The Landscape Visual Management Guidelines in Khoor Highway Park in South Khorasan Province

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Abstract

Landscape as one of the important national resources, cultural and natural heritage that applauded its beauty and its visual characteristics, has a serious share in region identity and genius loci. The landscape has an important application in people enjoyment from natural and man-made environments. Also the landscape is causing the progress of financial and social aspects of regional development in the basis of sustainable development. This research is an effort to visual assessment of landscape of khoor highway park in desert area, 70 km. west of Birjand (the center of south khorasan province), which had been regarded as a desert park by Natural resources Organization. The method of gathering information is based on literature review and field study. Thus the visual assessment of landscape of khoor highway park was done in second phases. The first phase contains visual characteristics of landscape recognition and second phase contains landscape analysis and deduction. In this research, the check list and visual description and analysis techniques had been used to assess the characteristics of landscape types of khoor highway park. The most important achievement of this research is to assess the landscape of Khoor highway park, and researcher's proposals for landscape visual management guidelines, which entail conservation, rehabilitation, and transformation.

Keywords: Visual assessment, Visual management of landscape, Highway parks, Khoor highway park

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Landscape Quality Appraisal from Look Outs for Ecotourism Land Use
(Case study: Patom District of Kheyrud Forest)

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Abstract
One types of tourism that is the most compatible with sustainable development, is ecotourism. The main willingness of ecotourism is based on the quality of nature and its attractiveness. The study area is Patom district of Kheyrud research- educational forest of the Faculty of Natural Resources of University of Tehran. In this research, after preparing the environmental units tables of characteristics of Patom district, the units were classified from the highest diversity of components to the least as superb, common and poor areas, respectively. Then, scenic points and its azimuth were determined by field studies in first class or superb landscapes. Totally, 18 lookouts, landscape and their scenic views were selected in the Patom district. These scenic landscapes provide alternatives for road construction, designing of forest recreation areas, trails and other ecotourismic facilities and amenities.

Key words: Look out, Patom district, Environmental units, Landscape, Scenic views

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Assessing the Impacts of Tehran- Mashhad Asian Highway on Bird Community in Golestan National Park

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Abstract

Road networks extend their impacts on the surrounding habitats along a variable distance, affecting birds living in natural environments. This study identified the threshold distances upon which a road, located across Golestan National Park, altered the abundance patterns of the native avifauna. Species diversity indices, bird density, and association of birds with environmental variables which are potentially sensitive to human disturbances were studied by distance sampling method and ordination procedure. Birds and environmental variables were detected within a 25 m radius of each of 180 sampling points. To determine the bird species density and association between environmental variables and bird community in different distances from the road, distance sampling method and canonical correspondence analysis was performed, respectively. Nearby road affected the species diversity and distribution of birds in the study region. The effect of road was variably negative, although threshold distances to roads varied among different groups of bird species. The bird community of some species such as woodpeckers, nuthatches, thrushes, wood pigeon, wren, and treecreeper was the most sensitive group to the influences from nearby road. Moreover, the most significant impacts of road on bird community occurred within 500 m of the road edge to the forest interior. The second group, including tit species, showed higher resilience to deleterious influences from nearby road. It would be desirable not to build new road developments within the fragmented area of this region, because their existence would add negative effects on the native bird fauna (e.g. on woodpeckers as umbrella species), considering the buffer distances, particularly 500 m from roads which demonstrate the most significant impacts.

Keywords: Birds, Density, Diversity, Golestan national park, Road

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Methodological Concern of Scale in Environmental Studies

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Abstract

Recently, the role of scale as one major restriction on nature recognition is hinted by many references. Accordingly, many experts attempt to explain it methodologically. On one hand, existing complex and complicated biological entities along with ambiguous methods and concepts of mechanical sciences measuring have caused the scale to remain as a crucial issue in ecology and environmental studies. On the other hand, emerging new technologies such as GIS and RS which access huge amount of data on the basis of scale, make fundamentally this issue as a significant subject of nature recognition, This methodological research is trying to explain the scale concept. Therefore, slope map as a principal element in environmental models, was chosen to assess the changes of outputs in terms of scale variety within Makhdum and Ahmadi Models, representative of environmental and watershed management models in Iran, respectively. For that reason, slope maps with two scales (25000 and 50000) and three pixel sizes (10, 20 and 50) were applied meanwhile, it is tried to obviate the misunderstanding which the scale was ignored by modeling process. So, four matrices were included and their changes were investigated by computation of covariance diagonal vector in each matrix. According to observational shifts that affected by scale and non-scale factors while consideration of GIS and RS development, we concluded that the attitude of environmental models must be explained regarding scale concept. Also, the importance of new concepts related to scale (such as pixel size) and concerning the designing and planning phases have been emphasized.

Keywords: Environmental models, Measurement, Scale, Slope, Diagonal vector of matrix covariance

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Feasibility of Combining Two Issues "Environmental Impact Assessment" and "Ecosystem Services Valuation" in Iran

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Abstract

Despite of fifteen years old legislation of Environmental Impact Assessment (EIA) in Iran, investigations show that there are some kinds of shortcoming in the effectiveness and efficiency of these assessments. Although some of these failures were attributed by weakness in the administrative structure, but methodological shortcomings and lack of transparency had an effective role in the these problems. One of the main reasons for this lack of transparency is qualitative criteria for EIA that caused the impossibility of entering the environmental damage inflicted by developments, to the economic cost- benefit analysis. Despite progress made in developing EIA and Ecosystem Services Valuation techniques, different views and methods applied in these two fields of knowledge have led to separate results. In this study the possibility of combining these two processes has been investigated in order to increase the effectiveness of the EIA. Studies show that it is possible to integrate ecosystem services valuation in by applying the changes in EIA Terms of Reference. In fact, with quantitative assessment of the impacts, and choosing the appropriate valuation methods, estimation of the amount of damages to selected ecosystem services would be possible. To develop the TOR, 38 surveys have been completed by EIA expert in Iran. Results shows that the main reasons for EIA shortcoming are "lack of appropriate administrative structure, qualitative criteria of assessment and shortcoming in access to the information". All experts believed that including the ecosystem services valuation in EIA process, will increase its effectiveness. The most appropriate stage in EIA process for valuation is assessment stage and the most appropriate level for valuation is scheming in experts' views. The main shortcoming facing the economic valuation of the environment is the lack of specialists in this field. At the end a model has been suggested for Economic Environmental Impact Assessment (EEIA) and some suggestions is presented to provide the necessary backgrounds for implementation and realization of this integration.

Key words: Environmental Impact Assessment, Ecosystem services valuation, Environmental damage assessment, Iran

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Recreational Optimized Management Plan, a Tool to apply Carrying Capacity Concept in Sustainable Management of Recreational Areas.

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Abstract

Increasing recreational use of natural areas can harm both the environmental resources and the quality of the visitor experience. Determining how much recreational use can ultimately be accepted in a natural area is often addressed through the concept of carrying capacity. It is a useful concept for environmental and resource management and the interaction of human activities with the environment. Different approaches to recreational carrying capacity analysis, along with other techniques for evaluation of land resources have been developed and applied in different recreational regions all around the world, and all of them rely on formulation of indicators and standards of quality of environmental resources and the visitor experience. This paper explains the concept of carrying capacity, compares different approaches and models concerning recreational carrying capacity and then presents the Recreational Optimized Management Plan framework and its components to be used in natural areas of Iran, including a program of research designed to help to achieve a sustainable management in recreational areas. The Framework based on three steps: Defining Management Strategy, Management Plan and Carrying Capacity Estimation.

key words: Recreational Carrying Capacity, Visitor experience , Sustainable management

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Urban Land Use Evaluation Based On Earthquake Risks

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Abstract

Many megacities in the world are located in highly seismically active regions, including Tehran, the national capital of IRAN. Technical and historical studies shows that ruinous earthquakes across the REI fault have lead to casualties and critical damages. Therefore the safety of human settlements and environmental risk factor analysis from the view of land use planning is an important issue in such urban prone areas.

This research aimed to find out how land use planning can be applied as long term proactive approach in reducing the seismic vulnerability of seismically challenged cities as Tehran. Hence by the use of RADIUS, software for hazard evaluation and damage assessment, and geographical information system (GIS) ,urban land use in case study (region 20, district 4 of Tehran municipality) was evaluated with regard to earthquake risks and suggestions as cohering approach in seismically challenged magecities were presented. By selecting earthquake scenario, earthquake risks evaluation can be conducted. In this research, parameters of scenarios selected according to geological studies and historical records.

Key words: Earthquake, Land use, Vulnerability, RADIUS software

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Crop Type Mapping in Qazvin by Using Multi- Temporal Satellite Images: IRSC-LISSIII DATA

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Abstract

In order to address global problems to food security, regional and national planners use multidisciplinary decision support systems for monitoring the agricultural production; Recent development in remote sensing and GIS techniques for land use evaluation can play an effective role in sustainable land use planning.

Crop type mapping is important for a number of reasons. Spatial information on distribution and extent of agricultural production is a significant aspect to generate spatial agricultural statistics. Crop type maps are created by national and local authorities and regional agricultural boards to prepare an inventory of what was grown in certain areas. This serves the purpose of predicting grain supplies, collecting crop production statistics, mapping soil productivity, assessment of crop damage due to draught. This study is based on the observation that there is a serious need to form accurate and timely information on crop area information particularly strategic crop as wheat at national level. Main objective in this research was to map wheat planting area which is the most dominant crop in Qazvin province.According to classification result of imagery taken on 5-May-2003 three different crops of wheat, barley and hay were classified as one class due to very similar spectral reflectance. Therefore the three dominant crops in the area (Wheat, barley, hay) were separated from other land uses. According to crop calendar of the study area most irrigated barley in the area are being harvested within late June, so infra- red reflectance in the next images represent irrigated wheat and some hay.Wheat has been harvested in early August so infra-red reflectance in imagery of early August represent hay. Therefore harvested wheat area may be calculated from this image.This kind of information can play an important role in environmental researches and spatial planning studies.

Key words: Crop monitoring, multi- Temporal, Remote Sensing, Crop type mapping, IRS Satellite

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Ontological explication of ecological knowledge for conservation planning of desert ecosystems

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Abstract

Ecological data combined with the applied knowledge of the ecosystem modeling are the building blocks of policy making and planning efforts for the conservation of ecosystems. The ecological modeling is considered in this paper as the process of transforming ecological data and information (produced through empirical investigations and scientific observations) into a level of general knowledge. This capable of representing and forecasting the key patterns, processes and functioning of ecosystems. Within the past decade, the use of ontologies for explicit specification of conceptualizations within the knowledge systems has been widely adopted and employed by many research communities in the domains of biology and life science to enable automated reasoning using the semantically annotated data models. This paper presents and introduces application of knowledge is semantic annotation and ontologies to elucidate the knowledge of desert ecosystems within the domain of conservation planning in Iran.

Keywords: Ontology, Ecological knowledge, Desert ecosystems, Semantic data modeling, Protégé

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