



THE EVALUATION OF PROTECTION STUDIES OF NATURAL SITE FIELDS IN DIYARBAKIR, TURKEY



Meltem Erbas¹⁺

F. Demet
AYKAL²

Berivan
ÖZBUDAK AKCA³

¹Res. Assist. Dicle University Architecture Faculty, Diyarbakir, Turkey
Email: meltemerbasm@gmail.com Tel: +905057519015

²Assoc. Prof. Dr. Dicle University Architecture Faculty, Diyarbakir, Turkey
Email: demetaykal@gmail.com Tel: +905324523280

³Dr. Dicle University Architecture Faculty, Diyarbakir, Turkey
Email: ybbudak@gmail.com Tel: +905055225562



(+ Corresponding author)

ABSTRACT

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This study is to establish a guide for evaluating the current status of natural sites and determining the categories of existing and proposed Natural Sites according to their scientific bases in terms of their visual landscape resource values. "Visual Welding Method" was used in order to reveal the qualities of the natural preservation sites in Diyarbakir province in terms of visual landscape resource values. This method is done by visual landscape analysis. Firstly the study areas were examined and photographed. According to the "biophysical scoring" method used according to these examinations and photographs, the evaluation of the visual elements or units that have high visual value designated in the field is made. In this scope a source observation form was created. In this classification Biophysical properties taken into account and the grade points were given according to these properties. As a result of evaluations; The Ambar Valley, Hilar Ruins and Rocks, Ergani Plane Trees and Green Areas, Çermik Thermal Spring and its surroundings and Naked Mountain have been exposed to anthropological stress and have been affected by many corruption. On the other hand, Hassuni Caves, Gelincik Mountain, Sinek Creek Waterfall and Mount Chios remained with their natural landscaping value because there were not many such interventions. In terms of visual landscape quality evaluations, it is possible to say that the weaknesses and threats mentioned in the natural sites in Diyarbakir are actually problems that can be encountered in all natural sites in Turkey. As a result of the study, in specific and general movements on these issues, legal and managerial planning, design and implementation of natural sites in Diyarbakir and Turkey have been suggested.

Contribution/ Originality: As a result of these evaluations; weaknesses and threats set forth in a natural protected area in Diyarbakir, in fact, be encountered in all natural sites in Turkey, it is possible to say that the potential problems. At the end of the study, specific recommendations were made specifically for these problems. These recommendations are for natural sites in general Diyarbakir and Turkey. Regulations have been evaluated in terms of legal, managerial, planning, design and implementation. The suggestions contained in this study could also create an infrastructure for other natural sites.

1. INTRODUCTION

Natural and cultural inheritances of a nation are the most important priceless and irreplaceable values. Losing these extremely important values either by wearing out or vanishment means the loss of an inheritance for all the

people around the world. For this reason, some of these inheritances should be evaluated as extraordinary universal values and should be shrouded through a special protection against increasing threats [1].

Particular regions are chosen in order to leave a rich biological inheritance, a healthy and clean environment, getting a sufficient share of world tourism and providing a sustainable development for the future generations. One of the implementations which are conducted in our country is to protect the natural heritage sites [2].

Research on protecting the nature should be based upon sufficient knowledge and scientific studies. It is a known fact that today in Turkey, protection institutes which are expected to have quick decision making do not have required experts, and studies are not completely based upon the scientific ground. Because, in Turkey, natural heritage site phenomenon has emerged in order to prevent rapid construction, and thus quick decision-making necessity has arisen to prevent rapid construction. Therefore, decisions that are produced without very detailed and scientifically thought, has brought the country to promoting the construction rather than protecting natural heritage sites [3].

With its natural beauties and cultural features, Diyarbakır too is a city which has natural heritage sites. With a view to developing a method which reveals the flaws of the earlier methods for protecting the natural landscapes in our country and especially in Diyarbakır under 'natural heritage site' practice, in this study, Diyarbakır which is losing its natural values, is chosen within existing and suggested natural heritage sites research which should be protected in terms of natural and cultural characteristics for Diyarbakır

1.1. Aim

Determining the categories of existing and suggested Natural Heritage Site by evaluating the Natural Heritage Sites' current situation to form a guide to reveal the visual landscape resource values in terms of quality which is based upon the scientific ground.

1.2. Content

It is that today's environmental planning and managing, protecting visually rich landscapes approach is an important component in planning decisions. Therefore, natural heritage sites' visually rich landscapes are classified from high to low by visual landscape quality assessment in study. Thus, which heritages should be protected as a priority and which precautions should be taken regarding sustainability are set forth.

1.3. Method of the Research

"Visual Resource Method" is used to reveal the visual landscape resource values in terms of quality in Diyarbakır's natural heritage sites. This method is performed by landscape analysis and survey. Visual landscape analysis consists of landscape's inventory, identification-classification and determination of the visual landscape's value or detection of the preferences phases [4]. In order to determine the visual landscape's value, examinations were carried out and photographs were taken by going to the research sites.

According to "Biophysical rating" method, which is used considering these examinations and photographs, evaluation of high valued visual landscape elements' or units' are made on this site. Within this context, source observation form was created. In this form, every unit is rated and classified as "High", "Medium" or "Low" (Table 1).

Biophysical properties taken into account while making this classification and point ratings according to these properties are given as regards to slope, view, border, topographic diversity, vertical relief, vegetative diversity, rock/soil structure, existence of water, neighboring landscape, terrain, flora and color diversity.

Table-1. Source Observation Form for Biophysical Rating [4]

VISUAL LANDSCAPE QUALITY EVALUATION	
SLOPE	
Steep Slopes (>%60)	High (5)
Medium Slopes (%30-%60)	Medium (3)
Slight Slope (%0-%30)	Low (1)
VIEW	
South, Southwest, Southeast	High (5)
East, West	Medium (3)
North, Northwest, Northeast	Low (1)
BORDER	
Strong, apparent borders and transitions (such as sea – sky)	High (5)
Slightly less apparent borders	Medium (3)
Non-apparent and hardly-perceived borders	Low (1)
TOPOGRAPHIC DIVERSITY	
Very apparent topographic features	High (5)
Apparent topographic features	Medium (3)
Slightly apparent topographic features	Low (1)
VERTICAL RELIEF	
High Relief (>800m)	High (5)
Inclined terrain, moderate high relief (200-800 m)	Medium (3)
Low vertical relief (0-200m)	Low (1)
VEGETATIVE DIVERSITY	
High diversity in vegetative pattern	High (5)
Medium diversity in vegetative pattern	Medium (3)
Low vegetative diversity or non-existent pattern	Low (1)
ROCK/SOIL STRUCTURE	
Dominant rock or soil features (such as rock pillar), rock and soil pattern that creates diversity in vegetative pattern	High (5)
Non-dominant rock and soil pattern	Medium (3)
Non-apparent rock and soil pattern	Low (1)
WATER ASSETS	
Dominant water assets, limpid and clean water surface	High (5)
Water surface is not very dominant in landscape, water surface is not limpid and clean	Medium (3)
Water asset is not apparent, water’s physical quality is low	Low (1)
NEIGHBOURING LANDSCAPE	
Neighbouring landscape effects the whole appearance of the landscape	High (5)
Neighbouring landscape’s visual effect is medium	Medium (3)
Neighbouring landscape effects minimally to the landscape’s impact	Low (1)

1.4. Limitations of the Research

The limitations of the research are the determination of Natural Heritage Sites’ landscape values along with these sites’ borders and the categories of natural sites defined in regulations. Ambar Valley, Hassuni Caves, Hilar Ruins and Rocks, Ergani Plane Trees and Green Areas, Çermik Thermal Spa and Surrounding, Gelincik Mountain, Sinek Brook Waterfall, Çıplak Mountain and Sakız Mountain are limited as the existing and suggested heritage sites which are unfortunately exposed to anthropological pressure in Diyarbakır (Figure 1).



Figure-1. Location of Diyarbakır Natural Heritage Sites

GoogleEarth (Accessed : 26 th of June in 2017]

1.5. Problem of the Research

In our country, which has a unique richness in terms of natural and cultural resource values, “natural heritage sites” are one of the many legal statutory which aims to protect the nature. Huge problems are being experienced in conceptual, legal, planning, managing and practice studies in Diyarbakır’s natural heritage sites, as is the case in our country. This study is carried out on Diyarbakır’s natural heritage sites in order to find solutions to these problems.

1.6. Hypotheses of the Research

It is not possible to state that natural, historic and cultural environment protection policies and practices have been successful in Turkey up to now. Especially in cities like Diyarbakır, urban migration from rural areas, rapid urbanization, secondary housing and structuring, land rent tendencies, legal and managerial inadequacies and confusion, failure to apply existing legislation, wrong policies, zoning exemptions etc. a conflict and irregularities are experienced in legal, planning/designing, practicing and managing studies due to current negativities. This situation brings along multifaceted issues in social, economic and political scales. “Natural Heritage Sites” in Diyarbakır, just as in other cities, have its share of these complicated problems and it cannot implement fully the legal protection of these protected areas as well as victimizing, especially, the property owners, and source values are thought to have been exposed to damage.

2. THEORETICAL FRAMEWORK

2.1. Natural Heritage Site Concept and Classification

They are sites that need protection in terms of their rarity or features and beauties which are above ground, underground or underwater that belong to geological periods, prehistoric or historical periods. In detection studies that will be carried out in these sites, taking the opinions of relevant institutions and organizations according to the field’s characteristics is essential. These sites are graded in 4 different ways, according to this law.

I. Degree Natural Site

These are the sites that have universal value in terms of scientific conservation, interesting features and beauties and is absolutely necessary to be protected for the public interest which would be preserved except for scientific research for conservation. In these areas, flora, topography, actions that might distort the silhouette effect and destruction will not be tolerated, only under the condition of getting permission from the protection institution, technical infrastructure services, daytime facilities for recreation, afforestation, forest maintenance and cutting trees, taking necessary protective measures for fire in forest areas, businesses that got license before the announcement of site decision, stone, soil, sand etc. pits’ liquidation of the works within the legal period by rehabilitating the field, activities originating from the site’s characteristics, the installation of any kind of informative warning signs, the taking of protection measures by the relevant institutions and local authorities, the maintenance and repair of existing registered and unregistered buildings may be permitted in accordance with the principles of operation.

II. Degree Natural Site

Areas that can be opened for public use in addition to conservation and improvement of the natural structure. In these sites, there will be no construction except for tourism investment and tourism operation certified tourism facilities and service-oriented structures.

III. Degree Natural Site

Areas that can be opened to the use of the residence, considering the potential of the area and the usage characteristic in the way of preserving and developing the natural structure.

People have begun to move towards protected areas, particularly those that have visually interesting properties. Apart from the natural, cultural and historical resource values that protected sites have, visually rich landscapes also have an important place for either visitor and local people or economic development. Therefore, it is essential to protect the landscape aesthetics in such sites [5].

One of these sites, natural heritage sites, is the focus of visitors' attention because of their resource values. Vegetative diversity, interesting geological formations, historical buildings, water assets and landscapes are some of these resource values [6].

Preferability of natural heritage sites is directly proportional to that sites' high quality of the landscape. Hence, it is the primary prerequisite to maintain the sustainability of resource values' and landscapes' by planning with effective and feasible methods. Visual Landscape Quality is one of these methods (Table 2).

Table-2. Models used in visual landscape quality assessment [7-12]

MODELS	EXPLANATION
PHYSICAL MODEL (EXPERT MODEL)	<ul style="list-style-type: none"> • Evaluation is done by experts. • Takes into consideration the landscaping characteristics that are influenced by landscapes and forms land inventory [7, 13] • Usually used in environmental management applications [8].
PSYCHOLOGICAL MODEL (PUBLIC MODEL)	<ul style="list-style-type: none"> • Data are mostly obtained through questionnaires [9]. • Statistical methods are used due to using of questionnaires as a tool [10].
PSYCHO-PHYSICAL MODEL	<ul style="list-style-type: none"> • Determines the mathematical relationship between the physical characteristics of the landscape and the perceptual reflections of the observers [11]. • The aim of the model is to measure community preferences by excluding them from personal preferences [10].

2.2. Visual Landscape Quality

It is the aesthetic experience that depicts the landscape or holds its place visually [12, 14]. Visual landscape is the aesthetic product created by human perception, which is shaped by human psychology, against natural and cultural landscapes in mind. At this point, the concept of aesthetics perceived as a person emerges as a manifestation of their mental and spiritual structures [15, 16]. In this sense, perception can change from one person to another and from surrounding environment. The visual landscape quality in the context of the definitions made, is a common product in which certain (visual) landscape characteristics that interact with the perceptual and psychological processes of individuals are measured by the liking of individuals [7, 8, 10]. According to another definition, it is expressed as an evaluation of the appropriateness of the landscape information by idealizing the visual information of the landscape [17].

2.3. Visual Landscape Quality Assessment







Visual landscape quality assessment can be performed in 3 different ways. These are physical model (expert model), psychological model (public model) and psycho-physical model (Table 2).




In the study, after the reviews were made and photographs were taken, the expert model was preferred by biophysical scoring method.





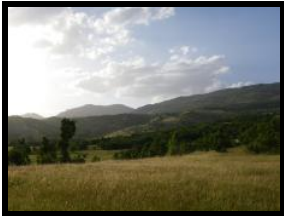

3. FINDINGS

After the biophysical scoring made by the expert model, the following findings were obtained about the existing and suggested natural heritage sites in the province of Diyarbakır province as a result of examinations and photographs (Table 3).

Table-3. Visual Landscape Quality Assessment of Diyarbakır's Natural Heritage Sites

Visual Landscape Quality Assessment of Diyarbakır's Natural Heritage Sites															
	Slope	View	Border	Top. Diversity	Vertical Relief	Veg. Divers.	Rock/Soil Structure	Water Assets	Neighboring Landscape	Land Shape	Flora	Colour	Total Score		
SAKIZ MOUNTAIN	3	5	3	3	3	5	3	1	5	3	5	5	44points (2.degree)		
															
AMBAR VALLEY	5	5	5	5	5	5	5	3	3	5	5	5	56 points (1.degree)		
															
HASSUNI CAVES	3	3	3	3	3	5	5	1	3	3	5	5	42 points (2.degree)		
															
HILAR RUINS	3	5	3	5	3	3	5	1	3	3	3	3	40points (2.degree)		

													
ERGANI PLANE TREES AND SURROUNDINGS	Slope	View	Border	Top. Diversity	Vertical Relief	Veg. Divers.	Rock/Soil Structure	Water Assets	Neighboring Landscape	Land Shape	Flora	Colour	Total Score
	1	1	1	1	1	1	1	1	1	1	3	1	14points (3.degree)
													
CERMIK THERMAL SPA	1	3	1	1	1	3	1	5	1	3	3	1	24points (3.degree)
													
GELİNCİK MOUNTAIN	5	3	3	3	5	3	3	1	5	5	3	3	42points (2.degree)

													
SINEK WATERFALL	3	5	5	3	5	3	5	5	3	3	3	3	50points (1.degree)
													
CIPLAK MOUNTAIN	3	3	3	3	5	5	3	1	3	3	3	3	38points (2.degree)
													

The table was prepared by Meltem ERBAŞ(Landscape Arch.)

Sakız Mountain: There are village settlements around it. Still, natural landscape characteristic is not distorted much, taking 44 “**high**” score in visual landscape quality assessment.

Ambar Valley: Although the people of the village are sensitive to the protection of this site, there are distortions in valley’s landscape because of the construction. However, it is rated 56 “**very high**” points in visual landscape quality and should be protected as the first degree for this reason.

Hassuni Caves: Hassuni Caves are rated 42 “**high**” points in visual landscape quality. It is recommended to be protected in 2. degree

Hilar Ruins: Hilar Ruins and Rocks have been exposed to anthropological stress in the site area, but due to their land structure, ruins and natural landscapes, it scored 40 “**high**” points in visual landscape quality and should be protected in degree 2.

Ergani Plane Trees and Green Surroundings: This site has a tea garden, and there is an anthropological stress. Due to the plane trees present on this site, the visual landscape quality is 14 “**medium**” points and should be protected in degree 3.

Çermik Thermal Spa and Surroundings: This heritage site is located in the center of Çermik district, and there are some distortions in its natural landscape since it provides service to people as a spa. As a result of visual quality assessment, it is revealed that it should be protected in degree 3 with 24 “**medium**” points.

Gelincik Mountain: It has not exposed to human intervention a lot. Scoring 42 “**high**” points in the assessment, it is recommended to be protected in degree 2 in terms of visual landscape quality.

Sinek Brook Waterfall: Sinek Brook Waterfall has 50 “**very high**” points in visual landscape quality assessment and either with its natural landscape characteristics or not being distorted a lot it should be protected in the 1st. degree.

Çıplak Mountain: It is exposed to anthropological stresses since it is close to settlements. As a result of the assessment, its visual landscape quality is 38 “**high**” points and should be protected in degree 2.

ResultIn terms of visual landscape quality assessments, it is possible to state that weaknesses and threats mentioned about natural sites in Diyarbakir are actually potential problems that all the natural sites in Turkey might come across. Just as in the natural protection sites, conceptual planning and practicing framework in natural sites is an approach based on the preservation and sustainability of resource values.

In this context, planning and managing natural site areas under the rant economy perspective will not be the correct approach. As a result, suggestions were made in terms of legal and managerial, planning and designing as well as practicing for the natural heritage sites in Diyarbakır to all over Turkey, from specific to general.

Suggestions

As a result of the study, the following suggestions were made for the natural sites in Diyarbakır (Table 4).

Table-4. Solution Suggestions for the Conservation of Natural Sites

LEGAL AND ADMINISTRATIVE PROPOSALS	PROPOSALS IN PLANNING AND DESIGN	PROPOSALS ON PRACTICING
<ul style="list-style-type: none"> • Approach to the conservation of natural heritage sites should be distanced from all kinds of rant approach and a national government policy should be established. the main goal should be the reflection of this state policy to the implementation scaler. • The concept of natural heritage sites should be defined based on scientific and objective criteria. • A consciousness and sensitivity should be established about the benefits that these areas provide to the society. • The legal contradictions that concern natural heritage sites should be resolved. In this context, existing laws on nature conservation and other related laws should be rearranged under one "Nature Conservation Law". 	<ul style="list-style-type: none"> • The purpose of planning/design for natural heritage sites should be the preservation and the development of existing natural and cultural source values. • The planning team should involve all the specialists and related professional staff that may be involved in the field. • Natural and cultural inventory should be taken sturdily and continuously updated and monitored using technological facilities. • Natural heritage sites should be seen and evaluated as "Nature Reserve and Heritage" in accordance with the concept of "Sustainable Living". Accordingly, priority should be given to planning and project designing studies that include not only protection, but also sanitation, repair, and renewal. 	<ul style="list-style-type: none"> • In addition to securing the proprietary right of the person and not victimize them, public interest towards the sustainability of the natural existence of the region should be pursued firstly on savings on ownership and legislation should allow this. • Settlement/land expropriation should be done without victimizing citizens and the state should allocate resources for expropriation. • In order to establish an effective protection and usage of such areas, non-governmental organizations with responsible institutions, in particular, universities, and other communities of interest should participate and collaborate • Active participation and contribution of all stakeholders should be provided to the planning and management of natural heritage sites. • Suitable protection and development policies must be implemented by increasing technical and financial support to local administrations (Municipalities and provincial special administrations) and supervising the services they provide. • Informative and introductory panels on natural heritage sites should be prepared. • General Directorate of Cultural and Natural Heritage and the Regional and Local Preservation Councils and Office Directorates affiliated with it should be freed from their current passive, unable, and protection-delaying structures and made into efficient, technically and financially equipped active mechanisms. Board Memberships should be freed of their current frivolous, unscientific, politically everchanging structure, and turned into a persistent, independent, open and scientific one.

The table was prepared by Meltem Erbaş (Land. Arch.), F. Demet AYKAL and Berivan ÖZBUDAK AKÇA

As a result, it must be understood, perceived, and practiced that conservation is a multifaceted collective responsibility for sustainable life, a process that can serve the public weal and the environment, leading society to modernity and universality.

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