

Nay-Band Coastal - Marine National Park; Missed Opportunity for Iran

Ali Jafari^{1*} Roya Rahnama²

¹ Assistant professor, Department of Fisheries and Environment, Faculty of Natural Resources and Earth Sciences, Shahrekord University, Iran.

² PhD, Department of Aquatic Health, Veterinary Faculty, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

*Corresponding Author

E-mail: jafari.ali@nres.sku.ac.ir

Abstract

Nayaband coastal protected area with approximately 49815 ha area, south of Iran, was the best opportunity to become the first and only Iranian coastal-marine national park due to its special geographical location and ecological characteristics. However, with the establishing of natural gas extraction facilities in its neighboring as the largest and most important energy zone in Iran, since 1997, and the emergence of extensive environmental impacts of the project activities, today this opportunity should be considered forever to be lost. In this paper, the criteria for site selection of coastal-marine national parks have been determined through a literature review and then the ecological characteristics of the study area compared with these criteria. The most important criteria for site selection of coastal-marine national parks are biodiversity (including both species and habitat diversity) and ecological integrity. Based on the results Nayband coastal protected area benefits a diversity of habitats including mangrove forest habitats, river estuaries, creeks, coral reefs, small gulfs, tidal zones, sandy and rocky beaches, coastal lagoons and terrestrial savanna like habitats. This diverse habitats encompass more than 300 species including plants, mammalian, aquatic and terrestrial birds, amphibians, reptiles, fishes, shrimps, lobsters, oysters, gastropods and corals species, and maybe more unknown species from invertebrates and insects. Overall, the study area in terms of biodiversity criteria could earn points for assigning the title of "National Park". Nevertheless, unfortunately, because of the development and industrial activities in the onshore and offshore, the second criteria, ecological integrity, has been affected drastically. Disturbing upstream-downstream surface runoff, blocking migratory corridors, receiving air and water pollutants, constructing bridges and closing or tightening water entrance of creeks have been led to the deterioration of ecological integrity. That is, the opportunity of establishing the first and only Marine – Coastal National Park of Iran has been lost.

Keywords: Asalouyeh, Biodiversity, Coastal-marine National Park, Mangrove

INTRODUCTION

Biodiversity conservation in Iran, in its modern form, was provided since 1967 with the allocation of parts of the country to national parks (at that time, called wildlife parks) and protected areas with defined definitions. At that time, the proposal for the establishment of two national parks and fifteen protected areas as the first group of protected areas of Iran was approved by the Supreme Council of the Hunters and the Hunting Supervision. So far in Iran, 30 national parks with a total area of 2056577 hectares, 37 national natural monuments with a total area of 40,939 hectares, 45 wildlife sanctuaries with a total area of 5864657 hectares and 170 protected areas with a total area of 9795013 hectares, have been established totally cover 10.77% of Iran's territory [1].

By definition A marine national park is a park consisting of an area of sea (or lake) sometimes protected for recreational use, but more often set aside to preserve a specific habitat and ensure the ecosystem is sustained for the organisms that exist there [2] and [3]. The official definition of "National Park" according to Iran's DOE is "Natural areas with relatively large extent and special characteristics with national significance in terms of geology, ecology, geography and landscape, with the aim of preserving the biological and natural conditions, Improvement of the plants and animal species and habitats, as well as recreational aspects. National parks are the right places for educational, research and tourism activities in nature. In the fundamental protection of biodiversity, genetic resources, ecological integrity and prospects, activities related to exploitation and residential uses are not permitted in these areas. For this reasons, for national parks, legal protection is projected to be more robust than other protected areas"[4].

Although, there are abundant coastal areas and lagoons with various titles of the Wildlife Refuge and Protected

Area in the list of Iran's DOE protected areas, but due to the wide extent of the 5780 km coast of Iran, the lack of a title called Coastal-Marine National park is considerable. Therefore, Iran's DOE from the outset was looking for eligible coastal areas for the purpose of assigning the title of National Coastal-Marine Park. Considering the ecological characteristics of the Nayband beach, this region was the best candidate for this title and a good choice. This area is located on the southern coasts of Iran and the eastern part of Bushehr province. In the natural landscape of this area, there are numerous harbors, mangroves, sandy beaches and ancient trees of the temples, the plains of the deep and rocky valleys for them has been identified as a Protected Area since 1977.

MATERIALS AND METHODS

Study area

Nayband coastal - marine protected area located in the northern coast of Persian Gulf, 320 km southeast of Bushehr province, in the geographical location of 52° 27' 28" to 52° 52' 20" longitude and 27° 09' 25" to 27° 28' 15" latitude. This area has 49815 hectares area out of which 27815 ha is marine and the rest 22000 ha is land [5]. Figure 1 shows the boundary of the protected area in the region. The altitudinal range of this area differs from zero to 124 m above sea level. The mean annual precipitations are 94 mm and mean annual temperature is 28 °C. Overall, this area has a warm extra arid climate.

National parks site selection criteria

According to carry out literature review and mainly based on IUCN guidelines[6], there are two main criteria for site selection of national parks including marine – coastal parks; i) Biological Diversity (Biodiversity) and ii) Ecological Integrity. Biodiversity includes both habitat and species diversity. Ecological integrity means "The ability of

support and maintain ecological processes (energy, material and gene flows)” and/or “The ability of support and maintain diverse community of organisms [7], [8] and [9].

Data collection and processing

Data on both criteria collected through literature review of existing published and unpublished documents specially the reports of comprehensive management plan of Nayband protected area found in Bushehr provincial Department Of Environment [10]. Then, collected data were controlled and completed or updated in some cases by field surveys and interviewing with local or national experts.

Data analysis and decision-making

Making decision on whether the study area has eligible for assigning the title of national park or not, requires the comparison of its ecological characteristics versus above-mentioned criteria one by one. Meanwhile, as we did not have data on the quantity of both ecological characteristics and site selection criteria, we did this comparison

qualitatively and subjectively, for instance we used species richness in substitution of species diversity indexes such as Shannon-Weaner or Simpson etc. we also used a qualitative base (excellent, good, weak, etc) for the existing situation of ecological integrity.

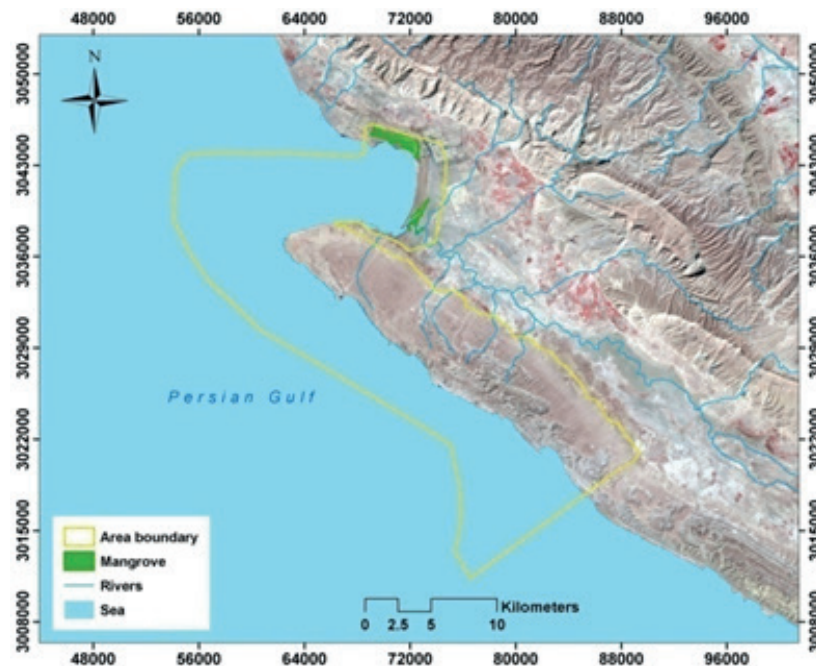


Figure 1. Location of the study area

RESULT AND DISCUSSION

Biological Diversity (Biodiversity)

According to the literature carried out, study area, Nayband coastal protected area, benefits a diversity of habitats including mangrove forest, river estuaries, creeks, coral reefs, small gulfs, tidal zones, sandy and rocky beaches, coastal lagoons and terrestrial savanna-like habitats. This diverse habitats encompass more than 300 species including 121 plants, 17 mammalian, 50 aquatic and 60 terrestrial birds, 2 amphibians, 16 reptiles, 54 fishes, 6 shrimps, 6 lobsters, 7 oysters (almost bivalves), 9 gastropods, 5 corals species, and maybe more unknown species from invertebrates and insects. Overall, the study area in terms of first criteria, biodiversity, could earn points for receiving the title of the national park.

Ecological integrity

Unfortunately, because of the development and industrial activities in the onshore and offshore, the second criteria, ecological integrity, affected drastically. Gas extraction and refinery facilities have been led to upstream – downstream surface water flow regime be disturbed and disconnected

drastically. Constructing bridges and closing or tightening water entrance of creeks have been led to tidal process not be in its natural form. Infrastructure development (airport, roads, dumping areas, buildings, pipe routes, etc) have been led to blocking and missing migratory corridors to and from this protected area. Chemical pollutants flows from offshore-developed lands to coastal areas and creeks have been led to habitats and species diversity and richness diminished.

CONCLUSION

Nay-Band protected area has been the best candidate for receiving the title of first and only marine-coastal national park of Iran, as our research revealed. Although, this area upgraded to National park since 2004 for its habitat and species diversity, but may diminish to a wildlife refuge or protected area if current threats for its ecological integrity continue. Both gas extraction and biodiversity conservation in the study area are important at national level, but, in the competition between economy and ecology, the economy has been preferred in this area. Considering the magnitude and persistence of the effects of the development of gas extraction and refining facilities, it seems that any attempt to restore the ecological conditions of the region to initial

situation would be fruitless. That is, the opportunity of establishing the first and only Marine – Coastal National Park of Iran has been lost.

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