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Mother Drone, Mother Nature: The Griffon Vulture and Israel's Military

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MOTHER DRONE, MOTHER NATURE: THE GRIFFON VULTURE AND ISRAEL'S MILITARY

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Fig. 1. Israeli soldiers exercise in a desert. © Pavel Bernshtam on Adobe Stock. All rights reserved.

In July 2020, Israeli television reported on an endangered griffon vulture (*Gyps fulvus*) chick who had lost his mother to electricity wires. As would soon become clear, the chick's father was unable to provide enough food to ensure his son's survival. The Israeli army, referred to by most Israelis as the Israel Defense Forces (IDF for short, or *Tsahal* in Hebrew), readily stepped in, using a state-of-the-art drone technology to drop daily offerings of rat food for the chick by deftly managing the intense cliffs. "Mother drone," as the army referred to this technology, was blurred in the video that documented the operation. It had to be, the reporter explained, because it "belongs to the Israeli army and is classified as top secret." Standing with his back to the camera, the military general in command told the reporter about the countless hours spent practicing the delivery on a mock-up of the ledge and nest before the military started food drops for real. The report ended with the following statement: "The collaboration between a tech company, the military, and conservationists got the ultimate endorsement this week when the chick flew for the first time. Job [well] done!" (Figure 2).[1]

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Fig. 2. After his mother died by electrocution, an endangered vulture chick is fed by "Mother drone," an advanced technology operated by the Israeli army.

This three-minute news item encapsulates the three-way dance between conservation, digital technology, and the Israeli army. The blurred classified drone, the obscured military general, and the three men—from high tech, conservation, and the military—congratulating themselves on their mothering skills, all occurred at one of the most visited national parks in Palestine-Israel, Ein Avdat in the southern Naqab-Negev desert, and was broadcasted live to the Israeli public via a 24/7 camera installation. This was not the first, nor would it be the last, collaboration between Israeli conservationists and the army.

Relative to its size, Israel has the most extensive military control of land in the world.[2] Specifically, the Israeli army administers 50 percent of the country's state lands, which encompass 93 percent of the entire area "inside" the Green Line—the internationally recognized 1948 borders of Israel. Israel's military activities directly destroy ecosystems in the following ways: the army produces waste and pollutants—fuel, oils, hazardous materials, radiation, and noise; army tanks and all-terrain vehicles routinely trample over massive areas, including in nature reserves and national parks; many army bases are not connected to sewage treatment plants; military units will often cause wildfires during combat operations; and abandoned bases turn into refuse dumps.[3] It is not too surprising, therefore, that the State Comptroller's 2019 Annual Report found that the Israeli army has had a harmful effect on the environment inside the Green Line. Its impact is even more pronounced beyond the Green Line in the occupied West Bank, which has been under Israeli military control since 1967. There, the large network of closed military zones is maintained and supported by an extensive infrastructure of roads, watchtowers, checkpoints, and security fences.[4]

As the single largest polluter in the country,[5] the Israeli army is easily the number one enemy of the environment in Palestine-Israel. But closed military zones simultaneously protect habitats and ecosystems from human development. Such positive impacts of militarism on environmental protection have been acknowledged in the broader literature and are often referred to as "green militarism." While earlier studies in this field documented the ecological devastation wrought by military activities, especially in conflict zones and border areas,[6] recent studies reveal a more complicated relationship between nature and the military. Several scholars have explored, specifically, how the creation of military buffer regions, training areas, and demilitarized zones led

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to the protection of biodiversity by excluding other environmentally destructive activities such as commercial development.[7] Within this scholarship, military zones that were transformed into wildlife protection areas have received special attention.[8]

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Some of the insights of this literature are highly relevant in the context of Palestine-Israel as well, although militarism and wildlife usually work here in tandem rather than in succession. Indeed, in addition to its control over vast tracts of open spaces, the Israeli army is increasingly committed to actively cleaning, restoring, monitoring, and protecting wildlife and habitat. In 2014, a partnership was forged between Israel's military and the country's central nature protection organizations, advancing dozens of mini-projects executed by specific army units to save select species and habitats. This partnership, referred to as the Nature Defense Forces (a play on the army's official name, the Israel Defense Forces), demonstrates the intensifying connection between Israeli militarism and the country's wildlife protection.

The question nonetheless remains: why would the Israeli army, which has major security concerns to contend with, be involved in nature protection to the minute details of caring for a single endangered vulture chick? The most obvious explanation is that this is a form of "greenwashing": an endorsement of environmental values as a cover for promoting other, usually harmful, impacts.[9] The drone, a military technology designed to kill human enemies, is rebranded in this instance as a civil technology for saving endangered nonhuman chicks, thereby legitimizing its more sinister uses. Israel's emerging identity as a start-up nation—with its heavy reliance on advanced technologies, including for resource management and conservation—is often credited to the Israeli military's role as an incubator for such projects. The army is thus both an initiator of, and a client for, high-tech innovations. Either way, saving an endangered motherless chick is the best PR the Israeli army could hope for.

But while greenwashing is certainly a powerful explanation for the involvement of the Israeli military, as well as many other armies, in conservation, the military–nature nexus also runs much deeper than that: arguably, military and nature are coproduced and even symbiotic in their relationship. In Palestine-Israel, this coproduction proceeds in myriad ways: the practice of hiking and thereby knowing the land is popular among Jewish Israeli citizens of all ages who are simultaneously active or potential soldiers or veterans; intimate historical, cultural, and organizational ties exist between the Israeli army and the Israel Nature and Parks Authority; and, finally, ideas of connecting to and saving nature are promoted as an important part of the soldiers' personal and national identities.

. . .

The vulture is an impressively large raptor with a wingspan that can reach 10 feet. Her charismatic presence in the landscape makes the vulture "a good animal to think with" about settler colonialism and militarism, and about how both manifest in Palestine-Israel. Alongside the Persian fallow deer, the Asiatic wild ass, and the Arabian oryx, the griffon vulture is a biblical species chosen by Israeli conservationists for heightened management. The increased presence in the natural landscape of species that are identified with the Bible advances the mission of making the landscape holy again, supporting the idea that the real Indigenous people of this land are the Jews. This land was promised by God to them, it is implied, and not to the Palestinians.[10]

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The temporal leap from biblical to modern times has, however, sown confusion regarding the identity of the biblical bird. The word *nesher* appears 27 times in the Bible, where it clearly stands for vulture, according to experts. But the first translators of the Bible from Hebrew and Aramaic to Greek got it wrong and wrote *a'etos*, which is the Greek word for eagle. This mistranslation persisted well into the twentieth century. Reverend Henry Tristram, a British missionary and ornithologist who traveled to the region in the 1860s, suggested to put an end to this misnomer, asserting that the biblical *nesher* was not an eagle but a vulture. Tristram's stance was adopted by Israel Aharoni, a highly influential zoologist who worked in Palestine in the early twentieth century. Linguists opposed it, however, insisting on the already popular translation of *nesher* as eagle.

A rivalry between Israel's zoologists and its linguists thus ensued. In 1964, the Academy of the Hebrew Language was already split on this issue, and so the *Birds in Israel* dictionary was published without mentioning this bird, despite its centrality in the region. In 1973, tensions flared up again, and the Israel Zoological Society threatened to appeal to the Supreme Court. After a heated debate, the academy finally ruled, by a majority of one vote, in favor of *nesher* as a vulture.[11] Although this marked the end of the legal battle, the controversy continues: nearly 50 years after the ruling, the lay public (including myself, although I didn't dare admit it to my interlocutors) still confuses the two birds, to the dismay of the Israeli bird experts.

The debate over the naming of biblical and other species reflects the importance of flora and fauna in the production of rival identities, which are central for the broader ecological warfare that takes place here. It also highlights that, despite the strong secular identity of nature experts in Palestine-Israel, the Bible is nonetheless an important source and justification for nature protection, simultaneously legitimizing the Zionist connection to this particular territory.

. . .

During the 1980s, the number of vultures in the region shrunk by 95 percent: from thousands to only 70 breeding pairs. This dramatic decline was mainly caused by inadvertent electrocution, poisoning, and habitat loss. While vultures have a bad reputation amid lay persons for eating decaying carrion and bringing bad luck,[12] conservationists have long pointed to their ecological significance. And so, in the 1990s, Israel embarked on a complex captive breeding program for the vultures. The idea was to coax them into producing more eggs in the wild and then to rear the hatched chicks in captivity (Figure 3, left). Concerned about imprinting the birds in ways that would limit their release into the wild, the managers have been using puppets to feed these chicks. The captive birds are first taught to fly in special cages (Figure 3, right) and then released to bolster the declining wild population. This wildly ambitious conservation project, carried out by the Israel Nature and Parks Authority with the support of the Israeli army, has succeeded against all odds.

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Fig. 3. (Left) A griffon vulture chick. © JIT on iStock. All rights reserved. (Right) Griffon vultures on top of their special training cage in the Carmel Mountains, Palestine-Israel. © Irus Braverman. All rights reserved.

There are currently 220 vultures in Palestine-Israel. They are intensively managed using various forms of digital conservation. The chief ornithologist for Israel's Nature and Parks Authority told me accordingly: "I cannot think of any other animal on this planet with such high monitoring rates. We have about 80 percent monitored by GPS and 75 percent of the vultures are tagged, meaning we know their history and we also [genetically] sample each one."[13] Through this digital monitoring, an enormous body of data is accumulated about the vulture's location, body temperature, and movement. Specifically, acceleration data that identifies movement is analyzed to extract nuanced information about vulture behavior. This type of study is situated within the field of movement ecology, which promotes an understanding of movement patterns and their role in various ecological and evolutionary processes. Such complex conservation projects necessitate engagement with computer science, paradoxically distancing biologists from the very sites and materialities of their research. The alienation that occurs with such conservation management by algorithm highlights that "digital data enables and encourages the automation of conservation decisions."[14]

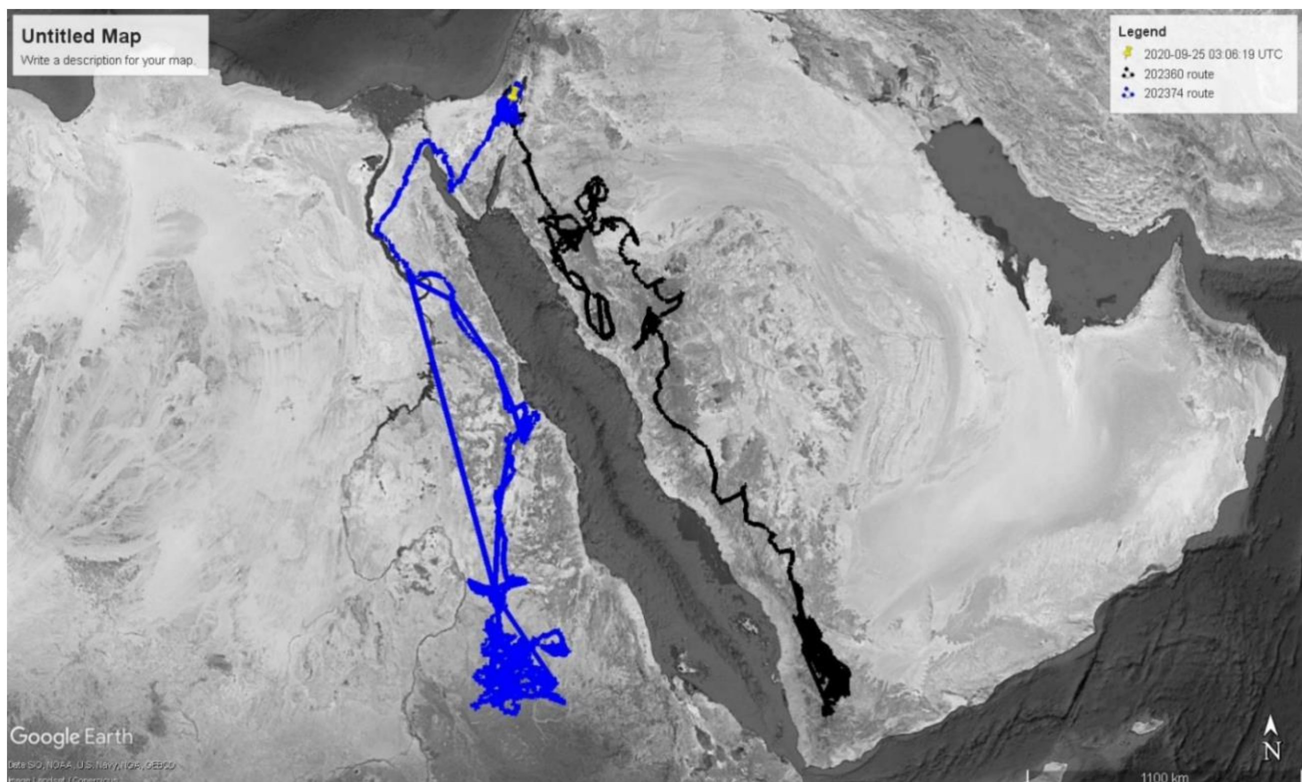

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Fig. 4. A map of the long-range forays of two young griffon vultures. Orr Spiegel of Tel Aviv University explained that "these vultures were caught in southern Israel in 2020 as first/second year juveniles and fitted with GPS tracking devices. [They] dispersed south along the Red Sea, reaching around 2,000 kilometers from their home range in Israel. One flew along the western shore through Egypt and Sudan, the other on the eastern shore through Saudi Arabia and Yemen (March 2021). The vultures eventually return[ed] to their home range" (Email communication, March 2021). This data was collected as part of Nili Anglister's dissertation in Orr Spiegel's lab at the School of Zoology, Tel Aviv University, in collaboration with Noa Pinter Wollman from the University of California, Los Angeles, and Ohad Hatzofe from INPA. © Orr Spiegel. All rights reserved.

Still, and above all, managing birds is experienced by their experts as an act of intimacy and care. Moreover, such experts often comment that the love of birds has no flags, politics, or borders and that, consequently, bird conservation could also bridge borders to make peace in this region.[15] Israel's vulture conservation project certainly has no borders, stretching thousands of kilometers away from Israeli jurisdiction into northern Africa and Saudi Arabia (Figure 4).

Perhaps unsurprisingly, then, the slogan "birds know no borders" has been criticized by Israel's neighboring countries as a green pretext for imperial control.[16] These countries have therefore not always seen Israel's intensive management of birds too favorably. In 2011, Saudi Arabia "detained" an Israeli vulture for spying. The vulture was carrying a GPS transmitter with the inscription "Tel Aviv University," prompting rumors that she was a Mossad agent. Israeli conservation officials dismissed these claims as ludicrous Arab fantasies, implying that they know how to care for the birds in the region best.[17] I refer to this perception of moral superiority in conservation management, which is often juxtaposed with a demeaning approach toward the native's barbaric lack of care, as "ecological exceptionalism." Alongside the remaking of the landscape after its biblical imaginary, ecological exceptionalism is yet another central tool for administering settler ecologies in Palestine-Israel. The role of bird protection for contemporary settler ecologies aligns with the broader significance that birds and their protection played in the early history of the modern Western conservation movement, which was mostly homogenous, white, and even racist.[18]

Alongside their important role for Israeli conservation, birds have also been central for Israel's military. Over the years, the Israeli air force in particular has developed a totemic relationship with birds. It started by accident, so to speak. Israel occupied the vast Sinai desert region in 1967, using it for military training in both land and air. In 1982, it withdrew from the region as part of the peace agreement with Egypt, and its training areas thus shrunk considerably. The training now had to take place along the birds' massive migration route between Europe, Africa, and Asia, where a half billion birds travel annually in what is often referred to as the world's "eighth wonder." In the following three decades, the Israeli Air Force lost 11 fighter jets as a result of bird collisions. Concerned about this massive loss in pilots and jets (but maybe less so in birds), the army approached Yossi Leshem, a prominent Israeli ornithologist, to map the birds' migration routes. The solution was simple, Leshem told me. "We separate the sky between birds and aircrafts," he said. "During the migration time, [which lasts] six months a year, the [pilots] don't fly below 3,000 feet above ground level."[19] As a result of the new movement regime designed by Leshem, collision rates dropped by 76 percent. Soon after, Israel's "take care we share the air" project became a model for air forces around the world. With the help of advanced technology and bird science, Israel thus transformed its spatial challenge into a military strength, packaged it as expert knowledge, and exported it as such to the militaries of neighboring countries.

> *Rather than recognizing and addressing the underlying problem—increased militarization—the technology merely mitigates the risks, at the same time enshrining military power in the region.*

While preventing pilots and jets from crashing into birds (and vice versa) is a worthwhile goal, it is somewhat ironic that the collaborations between countries in this region have been directed toward further improving a military technology that would effectively enable them to continue flying their

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war jets against each other, rather than eliminating the need to fill the sky with such jets in the first place. As in many other instances where technology is offered as a solution to problems caused by human encroachment, here, too, rather than recognizing and addressing the underlying problem—increased militarization—the technology merely mitigates the risks, at the same time enshrining military power in the region.

Whereas the army's initial study on birds emerged out of the pragmatic need to separate the sky, it would soon evolve into a much deeper engagement. Leshem explained that: "the army, at least in Israel, is the army of the nation. [It] is not just killing and shooting and fighting the enemy. If you want to have soldiers who protect the nation and understand why they are fighting, . . . you have to know its [nature]. It's the same as dating. To love someone, you have to know [them]. It's exactly the same."[20] The analogy between knowing the nation's land and wildlife and knowing a lover highlights the intimacies between nature, militarism, and the settler state.

The Zionist project of vulture conservation is therefore not only an environmental enterprise, nor is it solely about the land or even the animals and plants who dwell on it. It is, additionally, about the instrumentalization of nature to advance the Zionist mission: a way to strengthen the ties between the state, its land and creatures, and the Jewish soldiers who "serve" both the state and its nature. As for others in this region—mainly the Palestinians—they are typically barred from similarly serving the state and are therefore not exposed to, nor allowed to participate in, this intimate engagement with nature. At the same time, transboundary birds extend Israel's exceptional ecological reach even beyond its territory in an imperial form of conservation that is futuristic in its technological horizons yet also nostalgic in its harkening back to biblical imaginaries.

This article is adapted from chapter six in Braverman's book, *Settling Nature: The Conservation Regime in Palestine-Israel* (Minneapolis: University of Minnesota Press, 2023).

Notes

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[13] Ohad Hatzofe (ornithologist, Israel Nature and Parks Authority), Zoom interview by author, 6 November 2020.

[14] Braverman, *Settling Nature*, 219.

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[19] Yossi Leshem (ornithologist), Skype interview by author, 3 November 2020.

[20] Leshem, Skype interview.

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