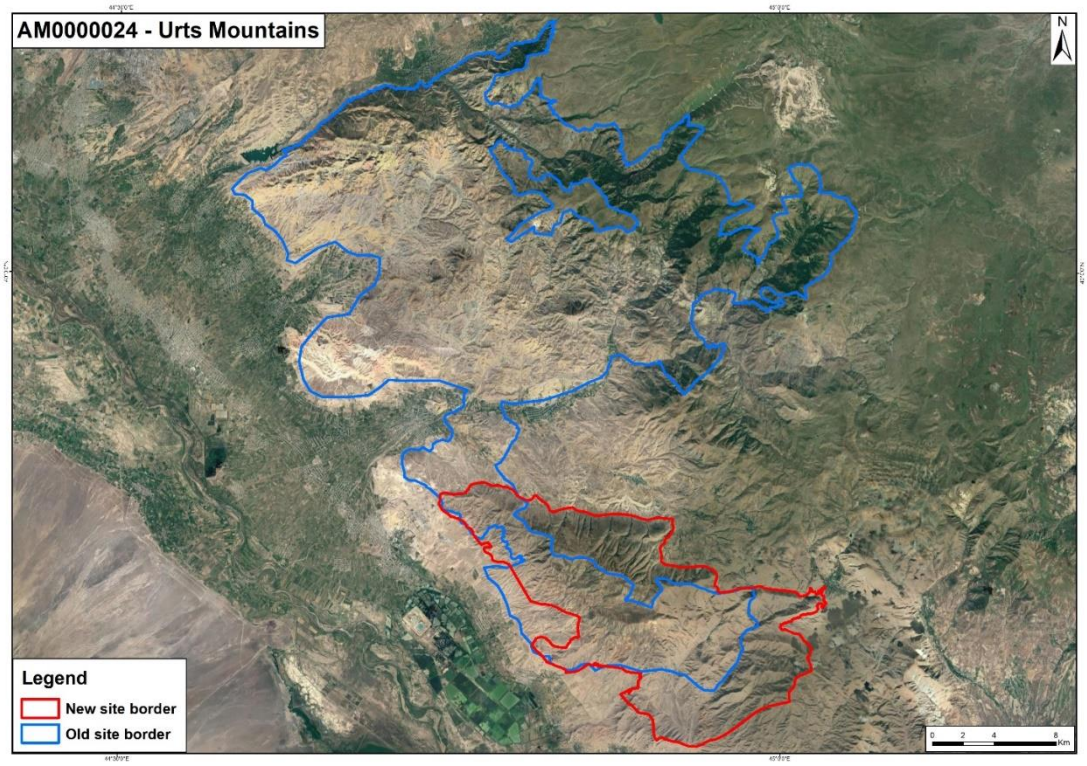
Source: Developed by kartECO for the World Bank

Figure 24. Map of Emerald site 'Debed' - AM0000023 with proposed and previous (2016) boundaries



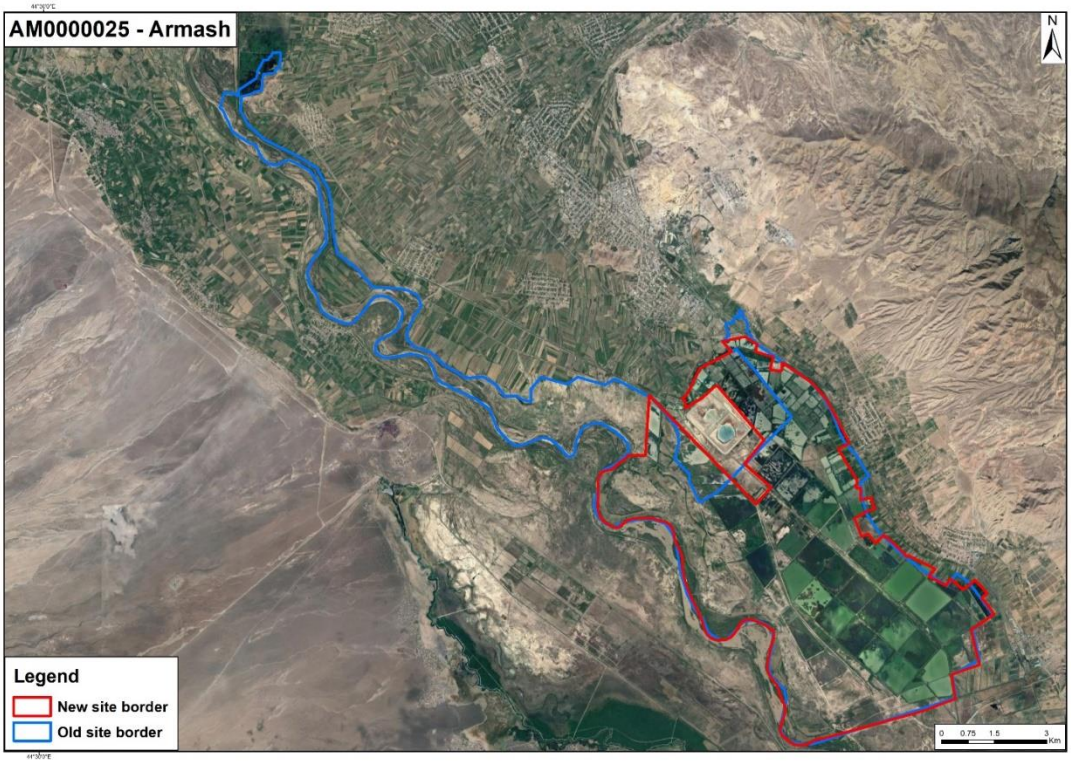
Source: Developed by kartECO for the World Bank

Figure 25. Map of Emerald site 'Urts Mountains' - AM0000024 with proposed and previous (2016) boundaries



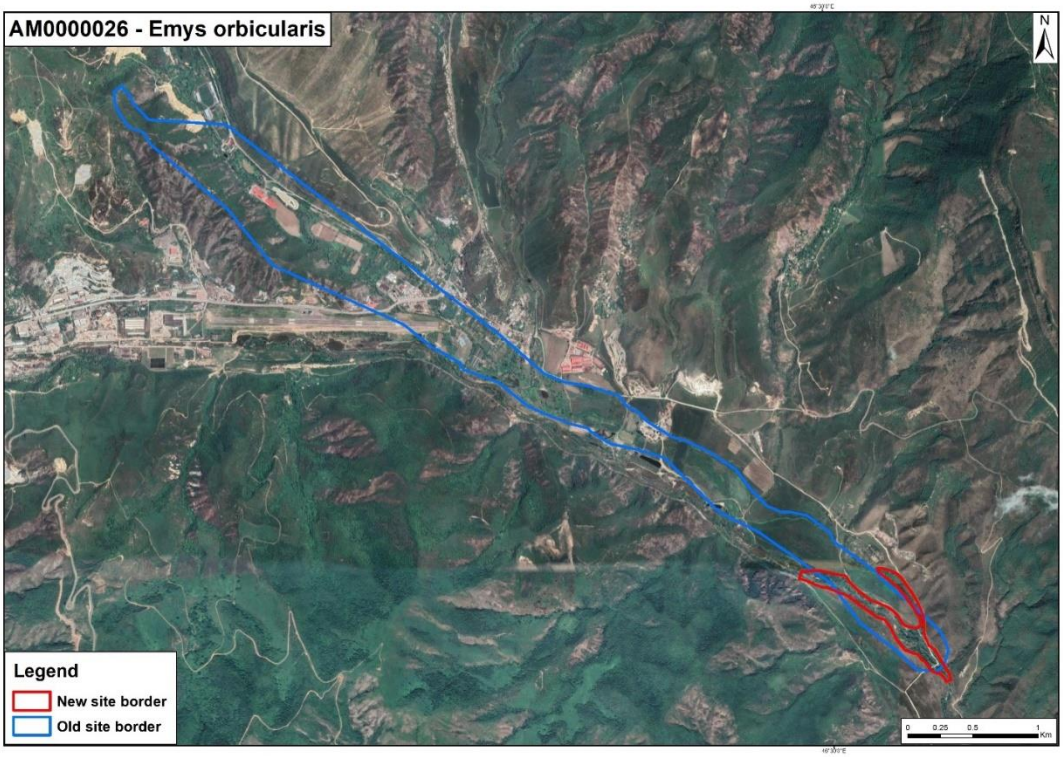
Source: Developed by kartECO for the World Bank

Figure 26. Map of Emerald site 'Armash' - AM0000025 with proposed and previous (2016) boundaries



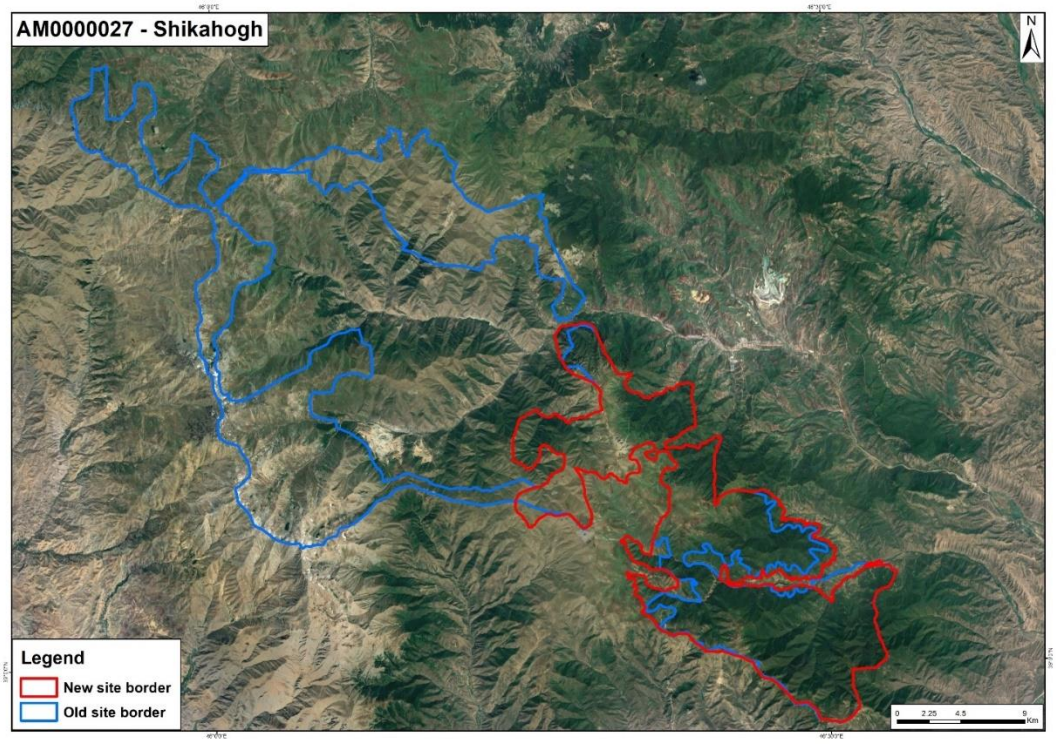
Source: Developed by kartECO for the World Bank

Figure 27. Map of Emerald site 'Emys orbicularis' - AM0000026 with proposed and previous (2016) boundaries



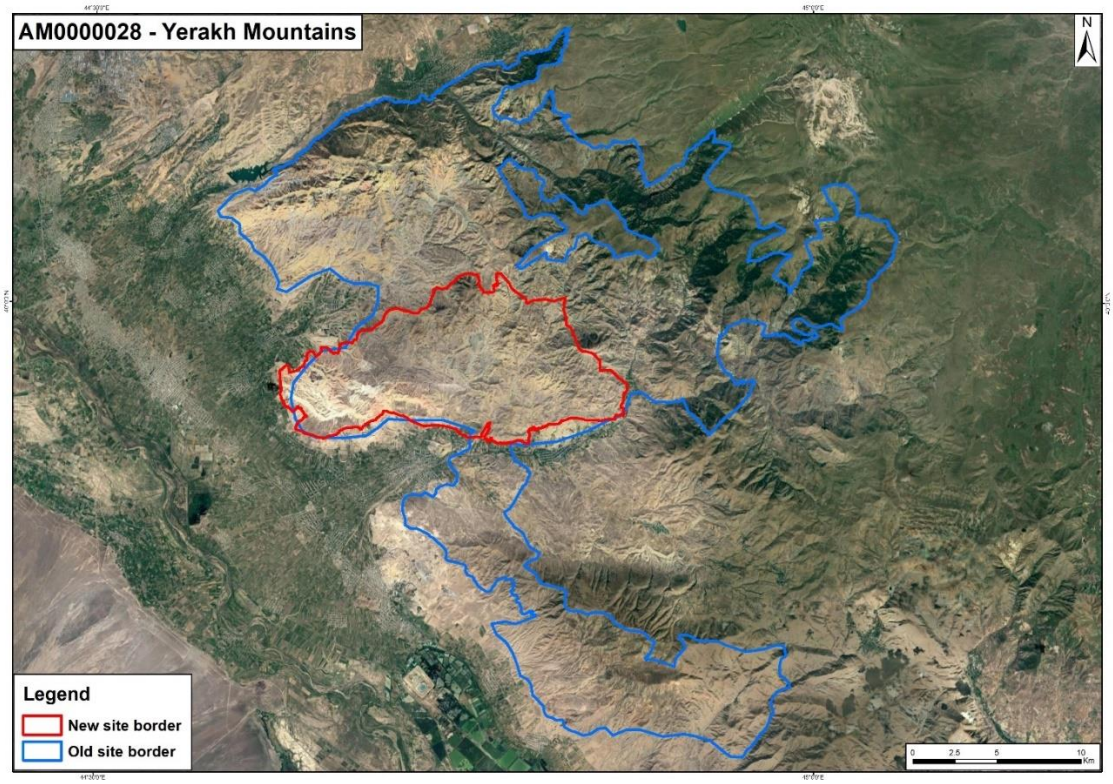
Source: Developed by kartECO for the World Bank

Figure 28. Map of Emerald site 'Shikahogh' - AM0000027 with proposed and previous (2016) boundaries



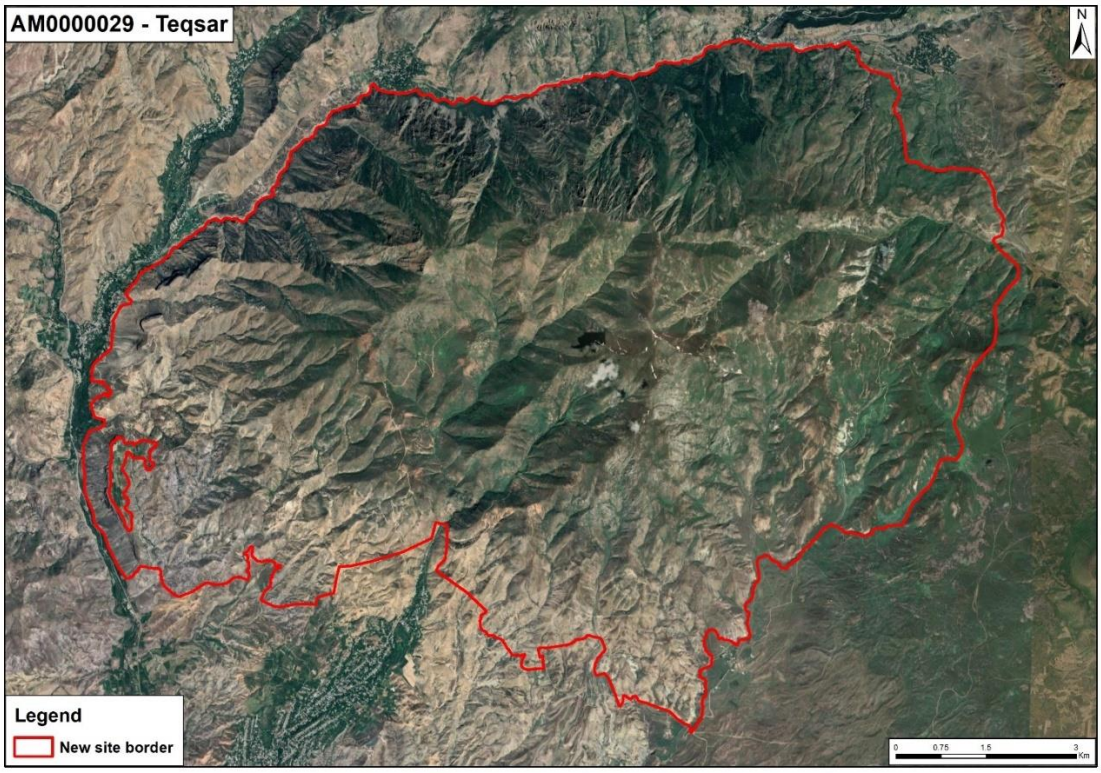
Source: Developed by kartECO for the World Bank

Figure 29. Map of Emerald site 'Yerakh Mountains' - AM0000028 with proposed and previous (2016) boundaries



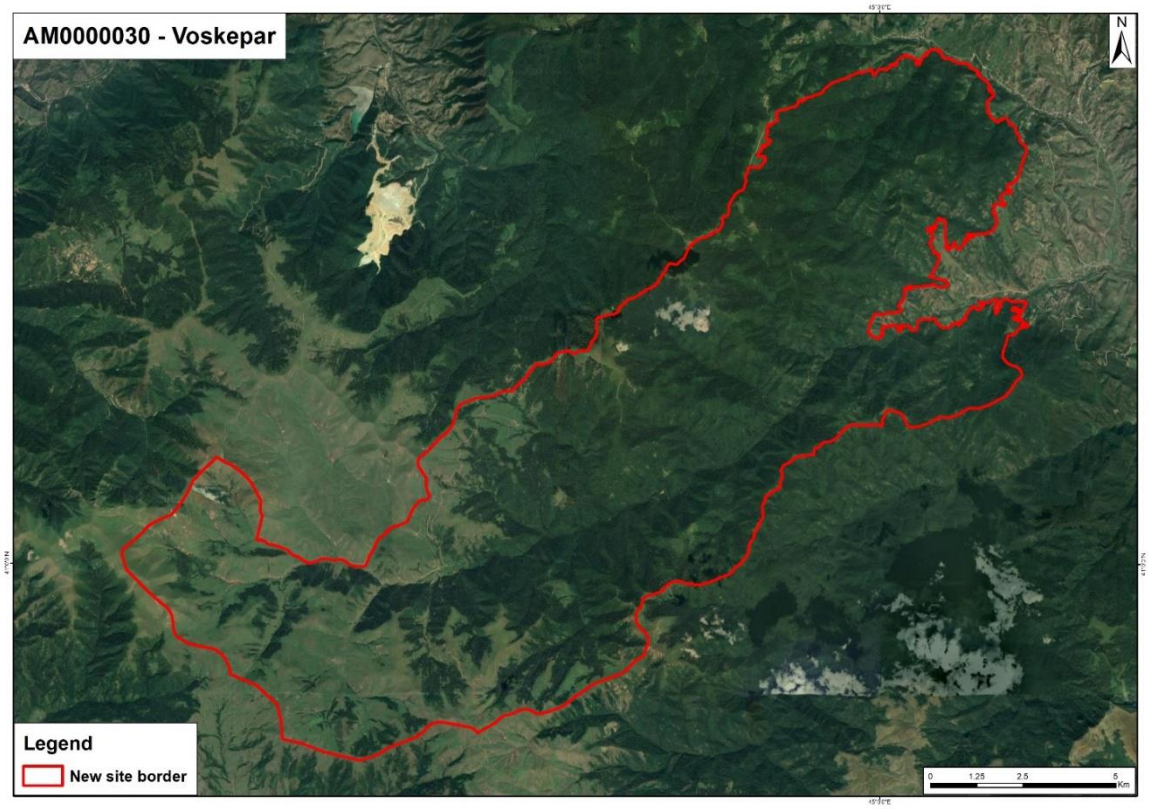
Source: Developed by kartECO for the World Bank

Figure 30. Map of Emerald site 'Teksar' - AM0000029 with proposed boundaries



Source: Developed by kartECO for the World Bank

Figure 31. Map of Emerald site 'Voskepar' - AM0000030 with proposed boundaries



Source: Developed by kartECO for the World Bank

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EU4Environment
Green Economy in Eastern Partner Countries

Recommendations for Review of the Candidate Emerald Sites in Armenia

This report presents recommendations for a comprehensive revision and optimization of the Emerald Network database for Armenia, undertaken within the EU4Environment Program. The report was developed on the request of the MoE of Armenia with the aim to prepare a revised Emerald Network database for Armenia. Through extensive consultations and workshops, the database was meticulously revised to reflect current biodiversity information, addressing gaps such as missing population numbers and species locations. The report emphasizes the importance of continuous monitoring of biodiversity data concerning the sites, which requires updating, correcting, and completing missing population numbers and species/habitats location, as well as mapping under a specific monitoring program.

Key findings include the identification and correction of disproportionately large Emerald sites, the introduction of new conservation areas, and the refinement of site boundaries to exclude nontarget areas such as settlements and industrial zones. The revised data set now includes 30 Emerald sites, covering 707,739.22 ha, with detailed maps and scientific justifications for each modification. The report emphasizes the importance of public engagement and stakeholder consultation in finalizing these recommendations, ensuring that the Emerald Network continues to protect Armenia's valuable natural habitats and species effectively.

Programme website:

www.eu4environment.org

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