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# Current Status of Nature Reserves in Palestine

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**Abstract**
Nature reserves are an important component of the strategy to halt biodiversity loss caused by habitat fragmentation and loss, climate change, and other anthropogenic factors. The results of our study showed that: (1). Palestine currently has 50 nature reserves covering approximately (511.58 km$^2$), 9% of the West Bank region area. These reserves were established for a variety of reasons - often unrelated to the protection of biodiversity. In the year 1999, the Ministry of environmental affairs proposed the establishment of Wadi Gaza wetland reserve, which is the first nature reserve was declared by the Palestinian legislative council. The smallest nature reserve has an area of (0.01 Km$^2$), and the largest has an area of (85.59 Km$^2$). The Palestinian nature reserves institutional framework, either out of date or not covering all aspects of nature reserves and emerging issues at the national level More scientific approach is needed to effectively re-establish and manage nature reserves in Palestine. Wadi Alquf forest reserve is the only forest reserve, that has management Plan, but till now this management plan neither published nor implemented on the ground yet.

**Keywords:** Nature reserves, Forests, Status, Palestine.

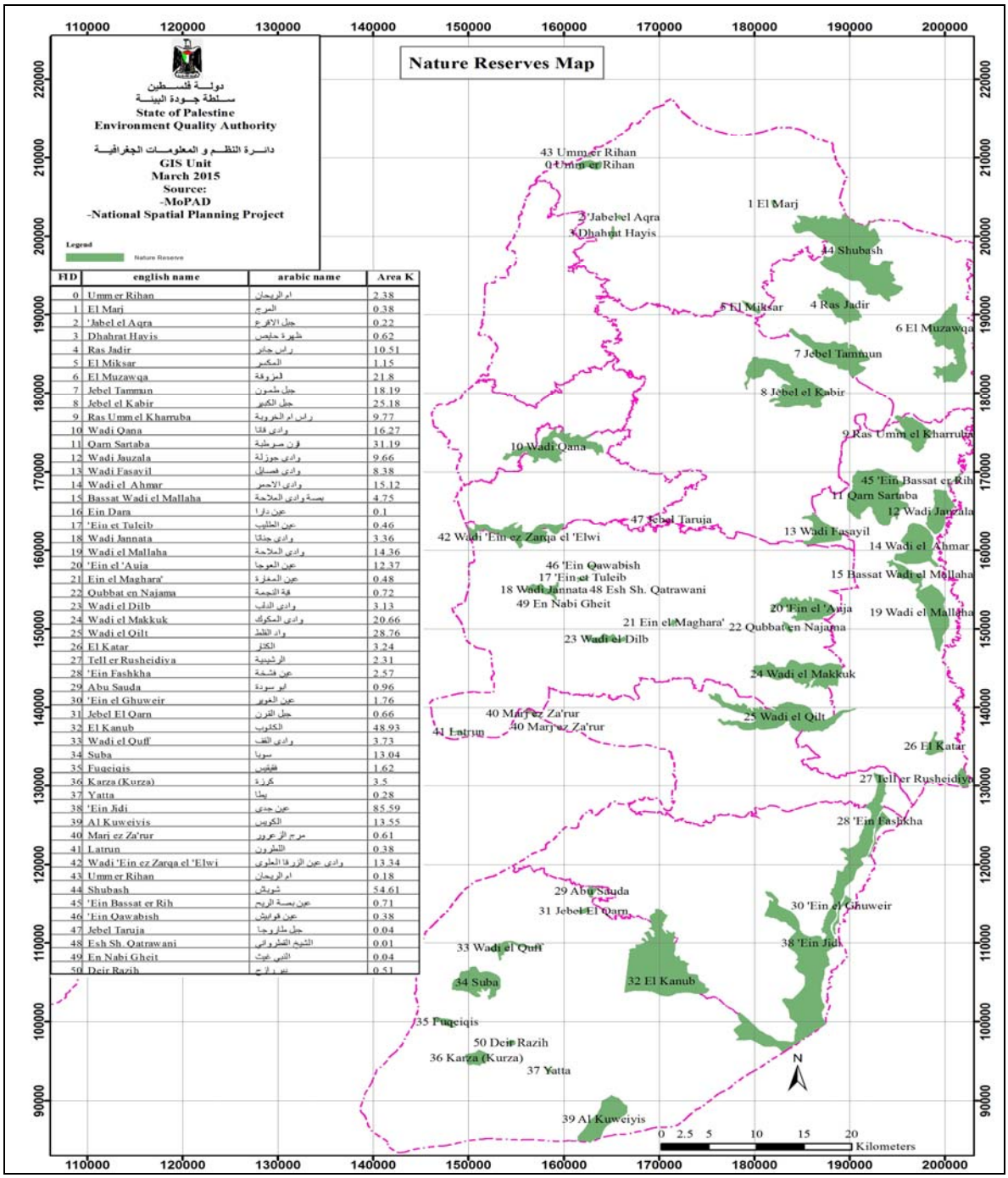
## Introduction
Internationally the establishment and management of protected areas is a fundamental mechanism for the conservation of biological diversity [1-3]. The value of protected areas in providing ecosystem services to society is increasingly recognized [4, 5]. Global recognition of the importance of protected areas for Biodiversity conservation is made by the International conventions and multilateral agreements, such as the Convention on Biological Diversity [6], to which Palestine Signed accession and by April 2nd, 2015, Palestine became a party, have sought.

The nature reserves mean established in Palestine early in the mid-nineteenth century, by first French and Ottoman officials, and later by the British officials set aside significant tracts of land for environmental conservation in the Arab world including Palestine. The first nature reserve in Palestine was designated under the British Mandate 1917-1948. The convention was continued under subsequent Jordanian administration of the West Bank. Additional 48 nature reserves were declared under Israeli occupation, in the West Bank with a total area of 699.39 km$^2$; forming 12.35% of the West Bank area [7]. In fact, nature areas remain one of the largest classifications of land in the Palestinian West Bank today, covering more than 50 official reserves [7]. The Palestinian Nature Reserves (PNRs) harbor a rich base with many species. Additionally, PNRs are important habitats for several species that are listed as endangered or even critically endangered, at a global level on the Red List of Endangered Species of the International Union for the Conservation of Nature (IUCN) [8]. According to the National Spatial Plan (NSP) set forth by Palestinian partner ministries, approximately 9% of the West Bank region is designated as nature reserves, forming an area of (511578 dunums) or (511.57 km$^2$). Most of these reserves are situated in the Eastern Slopes region (52.9% of the total NR area), followed by the Central Highlands (34.5%), the Jordan Valley (11.9%) and the Semi-Coastal Region (0.7%). The location of the nature reserves within the four eco-geographical regions determines the precipitation that they receive, the habitat types that dominate their location, and other environmental characteristics, (Map 1) [9].

According to the Oslo peace process accords I and II (1993/95), only nature reserves that are at least partly located within A and B areas were handed over to the Palestinian National Authority following the Peace agreements between the Palestinian and Israel. These reserves form a total of (83.762 km$^2$), equal to 16.4% of the total NRs area in the West Bank region. Siris nature reserve, in Jenin Governorate, is the most famous and of high biodiversity value NRs located in area A of the West Bank administrative divisions, of the Oslo II Accord. Deir

Ammar nature reserve, which is located in area B, near Ramallah Governorate [10].

Nature reserves that are partly situated in Area C – such as AlMughayyir nature reserve, in Jenin Governorate; Suba nature reserve, Hebron Governorate; Tammun nature reserve, Tubas Governorate, and others are also partly managed by the PNA ministries.




**Map 1:** Nature Reserves, Forest and key biodiversity areas in West Bank.

However, most of the protected areas are located within area C, where control continues to be exclusively under the authority of Israel [10]. According to the NSP, they amount to 81.8% of the nature reserves in the West Bank region, forming 418,570 dunums, with the largest being the Ein Fash'ha; Ein Jedi cluster and the Fasayil nature reserve that form 93,035 and 86,750 dunums respectively. None of the nature reserves located in area C is accessible for Palestinians, not even for management and conservation purposes. It is also worth noting that 36.2% of the designated nature reserves overlap with Israeli settlements and 39.5% overlap with closed military areas and bases. Such utilization of a nature reserve confirms that their declaration does not respond to the international definition of a nature reserve, which calls mainly for biodiversity conservation [11]. The forested areas in the West Bank and the Gaza Strip, compromise 78.3 km$^2$ and 1.76 km2 respectively [11]. Forests cover approximately 1.38% of the total area of the West Bank and 0.48% of the Gaza Strip [12]. However, designated forested area in the West Bank and the Gaza Strip forms a larger area than covered forested

areas, in which the designated forests covered 229.6 km$^2$, and 2 km$^2$ respectively [12, 13].

In Palestine, the legal framework for the environment consists of many laws that are overlapping jurisdictions with each other and associated with weak law enforcement. The only limited provisions dealing with biodiversity found in the Environmental Law No. 7 for the year 1999, includes a full chapter with five articles (40-44) on biodiversity, the protection of natural reserves and national parks, monitor and declare them, and establish and designate the national parks and supervise them [14].

The Law of agriculture No. 2 was issued in 2003, by the Ministry of Agriculture has one article in chapter 2 on Protection of Nature and Agricultural Land and Soil Conservation includes one article related to the protected areas [15].

Palestinian President issued a decree in January 2010 in which changes of forest and nature reserve lands to any uses other than nature conservation were prohibited. Biodiversity conservation and protected areas, in particular, are covered by the National Biodiversity Strategy and Action Plan. The NBSAP's first objective is the Conservation of Palestine Biodiversity, and the development and establishment of a representative protected areas system are listed as an immediate priority action [16].

For the purposes of this paper, a broad definition of 'protected area' is applied, referring to the full range of conservation land in Palestine, including all types of conservation land/ natural forests or manmade, administered by the official bodies (Ministry of Agriculture or Environmental Quality Authority), since no conservation lands managed by private sector.

The study aims at addressing the current status of nature reserves in Palestine

**Methodology**

A Combination of literature survey and multiple interviews with officials from the Palestinian Government and active NGOs were used for gathering information on nature reserves in Palestine. We designed semi-structured interviews. We interviewed 32 key informants during a field survey between September and December 2016. We interviewed at least two key informants regarding each of the main topics of nature reserves of Palestine.

**Study Area**

Palestine consists of two physically separated landmasses: the West Bank [WB] (Including East Jerusalem) and the Gaza Strip [GS]. Palestine lies within the Mediterranean climatic zone and enjoys the distinctive location as well as its special topography and history such as Great Rift Valley and birds migrations etc. It contains five biogeographical zones which associated with their climate and biodiversity (Central Highlands - Semi-Coastal Region - Eastern Slopes - Jordan Rift Valley - Gaza Strip), in addition to four phytogeographical regions (Mediterranean - Irano-Turanian - Saharo-Arabian - Sudanese/Ethiopian).

The ecosystems in the West Bank and Gaza Strip are divided into five longitudinal belts: Jordan Rift Valley, Eastern Slopes Region, Central High Lands, Semi-Coastal region, and Coastal Plain [17].

The climate of the state of Palestine is characterized by a long, hot, dry summer and short, cool, wet winters. Only the southern part of the Jordan Valley has a different transitional climate between dry steppe and the extreme desert conditions of the Dead Sea region. Using the United Nations Environmental Program Aridity Index1 [16], the eastern slopes of the West Bank can be classified as arid to hyper-arid whereas the eastern parts of the West bank can be classified as semi-arid to sub-humid. The rainy season usually starts in the middle of October and continues up until May, where most of the rain falls during the period between November and March. Snow and hail, although uncommon, occur in areas of the West Bank, with the greatest frequency falling in the west of this area, and over the highlands. In the West Bank, the average annual rainfall is 535 mm. In the Gaza Strip, the average annual rainfall is 359 [18].

The highest temperatures are in Jericho and the Jordan Valley. A temperature in the Jordan Valley increases from north to south and is inversely related to altitude, with the highest temperature in the Dead Sea. The Dead Sea is the lowest point on Earth and is surrounded by a series of high mountains from both east and west, creating a natural greenhouse climate. During summer months, June to August, the mean monthly temperatures in the West Bank range between 20.8 ºC and 30 ºC. In winter months, December to February, the mean monthly temperatures in the West Bank range between 6 ºC and 14 ºC [18].

**Results & Discussion**

**Current Status of Nature Reserves**.

Our results and findings indicated that the Israeli Authority has been declared 50 natural reserves in the West Bank area, with a total area of (699.39 km$^2$); which forming 12 % of the West Bank area. However, the Palestinian National Spatial Plan operated by the Palestinian Ministry of Local Government (MoLG) indicates that the total area of natural reserves in the West Bank is (511.58 km$^2$), forming 9%. It is also worth noting that 36.2% of the designated nature reserves overlap with Israeli settlements and 39.5% overlap with closed military areas and bases [11], Such utilization of a nature reserve confirms that their declaration does not respond to the international definition of a nature reserve, as defined by the international Union for Conservation of nature [8]. The Israeli segregation wall along the western and eastern parts of the West Bank, partially within Area C is another concern, which isolates and/or fragment approximately 68.5% of the natural reserves in the West Bank [11]. The Segregation wall poses a great threat to the biodiversity in the West Bank, due to the negative impacts on the movement of terrestrial fauna by adding further to the fragmentation of ecosystems and habitats in both Israel and the West Bank and by cutting the natural ecological corridors. The segregation wall erected on Palestinian lands by the Israeli occupation which cut off a number of nature reserves such as Um Al Riham NR. These nature reserves lack any access to management personnel to nature reserves; the same happens to those situated within the Israeli settlements in the West Bank region such as Deir Dibwan NR.

It is also worth to be mentioned that the Wye River Memorandum, land reserves amounting to approximately 3% of the West Bank area (of which Al Kanoub – Bani Naim) nature reserve is part of; forming 2% of total area of NRs in the West Bank region), were supposed to be handed over to the Palestinian Authority to be set aside as a Green Area/Nature Reserve, with the stipulation that no changes to the land (i.e. no construction) were allowed. To date, the Palestinian Authority has not been allowed to utilize this area.

Our survey results indicated that the smallest in size nature reserves has an area of (0.01 Km$^2$), and the largest has an area

of (85.59 $Km^2$).

The total forested area annexed behind the segregation wall is (420 $km^2$) forming 53.63 % of the total existing forested area in the West Bank. Three types of forests distinguished in Palestine, (Natural forest, with an area of (63.03$km^2$/ (79.1%) of the total forest, followed by manmade forests with an area of (9.64 $km^2$/ (12.1%) of the total forest, followed by Bare forests 7.01 $km^2$/ (8.8%) of the total forest, as shown in Figure (1)

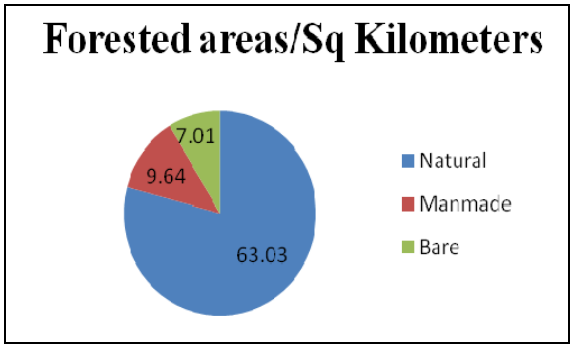



**Fig 1:** Types of forested areas

Based on our survey results, we arrived at the conclusion that the existing nature reserves were not designed as a consistent, representative or ecological network; instead, it represents a corporation of areas that were designated at various stages by various administrations ruling Palestine at various historical mandates, and for various purposes.

Neither the concept for the integration of individual PNRs into a functional ecological network [19] nor the Pan-European Ecological Network [20], vision for coherence in biodiversity conservation is reflected in the current set of PNRs. While the above-mentioned network concept has also aimed at an integration of the PNR system.

This is especially after the construction of the "separation wall" by the Israeli occupation which counteracts such efforts, by reducing ecological connectivity. Hence the current set of designated nature reserves that is under Palestinian control or not is the result of a historical development that was not planned with biodiversity conservation in mind and is hence not fully functional as a conservation tool.

## Conclusion

This study is considered as, the first of its kind, which investigated the general condition of nature reserves in Palestine, shown, that proportions of protection and effects of human activities (mainly the Israeli authority activities) on different fauna and flora species and habitat are varied. The existing national institutional framework including (the national strategies, and laws) either out of date or not covering all aspects of nature reserves and emerging issues at national level. In addition to that, the existing nature reserves were not designed as a consistent, representative or ecological network; instead, it represents a corporation of areas that were designated at various stages by various administrations ruling Palestine at various historical mandates, and for various purposes, which lead us to say that Palestinian Nature reserves should be re-established based on scientific information and effectively managed to conserve biodiversity.

## Reference

1. Saunders DL, Meeuwig JJ, Vincent ACJ. Freshwater protected areas: strategies for conservation. Conservation Biology. 2002; 16:30-41.
2. Strayer DL, Dudgeon D. Freshwater biodiversity conservation: recent progress and future challenges. Journal of the North American Benthological Society. 2010; 29:344-358.
3. Kingsford RT, Biggs HC, Pollard SR. Strategic adaptive management in freshwater protected areas and their rivers. Biological Conservation 2011; 144:1194-1203.
4. Balmford A, Fisher B, Green RE, Naidoo R, Strassburg B, Turner RK *et al*. Bringing ecosystem services into the real world: an operational framework for assessing the economic consequences of losing wild nature. Environmental and Resource Economics. 2011; 48:161-175.
5. Palomo I, Martín-López B, López-Santiago C, Montes C. Participatory scenario planning for protected areas management under the ecosystem services framework: the Doñana social-ecological system in southwestern Spain. Ecology & Society. 2011: 16(1): http://www.ecologyandsociety.org/vol16/iss1/art23/
6. Convention on Biological Diversity (CBD), Convention Text, 1992. http://www.cbd.int/convention/text (accessed 7th, December 2016).
7. The State of Palestine. Fifth national report to the convention on biological diversity, 2015.
8. International Union for Conservation of Nature (IUCN). List of endangered species web. (Accessed 7th, December 2016).
9. National Spatial Plan of State of Palestine, 2012. http://www.nsp.pna.ps/en/index.php?p=2_1. (Accessed 9th, December 2016).
10. Oslo I, II Accords. Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip, 1993-1995.
11. ARIJ. 2015a. ARIJ - Geo-Informatics Department Database. Bethlehem - Palestine.
12. ARIJ. West Bank Land Use/ Land Cover analysis 2006. Geographic Information System and Remote Sensing Department. Bethlehem – Palestine, 2007.
13. International Union for the Conservation of Nature (IUCN), The Palestinian Forest and Natural Resource Assessment, Palestine, unpublished, 2010.
14. The State of Palestine. Palestinian Environmental law Palestine. 1999, 7.
15. State of Palestine. Agricultural Law No. 2 of the year, 2003.
16. Palestinian presidential decree. Palestinian Presidential Decree no 10/January/2010.2010. Palestine
17. Applied Research Institute -Jerusalem (ARIJ). Status of the environment in the state of Palestine. 2015, 143-155.
18. Ministry of Agriculture, 2013. Final Rainfall Report 2012/2013. Ramallah - Palestine.
19. ARIJ. status of the environment in the state of Palestine, 2015.
20. Remm K, Külvik M, Mander Ü, Sepp K. Design of the Pan-European Ecological Network: a national level attempt', in Jongman, R.H.G., and Pungetti, G. (eds.) Ecological Networks and Greenways: Concept, Design, Implementation. Cambridge: Cambridge University Press, 2004; 151-170.