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DEVELOPMENT OF AN ECOTOURISM MANAGEMENT MODEL OF MANASHT AND QALARANG PROTECTED AREA

GHOLAMHOSSEIN KAZEMI[*1], FOROZAN FAROKHYAN[2], EBRAHIM RAJABZADEH GATARMEI[3], ABDOLREZA FATAHI[4]

[1]MSc. Environmental Management, Islamic Azad University, Sciences and Research Branch of Khuzestan

[2]Ph.D. Environmental Management, Assistant Prof. Islamic Azad University, Sciences and Research Branch of Khuzestan

[3]Ph.D. Biotechnology, Assistant Prof. Khoramshahr University of Marine Science and Technology

[4] M.Sc. student of natural resources, Proliferationof aquaculture, Islamic Azad University of Tonekabon , Iran.

ABSTRACT

Manasht and Qalarang protected area with 29324.78 ha area is located in the north of Ilam province and among three controlling zones of Ilam, Shirvan Chervavel and Eivan city from eastern longitude of 46^0 20′ 31″ to 46^0 38′ 45″ and northern latitude of 33^0 340′ 27″ to $33^0$48′ 32″. Due to ecological conditions of the region, high plant and animal species diversity, existence of beautiful landscapes and problems resulted from unplanned recreational uses of the region, the present study was conducted with aim to development of management pattern to use ecotourism in the region. After data collection and visiting the location and doing field operations and consulting with considered expertsand distributing 470 copies of questionnaire among visitors of the region, the required maps were prepared. The work basis for combination of ecological information was in accordance to Makhdoom ecological model, and also, Geographical Information System (GIS) was used to evaluate ecological potential of the region. According to the software outputs, 271.02 ha of the region was obtained for intensive recreation

zone (1), 74.54 ha for intensive recreation zone (2), 2672.45 ha for extensive recreation zone (1) and 3202.77 ha for extensive recreation zone (2). Results of the questionnaires filled by visitors of the region indicated a shortage infacilities, infrastructures and incorrect use of capabilities of the region. Finally, management strategies and patterns for ecotourism use of the region.

Keywords: Protected area, Manasht and Qalarang, ecotourism, ecological potential, Geographical Information System.

INTRODUCTION

Manasht and Qalarang protected area has a heterogeneous topography and irregular mountains due to being located in middle Zagros. In this region, plant communities have reached climax situation affected by climatic factors. Forest cover of the region has been formed by dominant species of Iranian oak, hawthorn, wild purple, mastics, sand, purple, figs, peanuts, hackberry, etc. Among plant species of the region, beautiful colonies of Tritllariaimperialis, Rhus_coriaria L and Cercis sillsqustrum can be mentioned which have a high tourism value. Existence of beautiful landscapes and amazing valleys and natural richness has caused to emerge a specific ecosystem in that. In terms of recreational, the mentioned region has numerous attractions and cultural and historical monuments including Chalab Wilang Hill, Sang Quchali Haven and Esmail Khan Castle which can cause development of ecotourism in the region (Administration of Environmental Protection of Ilam, 2006). Ecotourism means going to the nature and apurposeful travel in the nature so that, the environment is preserved, and welfare of native people is not disturbed. Keykhavani (2005) conducted a study entitled protective values of Manasht and Qalarang protected area. Ecotourism includes any kind of tourism related to the nature. Ecotourism is combined by words ecosystem and tourism which includes any type of tourism activities in natural and cultural environments so that, people can travel to the regions with attractions including mountains, deserts, coastal areas, protected areas, islands and agricultural and rural habitats or they can live with the residents of touristic regions with available facilities there and get familiar to life styles of native people, and they can do natural travels such as hiking, going to the woods, meadows, gardens and deserts (Abbaspoor, 2007).Shariatnezhad and Sharifi (1996) have considered the base of ecotourism as how the tourist uses cultural and natural resources without any negative effect on the mentioned resources. They

introduced the resources and discussed about ecological tourism, goals of national parks and wildlife sanctuaries before giving any suggestion. They also mentioned about chain plan of ecotourism that firstly needs estimation of ecological domination capacity of resources. Considering natural conditions of Manasht and Qalarang and having habitat, plant and animal diversity as well as recreational capability and closeness to the center of Ilam city and existence of access ways, and locating in the triangle of three cities of Ilam, Eivan and Sarabeleh with total population of 220000 people has a an appropriate opportunity for sustainable development in direction of economic, social and cultural growth of rural regions and conservation of available rich forest resources using participation ability of native people (Administration of Environmental Protection of Ilam, 2006). Therefore in the present study, ecological resources of Ilam city including physical resources consisting of climate, weather, stones, shape of the earth, soils, etc. and biological resources including plant and animals of the region were identified for the first time,they were combined with economic, social and cultural conditions to develop an integrated plan about recreational uses with aim to implementation of ecotourism industry in Manasht and Qalarang protected area.

MATERIALS AND METHODS

In the present study, data collection was conducted from books, journals and written reports. Then, we went to the considered site and carried out field operations including preparation of picture and videos and interviews with native people. Based on the requirements of the study and consulting to the considered experts, the needed maps including shape of the earth, climate, soil class, water resources, plant cover and geological maps as well as slope, direction and elevation maps were prepared using SPSS, RS, Arc GIS and ArcView.

RESULTS

1- Results of the visitors' feedback

In order to planning and optimal use of Manasht and Qalarang protected area in different months of year, 540 questionnaires which had been provided by coordination and cooperation of experts and using the questionnaires applied in the other similar studies, were distributed among the visitors of which 70 papers were disappeared due to carelessness and inaccessibility of them. Totally, 470 questionnaires were collected from the visitors and were analyzed. The obtained results are as below:

Table 4.2. Gender status of the visitors

percentage of frequency	Frequency	Statistical index / Gender
65.7	309	Male
34.3	161	Female

Table 4.1. Age status of the visitors

Percentage of frequency	Frequency	Statistical index / Age (year)
6	28	Less than 15
35.1	165	15-30
48.9	230	30-50
10	47	More than 50

Table 4.3. Marital status of the visitors

Percentage of frequency	Frequency	Statistical index / Marital status
70	329	Single
30	141	Married

Table 4.4. Educational status of the visitors

Percentage of frequency	Frequency	Statistical index / Education level
3	14	Master of science and higher
22	103	Bachelor
30	141	Post diploma
36	169	Diploma
5	24	Lower than diploma
4	19	Illiterate

Table 4.5. Occupational status of the visitors

Percentage of frequency	Frequency	Statistical index / Occupational status
31	146	Employee
25	118	Free job
19	89	Labour
9	42	Other jobs
16	75	Unemployed

Table 4.6. Status of travel origin of the visitors

Percentage of frequency	Frequency	Statistical index / Origin of travel
66	310	Ilam province
25	117	Neighboring provinces of Ilam
1	5	Iraq
8	38	Other points of Iran

Table 4.7. Information status of the visitors about the region

percentage of frequency	Frequency	Statistical index / The way of getting information about the region
54	254	Native of the province
31	146	Guidance by friends and relatives
5	23	Journals and newspapers
10	47	Accidental

Table 4.8. Status of how to travel by the visitors

Percentage of frequency	Frequency	Statistical index / Transport
62	292	Vans and cars
9	42	Buses and minibuses
0.6	3	Airplane
16.4	77	motorbike
12	57	Walking

Table 4.9. Accommodation status of the visitors

Percentage of frequency	frequency	Statistical index / Accommodation style in the region
58	273	Tent
15	70	Open space
11	52	Hotel
16	75	Home of relatives and acquaintances

Table 4.10. Status of the visitors' groups

Percentage of frequency	Frequency	Statistical index / Visitors' groups
61	287	Less than 5 persons
17	80	5 persons
12	56	5-10 persons
7	33	10-20 persons
3	14	More than 20 persons

Table 4.11. Status of visitors' groups combination

Percentage of frequency	Frequency	Statistical index / Visit style
70	329	Familial
15	70	With friends
7	33	With touristic groups
2	10	Scientific groups
6	28	Cultural-religious groups

Table 4.12. Visit status in different seasons

Percentage of frequency	Frequency	Statistical index / Visit season
62	291	Spring
8	38	Summer
13	61	Autumn
17	80	Winter

Table 4.13. Times of visiting the region

Percentage of frequency	Frequency	Statistical index / Visit times per year
65	306	1-4
9	42	Less than 4
26	122	More than 4

Table 4.14. Status of access routes to the region

Percentage of frequency	Frequency	Statistical index / Access routes to the region
7	33	Weak
11	52	Moderate
7	33	Good
75	352	Very good

Table 4.15. Facility status of the region

Percentage of frequency	Frequency	Statistical index / Facility status of the region
86	404	Weak
8	38	Moderate
5	23	Good
1	5	Very good

Table 4.16. Capability of the region for ecotourism

Percentage of frequency	Frequency	Statistical index / Capability of the region for tourism
54	253	Excellent
11	52	Good
15	71	Moderate
20	94	Weak

Table 4.17. Status of current use of the region for ecotourism

Percentage of frequency	Frequency	Statistical index / Status of current use of the region for ecotourism
4	19	Excellent
9	43	Good
11	52	Moderate
76	356	Weak

Table 4.18. Effects of tourism on economic status and etc. of the region

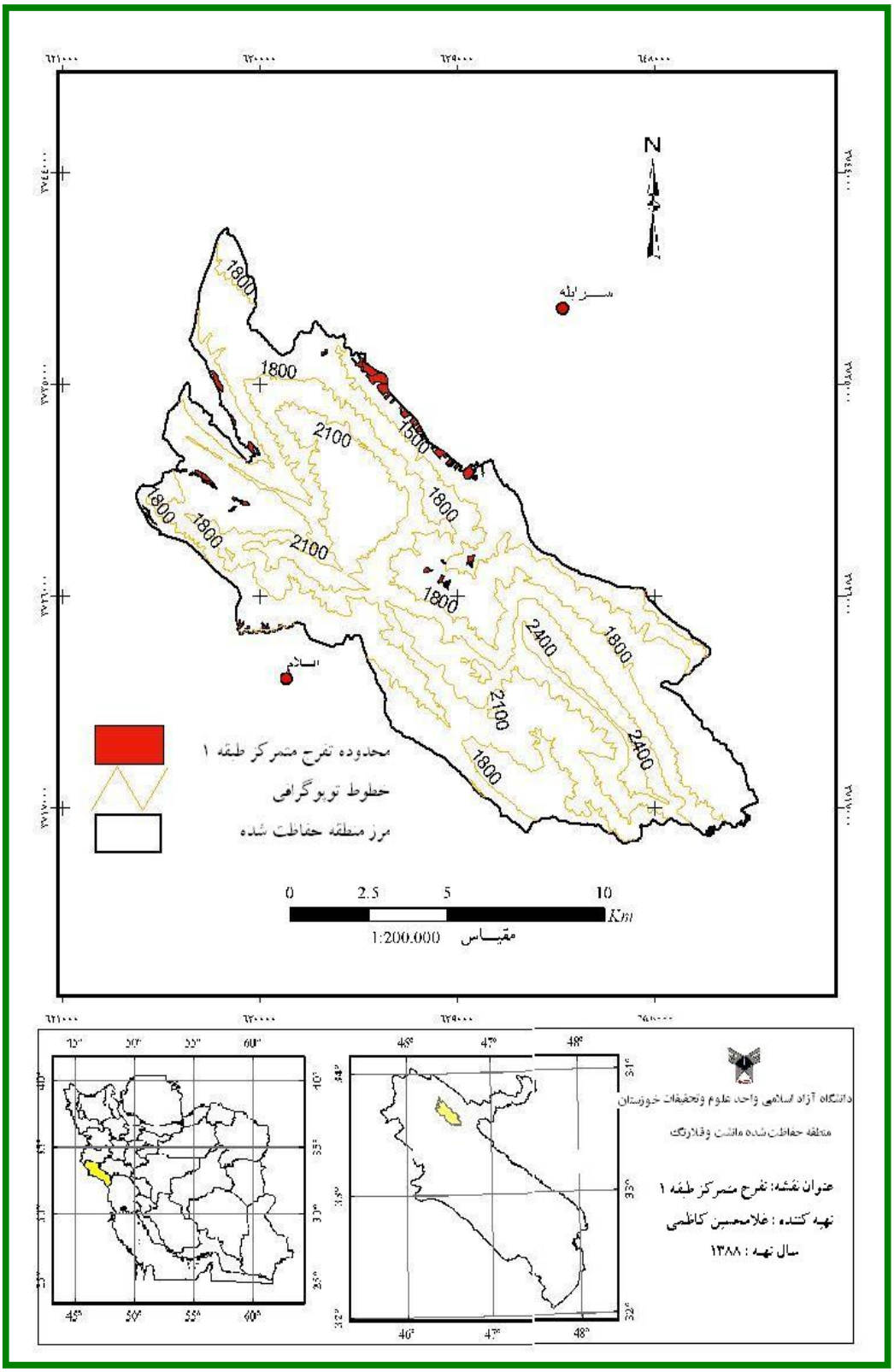
Percentage of frequency	Frequency	Statistical index / Implementation of tourism industry on socioeconomic status of the region
58	273	Completely effective
16	75	Somehow effective
26	122	Ineffective

Table 4.19. Status of the effects of tourism on wildlife of the region

Percentage of frequency	Frequency	Statistical index / Effect of implementation of tourism industry on wildlife of the region
47	219	Completely effective
21	99	Somehow effective
32	152	Ineffective

Final results of maps outputs of the studied area for ecotourism use

Shape of the earth includes natural units of the earth that have their unique three-dimensional shape. In order to investigating shapes of the earth to identify resources and evaluate ecological potential, it was needed to decompose the earth' shape to its main components and then, the components to be composed to each other to create unique units of the earth. It was conducted and finally, various layers were combined and the final output for ecotourism use was obtained as follows: 271.02 ha of the region was obtained for intensive recreation zone (1), 74.54 ha for intensive recreation zone (2), 2672.45 ha for extensive recreation zone (1) and 3202.77 ha for extensive recreation zone (2). Totally, 6220.78 ha was considered for ecotourism use as it has been shown in Map (2-2) and (1-1).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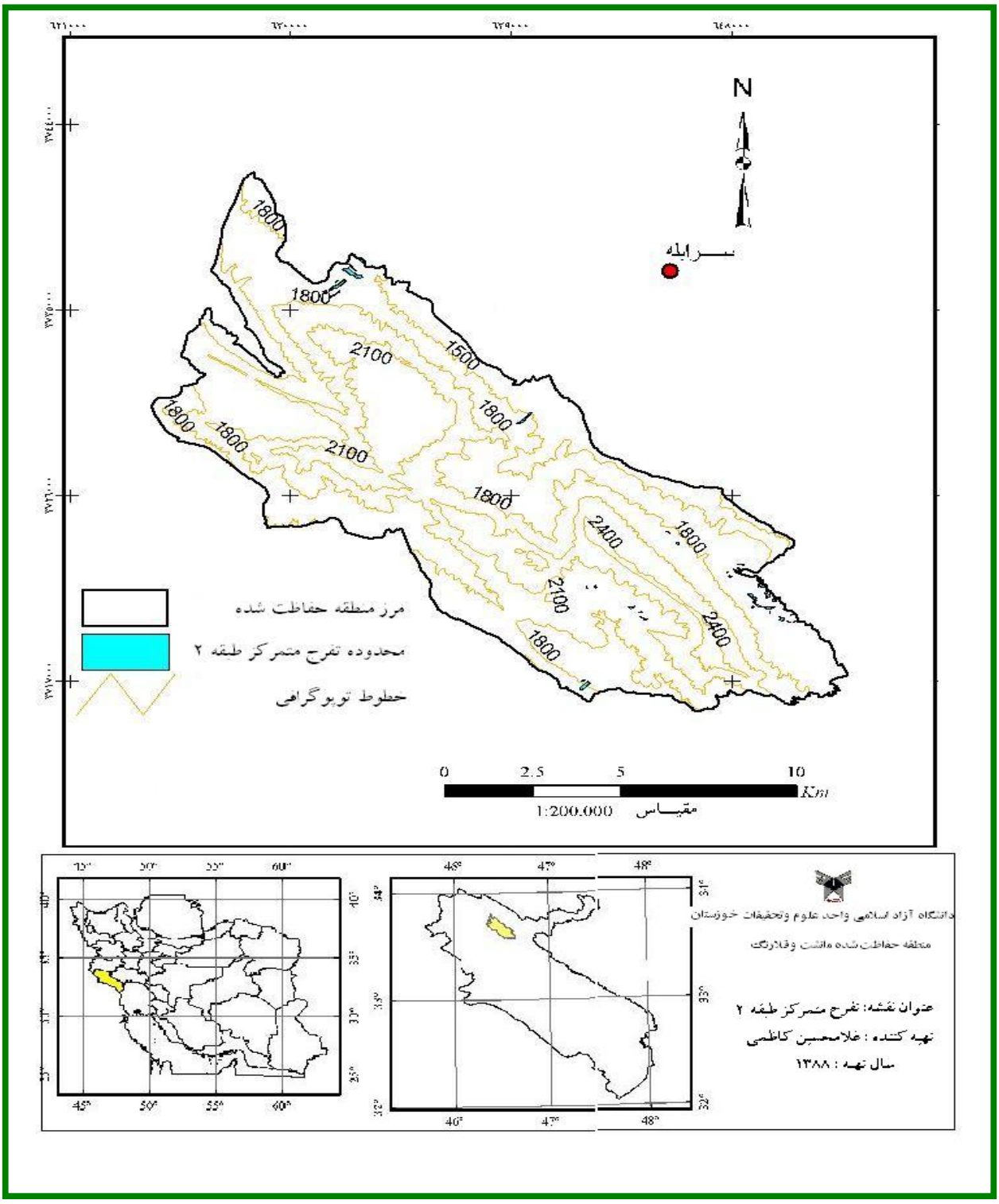
منطقه حفاظت شده هانتر وقلارنگ
عنوان نقشه: تفرج متمرکز طبقه ۱
تهیه کننده : غلامحسین کاظمی
سال تهیه : ۱۳۸۸

Map 4.1. Area of intensive recreation of zone 1 in Mansaht and Qalarang protected area



Map 4.2. Area of intensive recreation of zone 2 in Mansaht and Qalarang protected area

DISCUSSION AND CONCLUSION

The results demonstrate inappropriate information to introduce natural attractions of Ilam province particularly Manasht and Qalarang region. Existence of extensive information in economic, social and cultural fields can has an important role in planning and decision makings in addition to making analysis of facilities and capacities of the region possible at macro level. It can be claimed that, existence of accurate information about a region is the foundation of planning and development. After final analysis of questionnaires, in terms of age, the maximum statistic was for the ages of 30-50 years old and the minimum was for the ages less than 15 years old which indicates that, usual combination of the visitors includes adult and elder people, and this result is consistent to most of studies conducted in Iran and other points of the world. For instance, Abbaspour investigated the status of ecotourism of Dena protected area and announced that, majority of visitors are the people older than 30 years. Mahshidi also investigated the ecotourism of Quri Qale Cave and mentioned that, people older than 30 years have higher interest to visit the region. In most of similar studies, presence of women in tourism programs has been reported less than men. For example, Dulberg emphasizes on higher presence of women in management of ecotourism based on plural participation in direction of economic decision and etc. in Mkuze lagoon. Considering that Ilam Province is a frontier province and has about 425 km common border with Iraq, currently travelling to Iraq and vice versa is possible so that, 1% of visitors of the region are from Iraq by their relatives for leisure. Welcome of foreigners in this study was higher than ecotourism studies in Dena protected area; but it was lower than Qeshm touristic area. About 80% of visitors have been gotten familiar to the region by their relatives and friends, and the minimum percentage of the visitors have known the region through newspapers and press. Which indicates weak information about introducing the nature attractions of Ilam province and especially Manasht and Qalarang protected area. The results of single variance analysis test with 95% of confidence level showed that, the obtained statistical difference among the data is significant so, the first hypothesis which mentions that, Manasht and Qalarang protected area is capable for development of tourism industry in terms of ecological, is confirmed ($p<0.05$).More than 80% of the visitors believed that, current status of the use of the region for ecotourism is weak and

it shows that, currently, no plan has been implemented for tourism management of the region, and capabilities of the region have not been appropriately used. The results of single variance analysis test with 95% of confidence level showed that, the obtained statistical difference among the data is significant so, the first hypothesis which mentions that, currently, the mentioned potential is not used properly, is confirmed ($p<0.05$).According to the used model to determine recreational areas in Manasht and Qalarang protected area, 271.02 ha of whole area of the region was dedicated to intensive recreation zone (1). 122 units were determined in the region by combining the shape of the earth (slope, elevation and direction). Results of this part of the work are highly consistent with the results of many similar studies. For instance, Fani Thani (2002) investigated the ecotourism of Khoshkehdaran protected area and reported that, slope is a limiting factor to determine the area dedicated to intensive recreation zone (1). Makhdoom (1991) conducted a study on evaluation of ecological potential of Gilan and Mazandaran regions and reported that, slope is a limiting factor in intensive recreation zones. In determination of proper regions for intensive recreation, about 74.54 ha of the region was diagnosed proper for intensive recreation zone (2) based on the output of the used software. The mentioned area was determined mostly in northern and eastern parts of the protected area. In these regions, slope and soil were recognized as limiting factors for development of recreation which is consistent to the similar studies. For instance, Qasemabadi (2003) carried out a study on ecotourism of Taft city in Yazd province. He mentioned that, soil and slope are the limiting factors to develop intensive recreation zone (2) in the region. About 2672.45 ha of the region was considered proper for extensive recreation (1). According to the software outputs, almost all margins around the region are capable to be used as extensive recreation (1). Also, 3202.77 ha of the region was determined proper for extensive recreation (2). These area were mostly determined in the south east of the protected area. Generally, by combining the information layers, it can be concluded that, marginal parts of the protected area have appropriate conditions for recreation.

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