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Ministry of Ecology and Natural Resources
Republic of Azerbaijan

REPORT
on the implementation of the CoE/EU Joint Programme "Emerald Network of Nature Protection Sites, Phase II" in Azerbaijan in 2013

January 2014

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I. GENERAL INFORMATION ON THE PROTECTION BIODIVERSITY

Particular attention has long been given to the protection of biodiversity in Azerbaijan. The first nature reserve areas to protect amazing nature of Azerbaijan were established in 30s of the last century in Goygol, Zagatala, and Gyzyl-Agach. Until 2003, the overall area of specially protected sites was 478 thousand hectares, constituting 5% of the country's area.

In the course of 2003 and 2009 the area of protected nature territories was extended by almost 848708.70 hectares. At present there are 14 state nature reserves with a total area of 221474.20 hectares and 24 state nature sanctuaries with a total area of 361980 hectares which encompass major ecosystems. The overall area of the established National Parks in Azerbaijan is 265254.50 hectares comprising 8 national parks - Shirvan, Ordubad named after Academician Hasan Aliyev, Ag-gol, Hirkan, Altiagaj, Absheron, Shahdag, Samur-Yalama and Goygol.

Presently, the overall area of specially protected sites in Azerbaijan including national parks constitutes 11.3% of the country's territory.

Until now 9 national parks, 14 state nature reserves, 24 state nature sanctuaries, 1 zoological park, 1 botanical garden and Dendrology Park and more than 30.000 natural monuments have been already announced.

Table 1: List of specially protected nature territories of Azerbaijan

Name of SPNT	Area (ha)	Year of creation
National parks		
Ordubad	12131.00	2003
Shirvan	54373.50	2003
Aggol	17924.00	2003
Hirkan	40358.00	2004
Alty-Agach	11035.00	2004
Absheron	783.00	2005
Shahdag	130000.00	2006
Goygol	12755.00	2008
Samur-Yalama	11772.25	2010
State nature reserves		
Gyzyl-Agach	88360.00	1929
Zakatala	47349.00	1929
Turianchay	22488.00	1958
Shirvan	6232.00	1969
Basutchay	107.00	1974
Garayazy	9658.00	1978
Ilisu	17381.60	1987
Gara-Gel	240.00	1987
Shahbuz	3139.00	2003
Eldar Shamy	1686.00	2004
Mud volcaneous	20000.00	2007
Korchay	4833.60	2008
Sanctuaries		
Lachin	20000.00	1961
Korchay	15000.00	1961
Byandovan	4930.00	1961
Sheki	10350.00	1964
Gusar	15000.00	1964
Shamkir	10000.00	1964
Glinany Island	400.00	1964
Gara-Yazy-Akstafa	10000.00	1964
Barda	7500.00	1966

Zuvand	15000.00	1969
Ordubad	27869.00	1969
Ismailly	23438.00	1969
Gubadly	20000.00	1969
Gizil –Agach	10700.00	1978
Dashalty	450.00	1981
Giziljan	5135.00	1984
Arazboyu	2200.00	1993
Gabala	39700.00	1993
Gakh	36836.00	2003
Hirkan	1553.00	2005
Arazboyu	9118.00	2005
Zakatala	6557.00	2008
Arpachay	68911.00	2009
Rvarud	1333.00	2009

II. OBJECTIVES OF THE PROJECT

The EU/CoE Joint Programme for the preparation of the Emerald network of Nature Protection Sites, Phase II was implemented during 2013 in Azerbaijan with the following objectives:

- Organisation of a technical meeting between the project Emerald team and the Joint Programme Manager and scientific coordinator.
- Sites database for additional Emerald sites with all data as defined in the Standard Data Form, including their digital boundaries;
- Contribution to the consultations on the guidelines on Emerald Network sites' management, reporting and monitoring mechanisms;
- Final Emerald sites database completed and delivered to the Council of Europe through the EIONET CDR, including corrections of data and identification of additional sites;
- Finalisation of the distribution per biogeographical region and populations in each country of all species and habitats of Resolutions Nos. 4 and 6 of the Bern Convention and Annex I of the Habitats Directive;
- Validation of distribution GIS maps of species and habitats already delivered through the 1st Joint Programme (2009 -2011) and creation of additional maps for a new selection of species and habitats;
- Finalisation of sites database for all the sites with all data filled in, as defined in the Emerald Network Standard Data Form;
- Finalisation of digital boundaries for all sites in GIS

III. NATIONAL EMERALD TEAM

The national emerald team for implementation of Emerald Network Pilot Project in Azerbaijan was decided by the Ministry of Ecology and Natural Resources that this team will continue their work in this year taking into account that this team implemented Emerald Network Pilot Project in 2005-2006.

The Emerald Team is composed of the following experts:

- Rashad Allahverdiye, Emerald team leader – Ministry of Ecology and Natural Resources;
- Elena Tagiyev, Emerald plant expert – Institute of Geography, National Academy of Sciences;
- Sevinj Saruxanova, fauna expert – WWF Azerbaijan;
- Aida Xudaverdiyeva, GIS expert;
- Rüfat Mammadov, technical expert.

IV. 1ST NATIONAL WORKSHOP ON THE EMERALD NETWORK

In the framework of the launching of the project, a first national workshop was organized at the Ministry of Ecology and Natural Resources of Azerbaijan in Baku on 05-06 June 2013 with the participation of scientific consultant from Council of Europe. The main purpose was to introduce the national team to the principals and technical aspects of Phase II of the Emerald Network constitution process and to organize training for the team for the identification of gaps in the country Emerald database and future methodology.

The workshop was opened by Mr Vaqif Javadov, director of Protection of Biodiversity Department. After his welcome words he noted the important relations of Azerbaijan with international organizations, among which Council of Europe and European Union plays special role. In the opening speech Mr Javadov also gave a detailed overview on actions carried out by the country in the sphere of conservation of biodiversity.

Mr Roekaerts gave information and explained the project objectives, the Emerald principles and technicalities. The workshop was followed by a field trip to the Salyan region, which will be a part of Shirvan Emerald Site.

The workshop delivered the following outputs:

- The first reference table produced for Res. N° 6 on Species, as well as for Res. N° 4 on habitats;
- The biogeographical regions' map: the Emerald team concluded that no changes are to be foreseen in the map;
- Emerald Sites' database: the Emerald software was reinstalled on a new laptop and the pilot project database was reviewed. An error in the database for 1 Emerald site in Azerbaijan was identified and corrected by the consultant as an example of how the corrections should be dealt with. It was agreed with consultant that within implementation of current project for 2013 Azerbaijan emerald team will work for making corrections with 7 sites identified in the period 2005-2012 and 2 new sites (Gobustan and Absheron);
- GIS distribution data: a provisional discussion on the selection of Species and Habitats for which distribution data can be constructed was carried out;
- GIS site boundaries: the principles for creating GIS layers were explained;
- List of national designation types (CDDA): the list from the previous pilot project was reviewed.

Table 2: List of participants to the 1st national workshop:

Name of participant	Organisation
Sadagat Mammadova	Ministry of Ecology and Natural Resources
Vagif Javadov	Ministry of Ecology and Natural Resources
Marc Roekaerts	International expert (CoE)
Hikmat Alizadeh	Ministry of Ecology and Natural Resources
Rashad Allahverdiyev	Ministry of Ecology and Natural Resources
Vugar Ahmadzadeh	Ministry of Ecology and Natural Resources
Elshan Majidov	Ministry of Ecology and Natural Resources
Jeyhun Pashayev	Ministry of Ecology and Natural Resources
Arzu Samadova	Ministry of Ecology and Natural Resources
Sabit Mustafayev	Orhus center
Elena Tagieva	Institute of Geography, National Academy of Sciences Flora expert
Elshad Asgerov	Institute of Zoology, National Academy of Sciences Fauna expert
Kanan Karimli	Ministry of Ecology and Natural Resources
Aida Xudaverdiyeva	GIS expert
Bahruz Mahammeov	Ministry of Ecology and Natural Resources
Seymur Meherremov	Volunteer

Adil Orujov	Ministry of Ecology and Natural Resources Tanning Center
Vusal Jabbarli	Ministry of Ecology and Natural Resources
Irada Rasulova	Ministry of Ecology and Natural Resources
Aliqismat Azizov	Ministry of Ecology and Natural Resources, Tanning Center

III. METHODOLOGY

The main approach to the project methodology was to conduct rapid assessment method in a participatory manner with office and field studies. A working methodology was adopted according to the analysis of the conclusions of studies that have been carried out regarding emerald sites.

With this approach, all bioregions within country have been examined and assessed individually. Assessments regarding relevant species and habitats which were identified during launch workshop were mapped (1:200 000 scale topographical maps) and then collated into a single map.

The following steps were taken within the progress of this study and the assessments were made accordingly:

- Previous studies on this subject are carefully examined;
- The current situation in all bioregions was taken into consideration addressed;
- In the scope of research, in order to collect data and information meetings within emerald team have been made. The previous studies done during implementation of emerald project in 2009-2012 have been examined. Due to these studies being out of date, the data was updated first in office and then verified on site;
- During the field studies, an experience of fauna and flora experts were taken into account;
- The most extensive and time consuming parts of studies were the office hours spent on the preparation of maps generated from the analysis and synthesis of the data collected;
- Data received from fauna and flora experts were entered to the emerald software. Also data for 11 previous sites were updated and included to emerald software;
- Finally relevant GIS works using ARCMAP programme were provided.

IV. RESULTS ACHIEVED

a) The team reviewed and updated scientific data for 11 previous sites, identified in 2005-2012. This data was added by technical experts to the emerald software;

b) 2 new potential sites identified (Abheron and Gobustan) in 2013.

Proposed Absheron Emerald site (Area1000 ha)

The area of this proposed site in is only 1000 ha. It is situated at the outermost Southern tip of the Absheron Peninsula; a sandshore formed by the power of waves and wind, and is still growing continuously. Before the latest rise of the sea level, the peninsula had been a military no-go area. Additionally, melons were grown intensively at the base of the sandshore. The fields, formerly pushed by bulldozers into the dunes, were long ago flooded and provide a suitable habitat for the sea birds, frogs and insects. The biggest part of the Site, however, consists of 'virgin' nature, that is still subject to constant change under the influence of water, wind and changing sea levels. Only a few years ago the outmost part of the headlands was separated from the peninsula and became a long sandy island itself. Many sea birds, mainly terns and seagulls, are breeding here now. In summer it is an important resting place for the unique Caspian seal, the only seal living in salt water outside the oceans. For 1.8 million years this seal has developed in isolated and independent conditions.

From late summer till winter millions of birds fly over the peninsula on their way South or take a rest here. It is a spectacular sight when swarms of up to 1000 pelicans or flamingos fly at low height over the desolate peninsula towards the open sea. Reeds or low shrubs are teeming with small birds, frequently rarities, amongst others, like Ortolane bunting, Oriental skylarks and different kinds of Wheatear. The migration of birds of prey can be especially imposing: hundreds of Honey bussard fighting shy to fly towards the open sea; big falcons like Peregrine falcons and Saker falcons are not

seldom here; Marsh-, Hen-, Montagu's and Pallid harrier are swinging close to the ground. While wandering in autumn, one regularly scares away resting short-eared owls. Often enormous amounts of water birds and waders are gathered in the small ponds of the peninsula and in water areas near the coast. Only few species breed here, almost all others are only visiting the National Park to rest undisturbed.

Obviously, foxes and jackals are beneficiaries of the many birds. Both are often to be found here and their tracks are everywhere on the sand. Apart from dead fish washed ashore or, more seldom, the carcass of a seal, birds are the basic food for their large population.

Less spectacular than the huge amount of birds is the sparse and low vegetation. However, an expert can find many, rare and uncommon species that only occur here on the sandshore. These species were one of the reasons for putting the peninsula under protection. Obvious even to the layman are the vast areas that are overgrown with Ephedra (Ephedra distachia). This plant is systematically set between the two big groups of the higher plants, the gymnosperms and the angiosperms. The most beautiful flower, the Persian Winds (Convolvulus persica), opens its big, white blossoms only in July. The flower grows close to the shore-line on loose sand.

Proposed Gobustan Emerald site (Area 2000 ha)

The climate of Gobustan is a dry semi subtropical one, with rather mild winters and very hot dry summers. An atmospheric precipitation is small and so are the springs of Big Caucasus area.
The presence of rare and wild flora testifies that the climate of Gobustan.some tens of thousands of years ago was damper, and the atmospheric precipitation was sufficient, so springs were abounding with water.
In the remote past, the flora and fauna of Gobustan were incomparably richer. Its landscape represented a kind of savannah with corresponding climate. Here were large herds of wild bulls, goats, deer, wild horses, donkeys, wild boars, and gazelles hunted by lions, wolves, wild cats and leopards.

Flora

The vegetative world of Gobustan has a character that is common for deserts and semi-deserts. It consists of ephemeris grasses and bushes, wormwood and similar long-term plants. Among heaps of stones and rocks a wild rose, a dwarfish cherry, Hibernianhoneysuckle, a juniper, wild pear, wild fig, wild pomegranate, grapes and some other kinds of trees and bushes are rather often met decorating the stern landscape.

Fauna

The fauna of Gobustan has strongly grown poor for the last decades of years. The natural inhabitants of Gobustan now are rare foxes, jackals, wolves, hares and wild cats, mountain chickens, wild pigeons, larks alongside with numerous snakes and lizards and some others.

Low, semi-arid mountains, including the flat summits of Beukdash, Kichikdash, Kagnizdag, Djingirdag and the dry stream of Djeirankechmez. Some trees and bushes exist on the eastern slopes (wild Pyrus, Ficus, Punica, etc.). Quarrying for limestone has taken place in the past.
Azerbaijan still did not make use to the maximum of its potential for top-ranking protected areas. Only recently, some landscapes came into focus. A study conducted research in a 5,500 km? large area of greater Gobustan. Not only a fascinating landscape with its manifold mud volcanoes was subject of investigation, but also the potential for nature protection, development perspectives for tourism and recreation as well as sustainable agricultural development was assessed. Maybe the landscape of Gobustan will be next to being declared an official protected area project of Azerbaijan.

Amazingly, no one really seemed to recognise the potential of Gobustan, apart from a few herdsmen and oil explorers. Seldom one will come across this discrepancy a second time - the crowded capital Baku and the almost empty landscape in the direct neighbourhood. Of course there is no water available and also no lush vegetation. Yet, the undulating scenery is more than attractive for hiking, horse riding or mountain biking.

One hundred or more years ago, Gobustan must have been full of Gazelles. On the rather rocky hills and mountains Turs occurred in large numbers. Uncontrolled hunting obliterated both species. At present, mammals are seldom met; it is usually rabbits, foxes or jackals. Frequently great raptors are surprising the visitor: the Black Vulture, the Griffon Vulture, and the Egyptian Vulture also the

Golden Eagle, the Long-legged Buzzard and sometimes even a great Falcon (Peregrine, Lanner, Saker). But in general, Gobustan is the Lark's country. Most of all, the Starling sized Calandra Lark breeds basically all over the territory. In winter this species groups in large flocks which fly around rather aimlessly. Further Lark species are: the Shore Lark, the Skylark, the Woodlark, the Lesser Short-toed Lark and the Short-toed Lark. As almost everywhere in the country, the most attractive season is spring. At the farm-stead's, the annual seasonal migration to the Great Caucasus is prepared whereas in every hole within the walls and under every roof, bird life is thriving. Uncountable hosts of Red-coloured Starling (Pastor roseus), Lesser Kestrels (Falco naumanni) some Rock Sparrows (Petronia petronia) singularly Little Owls (Athene noctua) as well as Hoopoe (Upupa epops) breed or already feed their chicks. On the tips of rare bushes Corn- and Black-headed Buntings as well as Red-backed Shrikes, Woodchat- and Lesser Grey Shrikes sit around in steppe and loamy and sandy walls.

In steep, loamy and sandy walls Bee-eater (Merops apiaster) and Blue cheeked Bee-eater (M. persicus) set up their breeding caverns, whereas on little water holes Ruddy Shelduck (Tadorna ferruginea) and the rare Sociable Plover (Chettusia gregarina) can be met.

If in some years Gobustan will be a protected area, it is to hope that everything will be done to encourage gazelles and tur to return. It is very likely that the income from tourism will make up for the financial shortcuts which arise due to restricted sheep husbandry. This will be beneficial to the welfare of nature, to recreation seeking visitors and to the improvement of the local inhabitants who live under difficult conditions - a challenging but remunerative project for nature protection and regional development.

Strict Cultural Reserve Gobustan

The reserve Gobustan, founded in 1966 with a size of 4,400 ha is and has been from the beginning a chimera, a compound creature, neither fish, nor meat, and therefore, hardly able to survive. Its official name is "Historical-cultural Strict Reserve Gobustan" and it belongs administratively to the Ministry of Culture. De facto it seems to be both: an archaeological protected area as well as a nature protected area. From the very beginning it had large problems with protecting the cultural and natural heritage. Until the 1970s on one of the plateaus of the two archaeologically most important hills, intensive exploitation of stone destroyed all existing archaeological evidence. Up to now, no surveillance and control takes place, which results in the apparent damage of the famous stone paintings. To protect these valuable historical paintings and the extraordinary nature too little, not to say anything takes place.

The world-wide famous rock paintings of today, partly dating back to pre-historical times of mankind (Mesolithic, Neolithic, Bronze Age to modern times) only came into scientific focus in the 1940s and became known to the public after WW II. During exploration more than 6,000 stone paintings were discovered, mainly animals and hunting scenes, but also depictions of humans. Many animal species can be determined easily, among others these are horses, wild donkeys, aurochs, camel, goitred gazelles, Saiga Antelope, Bezoar Goat, deer, wild boar, wolfs, lions, cats, seals, birds, reptiles, and scorpions. During excavations many bone fragments were found, in particular of the preferably hunted prey, such as gazelles and horses. Painted hunting scenes show hunt for wild boar with the help of dogs.

Concerning the age of the paintings, opinions differ slightly. An age of 8,000 years can be considered as proven. Less confirmed opinions assure an age between 18,000 to 30,000 years. Whatever is true, the stone paintings of Gobustan belong to the world cultural heritage of humanity and tell about the natural state in the past. It is assured that humid climatic periods changed with dry periods. Paintings of the forest cow Aurochs imply that the conditions for forest were given in the greater region of Gobustan at a certain time.

Today, the climate only allows semi-desert vegetation and the corresponding animals. Still until the end of the 19th century large flocks of gazelles crossed Gobustan and on the rocky hills Turs occurred frequently. Those times are all over and done, although gazelles slowly seem to begin to recover in the region as populations emigrate from Shirvan National Park. If the ban in hunting is preserved in future, the resettlement in Gobustan should only be a question of some years. When visiting the stone paintings in the warm period of the year, the most conspicuous animal species almost always encountered are the agame - sitting on almost every rock, the Rock Nuthatch - with its characteristic call not to ignore and the red spooned Chough -breeding regularly in rock crevice.

- Distribution of species and habitats according to biogeographical regions

Relevant fauna and flora experts marked species and habitats from Resolution No. 4 (1996) and No. 6 (1998) of the Bern Convention and Annex I of the Habitats Directive to 1:200 000 scale topographical maps of Azerbaijan.

- Population data at national level for species and habitats.

Relevant fauna and flora experts identified all species and habitats from Resolution No. 4 (1996) and No. 6 (1998) of the Bern Convention and Annex I of the Habitats Directive, which occurred in Azerbaijan.
According data obtained from experts 18 habitat types, 16 mammal species, 119 bird species, 11 fish species, 5 reptile species, 2 amphibian species, 8 arthropod species and 10 plant species were identified in Azerbaijan.
All species and habitats of Resolutions Nos. 4 and 6 of the Bern Convention and Annex I of the Habitats Directive, which exist in Azerbaijan, entered to software by technical experts.

- First set of GIS distribution data for selected species and habitats and first set of digital site boundary data

Relevant 30 maps, which were prepared and marked by fauna and flora experts were gathered and examined. These maps were scanned in A-0 scaner.

Relevant fauna and flora experts gathered 30 copies have been done A-0 scan maps with the help of the format scanner. Scanned maps were brought to jpeq format and transferred to PC.

WGS-84 (UTM-38) coordinate system was used within implementation of the project. Existing map sources, which were prepared by fauna and flora experts and which were available as paper maps have been developed to GIS layers in UTM projection and WGS84 datum. Paper maps were rasterized and geo-referenced. Taking into account that used maps are in small scale trapezium form ENVİ and Geographic Calculator programmes have been used in the transformation of the maps.

Coordinate junction within this programme was carried out according ellipsoid measure. UTM (Universal Trans Merkator) is a world accepted coordinate system. As the used maps are in Gaus Kruger coordinate system these maps were turned to UTM-38 system via Geographic Calculator programme.

Transformed maps were grouped in Arc Map. 95 shape files were created for each object in Arc Catalog programme. All these processes have been created to geographical information systems. It is necessary to note that Azerbaijan GIS experts also distributed data of species within each site boundaries in spite of this was not stipulated in the contract.

V. PROBLEMS ENCOUNTERED WHILE IMPLEMENTING THE PROJECT

1. It was not possible to obtain 1:100 000 scale maps, because such kinds of maps are only for internal use according national legislation. We used 1:200 000 scale maps during implementation of this project.
2. Some species of high conservation value missing in resolutions and annexes. Experts identified these species, but for official procedure for proposing new species to the annexes detailed field works should be implemented.
3. Some species names which are in relevant resolutions are not exist in standard database. We included additional information about these species in reference files.
4. One of the main problems encountered during implementation of the project is finding 20% of the project funds which will be paid after receipt and approval of the documents.