



JERUSALEM WILDERNESS AND DEAD SEA: CONSERVATION SIGNIFICANCE OF TWO NEWLY DESIGNATED PROTECTED AREAS IN PALESTINE

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ABSTRACT

A newly established Protected Areas Network (PAN) of Palestine marks a substantial advancement in national conservation frameworks and significantly reshapes earlier management approaches. Within this framework, two protected areas have been designated along the eastern slopes of the West Bank: the Jerusalem Wilderness Protected Area (JWPA) and the Dead Sea Protected Area (DSPA). This study examined the faunal and floral composition, habitat characteristics, and major threats in both areas, while addressing management challenges within the context of ecosystem services and the region's complex socio-political conditions. Despite geographical proximity, the two areas exhibit markedly distinct ecological assemblages. Only four rare plant species are shared between JWPA and DSPA, whereas 19 rare species occur exclusively in JWPA and 34 in DSPA. Although all bird species recorded in JWPA were also documented in DSPA, an additional 34 species, along with several mammalian taxa, were restricted to DSPA. Threats and management challenges were assessed against international conservation standards, and potential habitats for rare plant species were modelled using MaxEnt. The most critical threats identified include desertification, drought and habitat fragmentation. Based on zonation analysis, the study recommends strict protection of the natural oasis of Ain Fashkha in DSPA, a grazing management plan in JWPA, and the development of sustainable ecotourism initiatives.

Key words: Biodiversity, desertification, habitat fragmentation, ecosystem services, management plan

INTRODUCTION

Palestine¹ possesses a unique and rich biodiversity, due to its location at the crossroads of continents and its diverse topography shaped by geological history, ranging from the lowest point on Earth to high mountain ranges. These features gave rise to multiple climatic zones and a distinct assemblage of phytogeographical and zoogeographical regions, including Mediterranean, Irano-Turanian, Saharo-Arabian, Coastal, and Ethiopian-Sudanese zones (Atallah, 1977; Soto-Berelov et al., 2015; Whyte, 1950). Palestine has remarkable biodiversity, including numerous endemic and near-endemic plant and animal species. This biological richness facilitated early domestication of plants and animals approximately

12,000 years ago as part of the Fertile Crescent (Zeder, 2008), contributing to the characterisation of the Eastern Mediterranean as the “Cradle of Civilization” (Lopes & Almeida, 2017).

The Sixth National Report of the State of Palestine to the Convention on Biological Diversity identified critical gaps in biodiversity conservation that mirror global challenges in achieving sustainability objectives (EQA, 2021). The Kunming-Montreal Global Biodiversity Framework (GBF) emphasises not only the expansion of protected area coverage but also improved protection efficiency through active local engagement. In response, the State of Palestine has established a Protected Areas Network (PAN), integrated into national spatial plans (Qumsiyeh, Hussein et al., 2023). The PAN designates areas based on IUCN criteria, increasing protected land from 9 to 9.98

¹ Palestine here and throughout the text is used as a geographic name of the land situated on the Eastern Mediterranean coast between Lebanon and Sinai known as such for 3,500 years and not a political designation.

percent of Palestinian territory. Its 28 protected areas represent all major vegetation types and phytogeographical zones (Qumsiyeh, Hussein et al., 2023); however, only five currently have management plans, highlighting the need for baseline assessment, monitoring and planning for remaining sites (Qumsiyeh & Al-Sheikh, 2023; Qumsiyeh, Hussein et al., 2023). The National Biodiversity Strategy and Action Plan (NBSAP) further emphasises systematic studies and development of management plans for newly designated protected areas (EQA, 2022).

This study aims to advance biodiversity knowledge for two newly designated protected areas, including one located at the lowest land point on Earth. The selected areas – the Jerusalem Wilderness Protected Area (JWPA) and the Dead Sea Protected Area (DSPA) – were identified through a Marxan analysis optimising biodiversity conservation while accounting for socio-economic factors (Qumsiyeh et al., 2023a). Both areas are recognised as Important Bird Areas by BirdLife International (2023b, 2024), and the DSPA is designated as an Important Plant Area (Radford et al., 2011). We provide the first baseline assessment of these areas, addressing habitat characteristics, species composition, and conservation challenges. Like other protected areas, JWPA and DSPA face pressures from climate change, habitat degradation, pollution, invasive species, and overexploitation (Qumsiyeh & Abusarhan, 2021). Nevertheless, opportunities exist for conservation and restoration through management approaches that actively involve local communities (Qumsiyeh et al., 2024). This paper evaluates environmental threats and proposes management strategies informed by ecosystem services and geopolitical context.

METHODOLOGY

Study areas

The Dead Sea Protected Area (DSPA) and the Jerusalem Wilderness Protected Area (JWPA) are located along the eastern slopes of the West Bank (Figure 1; Qumsiyeh, Bassous-Ghattas et al., 2023). The DSPA (<https://www.protectedplanet.net/555757282>) encompasses an area of 235 km² and is classified under IUCN Category IV, while the JWPA (<https://www.protectedplanet.net/555757283>) covers 52.8 km² and is designated as IUCN Category Ib. The climate along the eastern slopes of the West Bank ranges from mild mountainous conditions, with annual precipitation of approximately 450 mm, to extremely arid conditions near the Dead Sea, receiving less than 50 mm of rainfall (UNEP, 2020). Portions of the DSPA overlap with Israeli military firing zones, where activities restrict civilian access and have resulted in habitat disturbance, vegetation damage, and limitations on

biodiversity monitoring and conservation management. Although the DSPA is formally designated as an IUCN Category Ib protected area, ongoing military use creates a management contradiction that affects ecosystem integrity and community interactions with the landscape.

The Dead Sea Basin, situated at approximately 430 m below sea level, is shrinking due to hydrological and climatic changes. The Lower Jordan Valley site of DSPA is characterised by extreme salinity and minimal rainfall, with most flora and fauna concentrated in oasis-like habitats such as Ain Fashkha and Ain Gedi. The basin has functioned as a sediment trap since tectonic subsidence in the Miocene, preserving thick sedimentary sequences. Intense solar radiation, low precipitation and high evaporation – amplified by its position east of the Palestinian mountain range – shape its conditions. Dominant soils in the Jordan Valley include bare rock, Desert Lithosols, Brown Lithosols and Loessial Serozems, which are prone to erosion due to the land structure. The region's geological history and biogeographical links to Africa and Asia have contributed to richness in flora and fauna, including several endemic species (Qumsiyeh & Amr, 2025).

The geological and topographic diversity of the valleys provides a wide range of habitats and elevations, resulting in the representation of three major biogeographic zones within the two protected areas: the Irano-Turanian, Saharo-Sindian and Ethiopian zones. According to the IUCN Global Ecosystem Typology, the ecosystems in both areas are classified as semi-desert steppes, characterised by “suffrutescent (i.e., woody-based) or sub-succulent (semi-fleshy) perennial shrubs and tussock grasses” (Keith et al., 2020, p. 62).

The protected areas contain numerous historical and archaeological sites, including monasteries, shrines, and Byzantine and Roman settlements. Notable sites include the 5th-century Saint Saba Monastery (Mar Saba) (Photo 1), founded in 484 AD and hosting annual pilgrimages (Al-Natsheh, 2024). These sites have coexisted with local communities and nature for centuries (Hay, 1996; Norris, 1950) and can support eco-friendly tourism initiatives (ARIJ, 2010; VanderKam & Flint, 2005).

Gathering data on biodiversity and habitats and discussion with locals

Biodiversity assessments were based on a combined literature review and forty field surveys that were conducted between 2014 and 2024. Thirty field trips preceded the areas' protected designation within the National Protected Areas Network (PAN) (Qumsiyeh et al., 2023a). Published sources included peer-reviewed

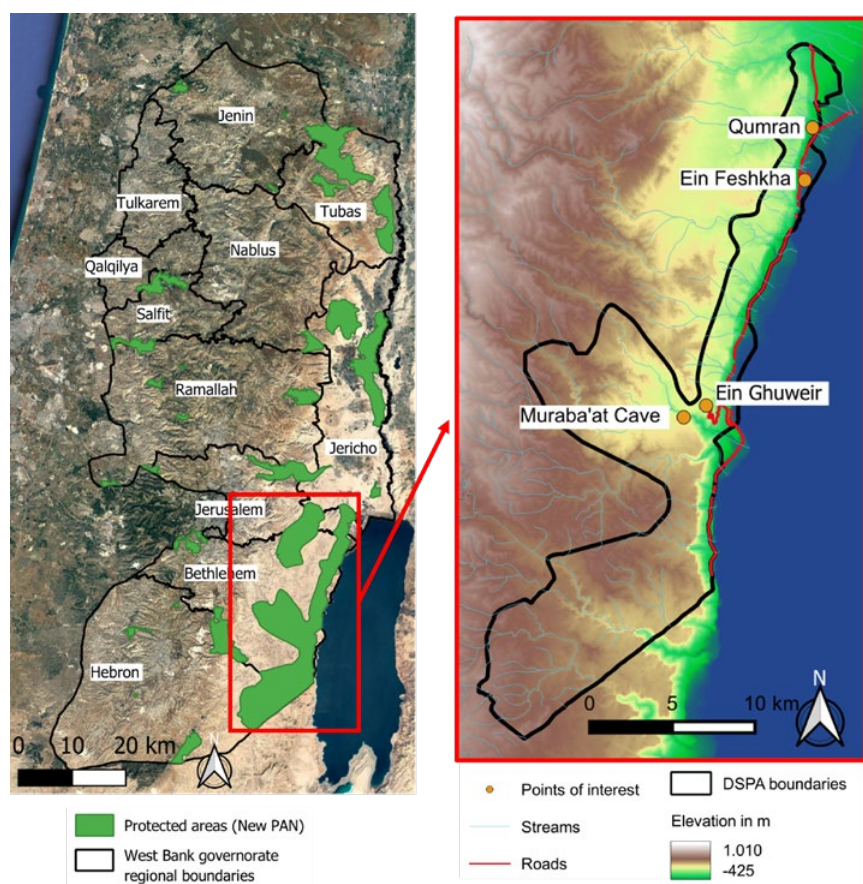


Figure 1. Left: Boundaries of the protected areas according to the new Protected Areas Network in the West Bank. The Dead Sea Protected Area (DSPA) is the one at the bottom and right and the Jerusalem Wilderness Protected Area (JWPA) is to its left. The names of the governorates are written on a white background; right: Study area (DSPA and JWPA) with Digital Elevation Model (white and brown show high altitudes whereas blue and green show low altitudes), main points of interest for tourism (orange), streams (blue), and road network (red). The borders of the protected areas are outlined in black.

literature, governmental and international reports, and biodiversity databases (e.g. BioGIS, iNaturalist). All biodiversity records were collected as presence-only data. Quantitative abundance measures (e.g. density or cover) were not systematically recorded across the study area. Instead, plant species were assigned to relative abundance and rarity categories: rare (11–30 sites), very rare (4–10 sites), extremely rare (1–3 sites) (Al-Sheikh, 2019; Al-Sheikh & Qumsiyeh, 2021). Vertebrate data were collected through field observations, small mammal trapping (Sherman traps, seven trapping nights – three in DSPA and four in JWPA with 40 traps each), camera trapping (3 cameras over 12 nights), and echolocation recordings for bats (ten recording nights, June–August 2023). Birds were surveyed during breeding (February to June) and migration seasons (peaks March/April and September/October), and reptiles through active searches for tracks and individuals. Species data were systematically recorded following IUCN criteria (<https://www.iucnredlist.org/en>). Invertebrates were sampled using standard zoological techniques: butterflies with nets, moths via light traps, arthropods from substrates and plants, and scorpions, spiders and molluscs from under rocks and crevices. Specimens were identified and preserved using taxonomic standards, with selected samples deposited at the Palestine Museum of Natural History (PMNH) and voucher specimens maintained in the herbarium.

Field data were collected at discrete survey sites, defined as locations visited during field campaigns. These survey sites served as the primary units for data collection and documentation of species presence. Environmental, social and economic factors and threats to the DSPA were analysed through literature and field assessments (April–May 2023). Data were interpreted using the Open Standards for the Practice of Conservation (Conservation Measures Partnership, 2025), identifying conservation and human well-being targets, threats, and ecosystem services. For conservation targets, one representative plant from each phytogeographic region in the DSPA was selected based on conservation status and regional abundance (Al-Sheikh & Qumsiyeh, 2021). Threats were ranked using the WWF Absolute System (WWF, 2007) by scope, severity, and irreversibility. Plant species distribution modelling was performed using MaxEnt (Phillips et al., 2006) for 55 rare species (*sensu* Al-Sheikh, 2019) recorded during 2023 surveys and PAN data. Environmental grids for the West Bank were obtained from <https://www.worldclim.org/>, <https://unbiodiversitylab.org/en/> and <https://geomolg.ps/>, and harmonised using R and QGIS (https://docs.qgis.org/3.44/en/docs/training_manual/processing/r_intro.html). MaxEnt models (logistic output, 10 replicates) incorporated a gridded bias file to correct for sampling effort (cf. Kramer-Schadt et al., 2013). Habitat suitability

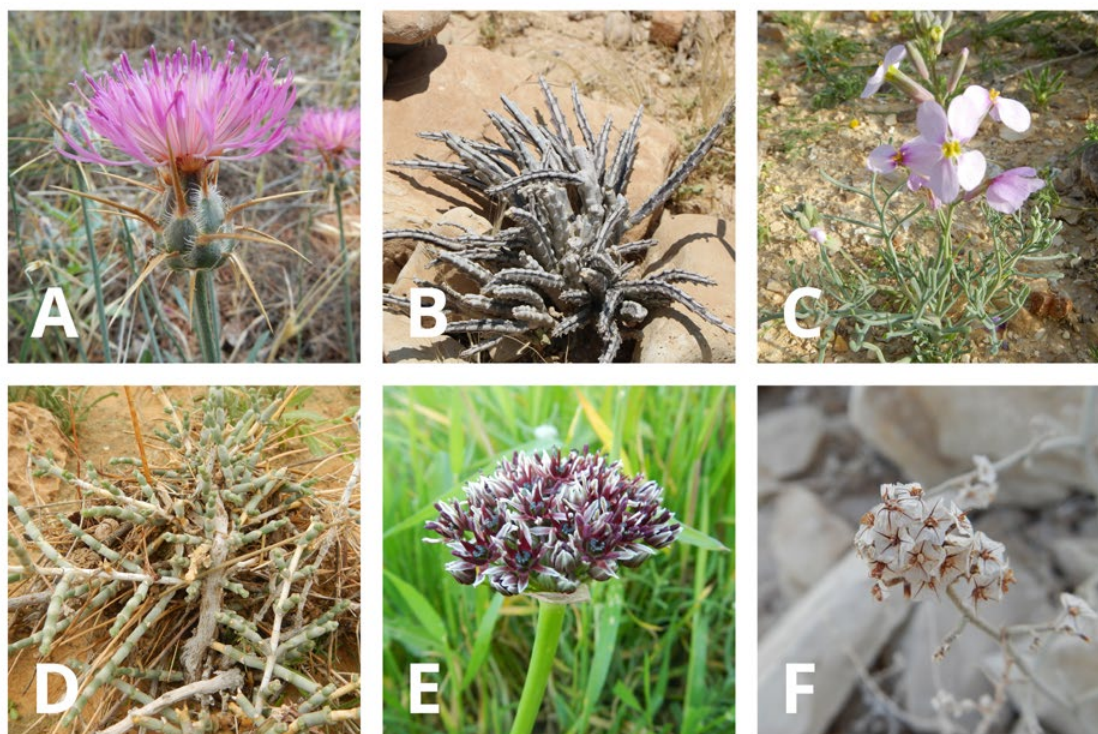


Figure 2. Notable plants: A: Eryngio Star Thistle (*Centaurea eryngioides* Lam); B: Dead-sea Caralluma (*Caralluma sinaica* (Decne) A.Berger); C: *Pseuderucaria clavata* (Boiss. & Reut.) O.E.Schulz; D: *Anabasis oropediorum* Maire; E: Roth's Garlic (*Allium rothii* Zucc); F: Frosty Sea-lavender (*Limonium pruinosum* (L.) Chaz). Photos by B. Al-Sheikh.

maps were generated and aggregated to highlight areas of special conservation interest (Babich Morrow, 2019).

Finally, we also engaged the local communities near those two areas. This included primarily the town of Ubaidiya and the Bedouin communities of Jahhalin around the Dead Sea area. Semi-structured interviews with groups of 5–10 locals were held over a period of four years (minimum 15 meetings). We especially asked about their relationship with nature and threats they see to their livelihood (mostly pastoralism) and to nature.

RESULTS

Across the two protected areas – the JWPA and DSPA – a total of 241 plant species were recorded (Table 1.2 Supplementary Online Material). Of these, 26 species occur in both areas, 137 species are unique to JWPA, and 130 species are unique to DSPA. Nine invasive species were documented, with only one shared between the two sites. Five species are endemic or near-endemic: four occur exclusively in JWPA and one in DSPA, with no overlap. Sixteen species are classified as extremely rare (O-status, 1–3 sites only). Fifteen occur in DSPA (including one sub-endemic), while only one is recorded in JWPA, with no O-status species shared. Twenty-three species are classified as very rare (RR). Three occur in JWPA (one endemic), whereas twenty occur in DSPA (one endemic), with no overlap. Twenty-two species are

classified as rare (R). Six occur in JWPA (including one endemic) and sixteen in DSPA, with no overlap. The lack of overlap among endemic, rare, very rare and O-status species underscores the complementary conservation value of both protected areas.

Among the notable species are the locally endangered and very rare Leafless Bean Tree (*Moringa peregrina* (Forssk.) Fiori) and the rare Umbrella Thorn Acacia (*Acacia tortilis* (Forssk.) Hayne), both xerophytic species. Other significant plants include the locally endangered and very rare Hoary Abutilon (*Abutilon hirtum* (Lam.) Sweet) and the Irano-Turanian *Anabasis oropediorum* Maire (Figure 2D), restricted to semi-arid shrub-steppes, and Desert Savory (*Satureja thymbriifolia* Hedge & Feinbrun) (Figure 3B), an endemic and very rare species belonging to the Irano-Turanian–Saharo-Arabian chorotype. In addition, Samwa (*Cleome droserifolia* (Forssk.) Delile) and Hogweed (*Commicarpus helenae* (J.A.Schult.) Meikle) are very rare species restricted to the Sudanian chorotype. Notably, only one of the 55 rare species recorded was found in both the DSPA and JWPA (Table 1.1 Supplementary Online Material), underscoring the conservation importance of both areas.

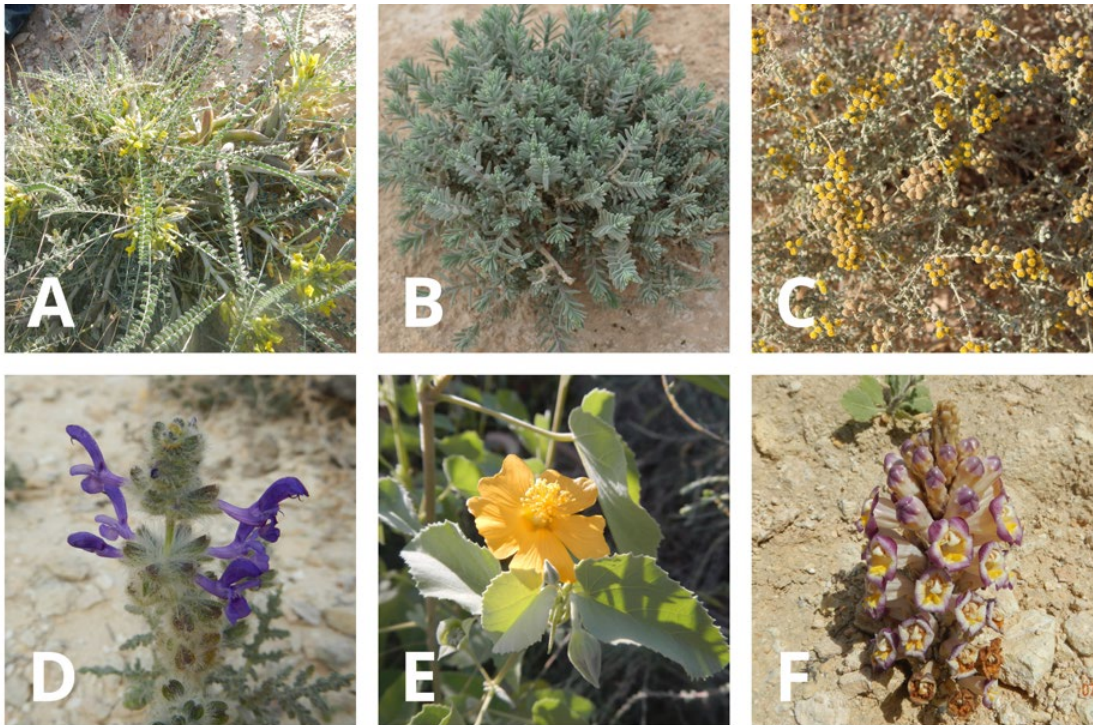


Figure 3. Other notable plants. A: Dagger's Milk-vetch (*Astragalus dactylocarpus* Boiss); B: Desert Savory (*Satureja thymbrifolia* Hedge & Feinbrun); C: Fragrant Lavender Cotton (*Achillea fragrantissima* (Forssk) Sch.Bip.); D: Wrinkle-leaved Sage (*Salvia lanigera* Poir); E: Texas Indian Mallow (*Abutilon fruticosum* Guill. & Perr.); F: *Cistanche salsa* (C.A.Mey) G.Beck. Photos by B. Al-Sheikh.

Among the rare plant species, 49 yielded an area under the receiver–operator curve (AUC; Bland et al., 2015) value above 0.7 in the species distribution models. Figure 4 displays the number of rare and invasive species per grid cell, assuming that “the 10% of occurrence records in the least suitable habitat aren't occurring in regions representative of the species' overall habitat” (Babich Morrow, 2019). The majority of rare species occur in the eastern part of the DSPA bordering the Dead Sea, with up to ten species per grid cell. Invasive species per grid cell range from 0 to 4 in the DSPA, without a clear spatial concentration. Missing data along the western border of the DSPA result from the coarse resolution of the environmental layers. Habitat and soil type were the main contributing variables to rare species distribution (Sayre et al., 2020). Nine invasive plant species were recorded: Golden Wreath Wattle (*Acacia saligna* (Labill.) Wendl.f.), Purple Amaranth (*Amaranthus blitum* L), Careless Weed (*Amaranthus palmeri* S.Watson), Pop Slatbush (*Atriplex holocarpa* F.Muell.), Downy Thorn-apple (*Datura innoxia* Mill.), Matted Sandmat (*Euphorbia serpens* Kunth), Malabar Sprangletop (*Leptochloa fusca* (L.) Kunth), Tree Tobacco (*Nicotiana glauca* Graham) and Castor-oil Plant (*Ricinus communis* L.).

Fauna

We recorded 37 mammalian species and 166 bird species across the two areas (Tables 3–4, Supplementary Online Material). Of the 166 bird species, 132 occur in both protected areas, while 34 were recorded in the DSPA but not in the JWPA; no species were documented exclusively in the JWPA. One species present in both areas is globally Endangered (EN): the Egyptian Vulture (*Neophron percnopterus*). Although classified as Least Concern (LC) globally by the IUCN, several birds are rare and endangered locally (See this https://redlist.parks.org.il/en/aves/aves_report/ and we have unpublished data based on declining populations and distributions using IUCN criteria for local and regional listing; Bubb et al., 2009): Trumpeter Finch (*Bucanetes githagineus*), Sinai Rosefinch (*Carpodacus synoicus*), Striolated Bunting (*Emberiza striolata*), Peregrine Falcon (*Falco peregrinus*), Eurasian Scops Owl (*Otus scops*) and Desert Finch (*Rhodopechys obsoletus*). The Pallid Scops Owl (*Otus brucei*) is endangered regionally, and Syrian Serin (*Serinus syriacus*) is globally Vulnerable (VU) but endangered locally. Three species present in both areas are regionally Near Threatened (NT) – Golden Eagle (*Aquila chrysaetos*, LC globally), Steppe Eagle (*Aquila nipalensis*, globally EN), and Eurasian Griffon Vulture (*Gyps fulvus*, LC globally) (Figure 5B). A total of 120 species in both areas are Least Concern, while 34 species have unknown local status.

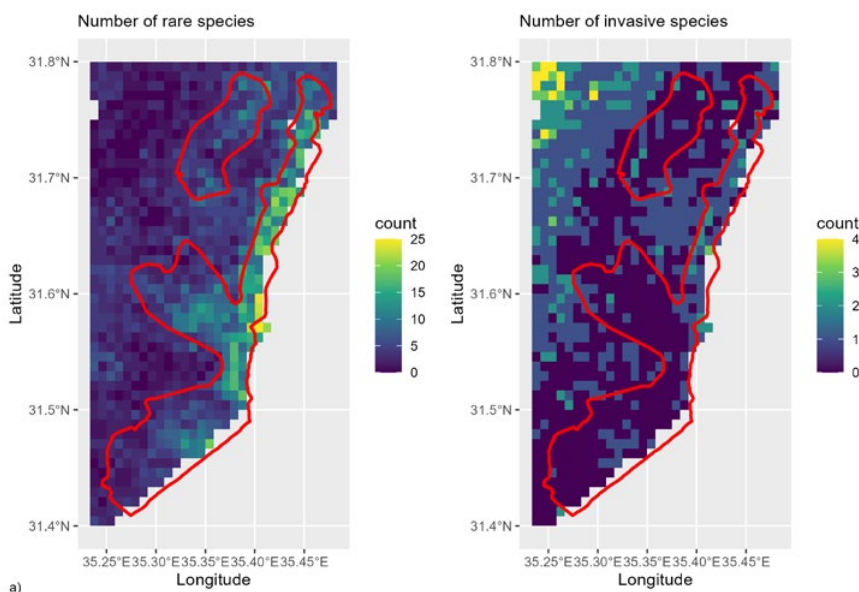


Figure 4. Distribution of MaxEnt-modelled (a) rare species and (b) invasive plant species per grid cell in the Dead Sea Protected Area (DSPA) and Jerusalem Wilderness Protected Area (JWPA). Higher species numbers are shown in yellow shades, while lower numbers appear in dark blue. The boundaries of the DSPA (right) and JWPA (top-left) are delineated in red.

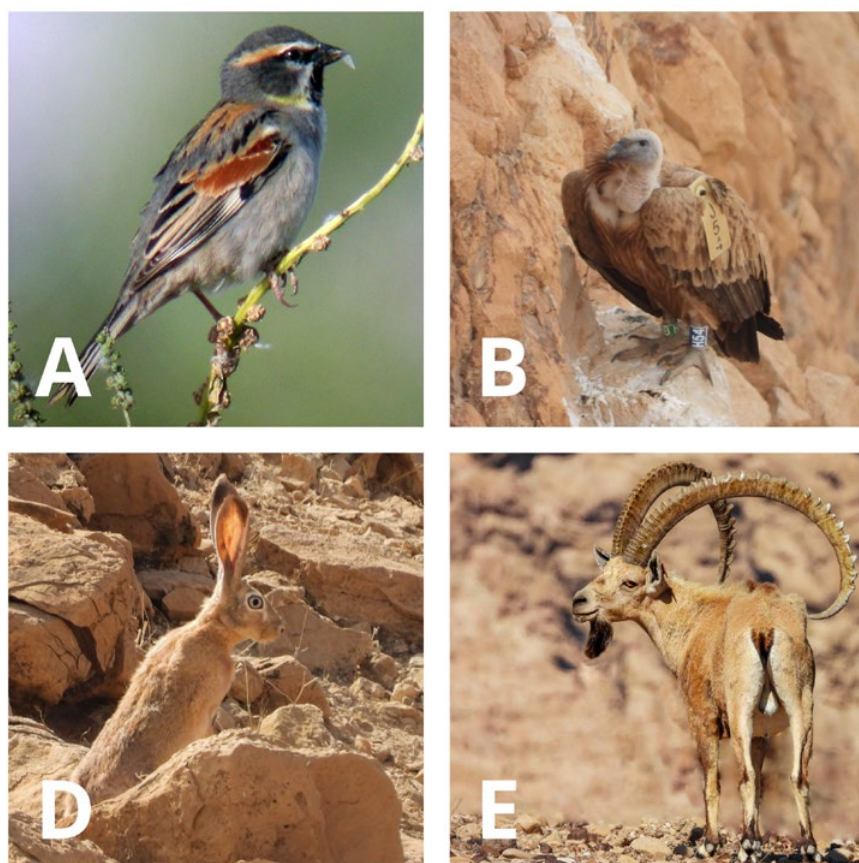


Figure 5. Selected animals: (A) Dead Sea Sparrow (*Passer moabiticus*) (photo by Saed Shomali), (B) Eurasian griffon vulture (*Gyps fulvus*) (photo by Saed Shomali), (C) Desert cottontail (*Sylvilagus audubonii*) (photo by Waseem Dawwas), (D) Nubian ibex (*Capra nubiana*) (photo by Waseem Dawwas).

The type locality of Tristram's Starling (*Onychognathus tristramii*) lies within the JWPA (near Mar Saba Monastery). Species requiring particular conservation attention include the Greater Spotted Eagle (*Clanga clanga*, VU globally), Eurasian Griffon Vulture (*Gyps fulvus*, LC globally but threatened locally), Steppe Eagle (*Aquila nipalensis*, globally EN) and Syrian Serin (*Serinus syriacus*, globally VU).

Among mammals, all species larger than the rock hyrax (*Procapra capensis*) and all bats can be considered locally threatened in both areas (Mendelssohn & Yom-Tov, 1999; Qumsiyeh, 1996). Of particular concern are the Nubian ibex (*Capra nubiana*) (Figure 5D) and the Afghan fox (*Vulpes cana*). Gazelles (*Gazella gazella*) were previously recorded but have not been observed during the past 20 years; with appropriate grazing management and ecosystem restoration, reintroduction may be possible.



Convent of Mar Saba © PIBS, Bethlehem University

A total of 31 species of reptiles were noted in the targeted areas but 19 of them occur in one protected area but not the other (Table 2, Supplementary Online Material).

A rich assemblage of invertebrates was noted. We worked more intensively for this survey on two classes, butterflies and land snails (Tables 5–6, Supplementary Online Material). *Buliminus alepensis* and *Buliminus lamprostatus* are distinctive endemic land snails of the Dead Sea region and eastern slopes (Amr et al., 2018; our data).

Threats and challenges

JWPA and DSPA, like many protected areas in Palestine, face significant threats, including climate change, habitat loss, overexploitation of resources, pollution, invasive species and occupation-related pressures (Qumsiyeh & Abusarhan, 2021). Desertification, including climate change, was identified as the primary threat to fauna and flora. Some threats were site-specific, such as overgrazing recorded only in JWPA and the decline in the Dead Sea level altering habitats, for example for birds (Haran et al., 2023), including by creating sinkholes (Popperl, 2018).

Invasive plants represent the second largest threat to native biodiversity after habitat destruction (Pyšek et al., 2020). Nine invasive plant species were documented. Lacking natural enemies, these species reduce availability of habitats for and crowd out native species, with *Datura innoxia* having the most pronounced impact (Powell et al., 2011).

Untreated sewage from East Jerusalem neighbourhoods and Palestinian communities flows into Wadi Nar, worsening wastewater management issues. Central collection in East Jerusalem remains partial, with about 40 per cent of Palestinian household wastewater stored in cesspits and septic tanks (ARIJ, 2016; Isaac & Hosh, 1997). Technical failures cause wastewater losses that, along with runoff, drain into Wadi Nar, affecting urban and rural areas, including JWPA. Some wastewater is partially treated near JWPA and used for settler plantations in the Jericho area.

Large portions of the study areas have been designated closed military zones or ‘nature reserves’, often excluding only Palestinians without ecological justification (Allombert & Qumsiyeh, 2024; Brophy & Isaac, 2009). Exclusion structures such as fences and walls impose major environmental and humanitarian impacts (Braverman, 2023; Husein & Qumsiyeh, 2022).

The Dead Sea, a hypersaline inland lake, supports only extremophile taxa such as Archaea, Bacteria and fungi (Georges et al., 2021; Perl et al., 2017). However, its surface area declined by 11.27 per cent between 1985 and 2019 (Al-Mashagbah et al., 2021), driven by Jordan River water extraction, high evaporation rates, and over-pumping of brine for mineral extraction in Palestine, Jordan and Israel. Sinkholes along its shores increased due to deterioration of the freshwater–saltwater interface in recent decades (Arkin & Gilat, 2000; Popperl, 2018).

DISCUSSION

The results demonstrate that JWPA and DSPA harbour diverse fauna and flora, with many species unique to each area, thereby justifying their designation as separate protected areas along the Eastern Slopes of Palestine. For example, a majority of rare plants are unique to each site, with 54 of the 55 locally rare species recorded in only one area (Table 1.1 in Supplementary Online Material).

MaxEnt species-distribution models show a concentration of rare species near the Dead Sea, explained by the distinct valley habitats and the presence of springs such as Ain Fashkha compared to the eastern slopes. Model performance could be improved by removing low-contribution predictors (Low et al., 2021), using finer-resolution spatial layers – especially along the western DSPA border – and reducing highly correlated climate variables, except temperature seasonality and precipitation of the warmest quarter.

Key threats to both protected areas (Qumsiyeh et al., 2014; Qumsiyeh & Abusarhan, 2021) include overgrazing; illegal hunting and wildlife poisoning; pollution – especially sewage inflow through Wadi Nar; settlement expansion; invasive species; habitat fragmentation (notably fencing around Ain Fashkha); and desertification and climate change effects. There is also a risk of expanding the segregation wall being built throughout the Israeli occupied West Bank to the two protected areas which would have a direct and negative impact on biodiversity (Husein & Qumsiyeh, 2022).

Conservation of both the JWPA and DSPA is essential to safeguard biodiversity and unique ecosystems. As demonstrated in this study, many species are not shared between the two areas; for example, only 11 per cent of plant species occur in both. Mammalian assemblages are only found in DSPA, whereas iconic bird species overlap more substantially, with both areas supporting endangered raptors. To address the threats identified, discussions with local communities and stakeholders highlight the following priorities:

Habitat conservation and restoration: We recommend merging the JWPA and DSPA into a single, larger protected area, as the JWPA's habitat closely resembles parts of the DSPA and the two sites are geographically adjacent. Exploring listing areas on both the eastern and western sides of the Dead Sea as IUCN Red List Ecosystems, recognising the region's uniqueness; this will require cross-border collaboration. Targeting degraded areas affected by overgrazing and illegal land use through reforestation and protection of critical ecological zones;

Species protection: Strengthening anti-poaching measures, mitigating human–wildlife conflict, revoking military firing zones, and safeguarding important habitats, including breeding sites for migratory birds. Due to the shrinking Dead Sea that is now creating many sink holes on its coastal areas, we need to develop species management strategies especially along the Dead Sea shoreline highway while also promoting ecotourism;

Community engagement: Working with Bedouin and local residents through eco-tourism initiatives, sustainable agricultural and pastoral practices, and youth-focused environmental education;

Sustainable land management in a biocultural landscape: Promoting eco-friendly farming, regulating livestock grazing, and enforcing legal mechanisms against unauthorised land use, drawing on successful examples from other newly established PAs (Qumsiyeh, Bassous-Ghattas et al., 2023; Qumsiyeh et al. 2024);

Local management rights: Both areas lie in one of the three administrative divisions of the West Bank established under the 1995 Oslo II Interim Agreement (Area C; Anziska, 2018). Area C comprises approximately 60 per cent of the West Bank and remains under Israeli civil and military control, including authority over land use, planning, security, and natural resource management. Area C contains most of the West Bank's open landscapes, agricultural land, water resources, and areas of high ecological and biodiversity value. For Palestinians, managing their own nature reserves in Area C would require the transfer of legal and administrative authority over land and environmental governance. This would enable Palestinian institutions to designate and manage protected areas, implement sustainable land-use practices, conduct scientific research, and conserve native biodiversity in line with national legislation and international standards.

Wetlands such as Ain Fashkha are critical conservation targets (Grenfell et al., 2022). Although they provide major ecosystem services in drylands, they are also highly vulnerable to climate change, agricultural pressures, hydrological alterations, and occupation-related restrictions. Ain Fashkha, managed by the Israel Nature and Parks Authority (INPA), includes fenced zones that restrict wildlife movement and Palestinian access – reflecting a broader pattern in which springs are designated as reserves while excluding the Indigenous population (Braverman, 2023).

Bedouin communities in JWPA – and to a lesser extent DSPA – face marginalisation and restricted access to traditional resources (B'Tselem, 2011; UNDP, 2013). In

DSPA, the remaining population consists exclusively of settlers, despite the prohibition of settlement construction under Article 49 of the Fourth Geneva Convention (Hareuveni, 2011). This contradicts international conservation norms, which advocate management by or with Indigenous Peoples (Phillips, 2000).

Both protected areas have high ecotourism potential. Palestine is among the world's less visited regions (UNWTO, 2020), yet JWPA and DSPA offer exceptional wilderness scenery, springs, canyons, valleys, rock formations, caves, and views overlooking the lowest point on Earth (Santarém et al., 2020; Teff-Seker & Orenstein, 2019). The Egyptian vulture serves as a powerful conservation target due to its cultural symbolism of freedom of movement (BirdLife International, 2023a). Additional management options include enhancing Nubian ibex (*Capra nubiana*) populations and exploring reintroduction of the recently extirpated leopard. Plant conservation should take into account local foraging traditions instead of blanket restrictions on wild plant foraging (Braverman, 2023). Despite these pressures, threat ratings for plant species were generally low to medium.

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RÉSUMÉ

La mise en place récente d'un réseau d'aires protégées (PAN) en Palestine marque une avancée considérable dans les cadres nationaux de conservation et redéfinit de manière significative les approches de gestion antérieures. Dans ce cadre, deux zones protégées ont été désignées le long des versants orientaux de la Cisjordanie : la zone protégée de la nature sauvage de Jérusalem (JWPA) et la zone protégée de la mer Morte (DSPA). Cette étude a examiné la composition de la faune et de la flore, les caractéristiques des habitats et les principales menaces dans ces deux zones, tout en abordant les défis de gestion dans le contexte des services écosystémiques et des conditions sociopolitiques complexes de la région. Malgré leur proximité géographique, les deux zones présentent des assemblages écologiques nettement distincts. Seules quatre espèces végétales rares sont communes à la JWPA et à la DSPA, tandis que 19 espèces rares sont présentes exclusivement dans la JWPA et 34 dans la DSPA. Bien que toutes les espèces d'oiseaux recensées dans la JWPA aient également été observées dans la DSPA, 34 espèces supplémentaires, ainsi que plusieurs taxons de mammifères, étaient propres à la DSPA. Les menaces et les défis de gestion ont été évalués au regard des normes internationales de conservation, et les habitats potentiels des espèces végétales rares ont été modélisés à l'aide de MaxEnt. Parmi les menaces les plus critiques identifiées figurent la désertification, la sécheresse et la fragmentation des habitats. Sur la base d'une analyse de zonage, l'étude recommande une protection stricte de l'oasis naturelle d'Ain Fashkha dans la DSPA, un plan de gestion des pâturages dans la JWPA et le développement d'initiatives d'écotourisme durable.

RESUMEN

La recién creada Red de Áreas Protegidas (PAN) de Palestina supone un avance sustancial en los marcos nacionales de conservación y reconfigura de manera significativa los enfoques de gestión anteriores. En este marco, se han designado dos áreas protegidas a lo largo de las laderas orientales de Cisjordania: el Área Protegida de la Naturaleza Salvaje de Jerusalén (JWPA) y el Área Protegida del Mar Muerto (DSPA). Este estudio ha examinado la composición de la fauna y la flora, las características de los hábitats y las principales amenazas en ambas áreas, al tiempo que ha abordado los retos de gestión en el contexto de los servicios ecosistémicos y las complejas condiciones sociopolíticas de la región. A pesar de su proximidad geográfica, las dos áreas presentan comunidades ecológicas marcadamente distintas. Solo cuatro especies vegetales raras son comunes a la JWPA y la DSPA, mientras que 19 especies raras se dan exclusivamente en la JWPA y 34 en la DSPA. Aunque todas las especies de aves registradas en la JWPA también se documentaron en la DSPA, otras 34 especies, junto con varios taxones de mamíferos, se limitaban a la DSPA. Las amenazas y los retos de gestión se evaluaron con arreglo a las normas internacionales de conservación, y se modelizaron los hábitats potenciales para las especies vegetales raras utilizando MaxEnt. Entre las amenazas más graves identificadas figuran la desertificación, la sequía y la fragmentación del hábitat. Basándose en el análisis de zonificación, el estudio recomienda la protección estricta del oasis natural de Ain Fashkha en la DSPA, un plan de gestión del pastoreo en la JWPA y el desarrollo de iniciativas de ecoturismo sostenible.