

The natural areas and landscape of Iran: an overview

by B. Zehzad, Bahram H. Kiabi, and H. Madjnoonian

Iran forms a large part of the Iranian plateau, and covers an area of 1,623,779 km². It is bordered in the north by the Caucasus Mts., Middle Asian natural regions and the Caspian Sea (-27 m below sea level); in the west by the Anatolian and Mesopotamian regions; in the east by the eastern part of the Iranian plateau (Afghanistan and adjacent west Pakistan) and the Baluch-Sindian region; and finally in the south by the Persian Gulf and Oman Sea, which are connected by the latter to the Indian Ocean. The main highlands are comprised of four distinct mountainous areas: Alburz in the north (Mt. Damavand, 5628 m; Mt. Takht-e Soleyman, 4643 m); Kopet-Dagh and north Khorasan ranges in the north-east (Mt. Hezar-Masjed, 3040 m; Mt. Binaloud, 3211 m); Zagros in the west (Mt. Dena, 4409 m; Mt. Zard-Kuh, 4221 m); Jebal Barez and Baluchestan mountains in the central to southeast (Mt. Bahraseman, 3886 m; Mt. Pelvar, 4233 m; Mt. Jupar, 4135 m; Mt. Lalehzar, 4351 m; Mt. Tافته, 3941 m). In addition, the northwest Iranian mountainous area (Mt. Sabalan, 4811 m; Mt. Sahand, 3707 m) and the central Iranian mountainous area (Mt. Karkas, 3895 m; Mt. Shirkuh, 4055 m) form more or less distinct highlands in the inner part of the country.

Seven desert plains and depressions give the landscape a completely different appearance: Dasht-e Kavir in Central Iran, Dasht-e Lut desert, Sistan and Jazmurian depressions in the southeast, Khuzestan plain in the southwest, Moghan steppe in the northwest and the Turkman-Sahra steppe in the northeast. Six main watershed areas are recognized within the country, but the central and southern watersheds in particular often are divided up into 21 by different authors. More than 20 larger lakes form part of the landscape of Iran, with the largest one, the saline Urumia Lake, covering 4,868 km² in the northwest.

Climatologically, Iran is predominantly an arid and semi-arid country, but the northern slopes of the Alburz ranges and the Caspian lowland receive 800 to 2000 mm annual rainfall and are the most humid part of the country. The Dasht-e Kavir and Dasht-e Lut deserts are the driest parts with less than 150 mm annual precipitation. The highlands receive between 250 and 800 mm. From a bioclimatic point-of-view, SABETI divided the country into 14 bioclimatic types based on Emberger's method.

So far as plant geography is concerned, Iran is divided into three distinct phytogeographic regions: the Hyrcanian region in the north, the Nubo-Sindian region in the south, and the Irano-Turanian region in the rest of the country, which occupies more than two-thirds of the land-surface. The Iranian vascular plant flora comprises approximately 10,000 species, with about 20% of them being endemic.

Zoogeographically there is no thorough overall scientific assessment, but some analyses provide valuable data on particular animal groups, mainly vertebrates. The total mainland Iranian vertebrate fauna comprises 1072 species, but to these must be added more than 600 marine fish species belonging to the fauna of the Caspian Sea, the Persian Gulf and the

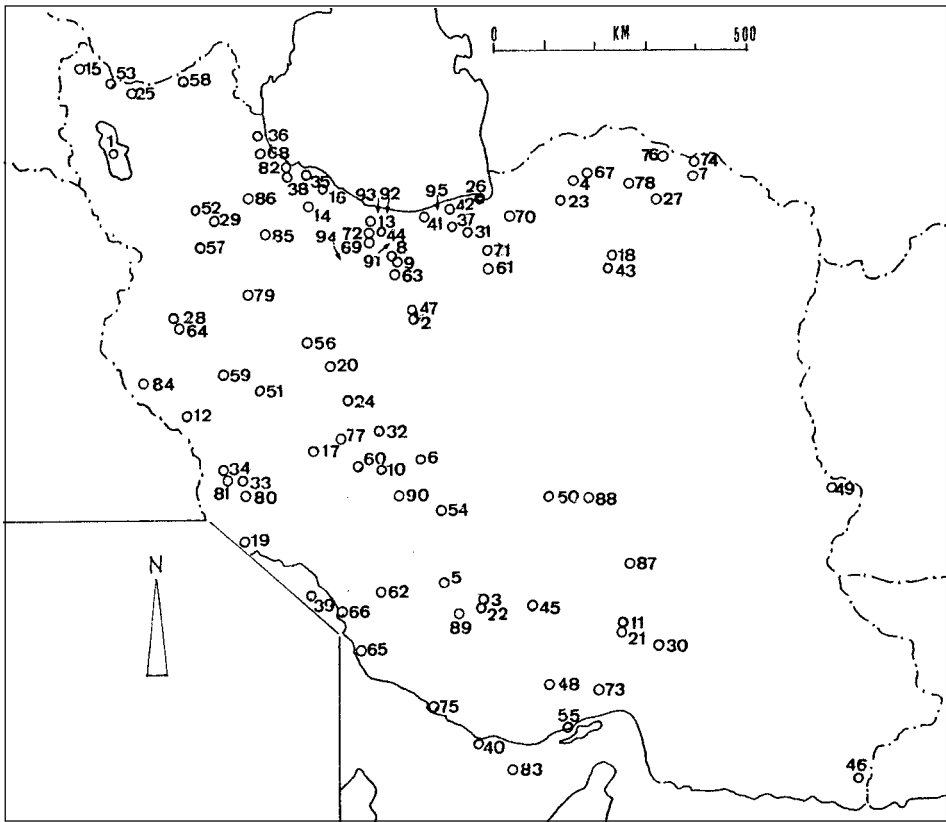


Fig. 1. Selection of protected areas in Iran. N.P. = National Park; N.M. = National Monument; W.R. = Wildlife Refuge; P.A. = Protected Area; P.R. = Protected river.

- | | | | |
|----------------------------|------------------------------|--------------------------|------------------------|
| 1. Urumia N.P. | 18. Turan W.R. | 34. Karkheh W.R. | 52. Anguran P.A. |
| 2. Kavir N.P. | 19. Shadegan W.R. | 35. Amir Kolyeh W.R. | 53. Marakan P.A. |
| 3. Bakhtegan N.P. | 20. Mooteh W.R. | 36. Lavandvil W.R. | 54. Dena P.A. |
| 4. Golestan N.P. | 21. Ruchun W.R. | 37. Semeskandeh W.R. | 55. Hara P.A. |
| 5. Bamu N.P. | 22. Bakhtegan W.R. | 38. Selkeh W.R. | 56. Haftad-Golleh P.A. |
| 6. Kolah-Gazi N.P. | 23. Khosh Yeylag W.R. | 39. Kharku W.R. | 57. Bijar P.A. |
| 7. Tandooreh N.P. | 24. Gamishlu W.R. | 40. Shidvar W.R. | 58. Arasbaran P.A. |
| 8. Khojir N.P. | 25. Kiamaki W.R. | 41. Fereydoon Kenar W.R. | 59. Sefid Kuh P.A. |
| 9. Sorkh-e Hesar N.P. | 26. Miankaleh W.R. | 42. Dasht-e Naz W.R. | 60. Sabz Kuh P.A. |
| 10. Tang-e Sayyad N.P. | 27. Miandasht W.R. | 43. Turan P.A. | 61. Parvar P.A. |
| 11. Khabr N.P. | 28. Bistoon (Varmanjeh) W.R. | 44. Alburz Markazi P.A. | 62. Arzhan P.A. |
| 12. Dehloran N.M. | 29. Anguran W.R. | 45. Bahram-e Goor P.A. | 63. Jajrud P.A. |
| 13. Khoshkeh-Daran N.M. | 30. Mahrooyeh W.R. | 46. Gandu P.A. | 64. Bistoon P.A. |
| 14. Susan-e Sefjd N.M. | 31. Dodangeh W.R. | 47. Kavir P.A. | 65. Mond P.A. |
| 15. Sahulan Cave N.M. | 32. Kolah-Gazi W.R. | 48. Hormud P.A. | 66. Helleh P.A. |
| 16. Sarv-e Harzvil N.M. | 33. Dez W.R. | 49. Hamoon P.A. | 67. Gorkhood P.A. |
| 17. Laleh-ye Vazhgoon N.M. | | 50. Kalmard P.A. | 68. Lisar P.A. |
| | | 51. Oshtoran Kuh P.A. | |

69. Lar P.A.	76. Sarani P.A.	83. Farur P.A.	90. Kuh-e Khiz-o Sorkh P.A.
70. Jahan-Nama P.A.	77. Tang-e Sayyad P.A.	84. Manasht & Galarang P.A.	91. Jajrud P.R.
71. Sarigol P.A.	78. Salook P.A.	85. Bashkel P.A.	92. Chalus P.R.
72. Varjin P.A.	79. Lashkar-Dar P.A.	86. Sorkh-Abad P.A.	93. Sardab-Rud P.R.
73. Geno P.A.	80. Dez P.A.	87. Bidooiyeh P.A.	94. Karaj P.R.
74. Tandooreh P.A.	81. Karkkeh P.A.	88. Kuh-e Bafg P.A.	95. Lar & Haraz P.R.
75. Nayband P.A.	82. Siah Keshim P.A.	89. Mian-Jangal-e Fasa P.A.	

Oman Sea (Tab. 1). Unfortunately, there is no clearcut picture of the zoogeographic affinities or of the degree of endemism of the Iranian fauna. Nevertheless it is apparent that the majority of the vertebrate fauna belongs to the Palaearctic region. COAD believes that 15% of all Iran's freshwater fishes are endemic. MISSONE gives 18% for endemic mammals. Tab. 1 gives the vertebrate species diversity and their IUCN categories.

About 5% of the national territory is under protection for conservation purposes. In terms of protected area management categories, the present status of these areas is given in Tab. 2 and 3 as well as in Fig. 1. The majority of the protected areas lie in the Irano-Turanian region. Nevertheless, it seems that there are still some additional representative landscapes where new sites should be set aside in order to complete the network of protected areas.

Tab. 1. Diversity and status of vertebrate taxa in Iran, and their IUCN management categories (species & subspecies). EX = extinct; CR = critically endangered; EN = endangered; VU = vulnerable.

	no. of species	EX	EN	VU	CR	Total
Mammalia	166	3	7	24	5	39
Aves	502	–	1	13	3	17
Reptilia	196	-	4	4	1	9
Amphibia	20	–	–	2	–	2
Osteichthyes (Inland)	188	–	6	1	–	7
Osteichthyes (marine)	>600					
Total	1072+>600	3	18	44	9	74

Tab. 2. Distribution of protected areas in Iran in different biogeographic regions.

Region	% of the country's area	proportion under protection (%)
Hyrceanian	4.06	23.2
Irano-Turanian	69.86	63.4
Nubo-Sindian	26.08	13.4
Total	100.00	100.0



Fig. 2. View of Golestan National Park in the Caspian Region.

Tab. 3. Size and number of protected areas in Iran (the total values do not include the protected rivers).

management categories	IUCN equivalent	no. of sites	relative size (%)	proportion (%) of country area
National Park	II	12	13.7	0.9
Natural Monument	III	7	0.1	<0.1
Wildlife Refuge	IV	27	31.5	2.0
Protected Areas	V or VI	88	54.7	3.5
Protected Rivers	0	5	0.0	-
Total	-	134	100.0	6.5

Authors' addresses: B. Zehzad and Assis. Prof. Bahram H. Kiabi, Department of Biological Sciences, Faculty of Sciences, Shahid Beheshti University, Evin, Tehran-19, Iran, E-mail: b-kiabi@cc.sbu.ac.ir. – H. Madjnoonian, Department of the Environment, P.O. Box. 15875-5181, Tehran, Iran.