

# enduring technological optimism: ZIONISM'S

ENVIRONMENTAL ETHIC AND ITS INFLUENCE  
ON ISRAEL'S ENVIRONMENTAL HISTORY

## ABSTRACT

When Zionism emerged in Europe as the Jewish people's national movement at the advent of the twentieth century, its political leaders and ideological visionaries were concerned about defining an appropriate relationship between Jewish settlement in Palestine and the "Land of Israel." Just as it sported a rich variety of political camps and philosophies, Zionism did not embrace a monolithic "environmental ethic." The perceptions and attitudes toward the natural world and the role of human intervention in the reclaiming of Jewish people's ancient homeland evolved dramatically as the pioneering community became more familiar with the country's physical realities and the agrarian economy became more industrialized. Yet, the initial "technological optimism," which informed the European founders' strategy for settlement in the Middle East, persisted and influences responses to growing environmental challenges in Israel today.

## PROLOGUE—HERZL'S VISION

IN THE SUMMER OF 1896, Theodor Herzl, the young Viennese playwright and leader of the nascent Zionist–Jewish national–movement, had a fateful meeting with a colleague. He later wrote of it in his diary: "Had a long talk with the electrical engineer [Johann] Kremenezky. He is a good Zionist with modern ideas. Great chemical industries could be established on the shores of the highly sulfurous Dead Sea. The streams that feed it would be diverted and used for drinking purposes. They would be replaced by a canal from the Mediterranean, part of which would have to pierce the hill through a tunnel (a tourist spectacle). The difference between the levels of the two seas (waterfall) could be utilized for driving machines. Many thousands of horse power."<sup>1</sup>

Born in 1860 to a wealthy Jewish merchant in Budapest, Herzl naturally gravitated across the Austro-Hungarian empire to the cosmopolitan city of Vienna.

Although he studied law, his passion was theater and he wrote some moderately successful plays, while primarily making his living as a popular journalist. As such Herzl was very much a secular, urban creature, with only a modest interest in the “superstitions” associated with his ancient heritage. While serving as foreign correspondent for the Viennese newspaper the *Neue Freie Presse* in Paris in 1894, he covered a trial where trumped up charges of treason were levied against a Jewish

Figure 1. Theodor Herzl.



Photo by The Jewish Agency.

military officer. The case triggered a public outbreak of French anti-Semitism, the virulence of which took him by surprise.<sup>2</sup> He soon became obsessed with the future of the Jewish people. Herzl became genuinely convinced that Europe’s long history of anti-Semitism put Jewish survival in jeopardy. He was similarly concerned by the pervasive poverty in which most of Europe’s Jews lived. For Herzl, Palestine, the name that the Romans had given to the historic Jewish homeland, offered a radical answer and he began to organize.

By 1902, Zionism, a vital political movement dedicated to returning Jews to their ancestral homeland, was capturing the imagination of the Jewish world. Herzl had even visited Ottoman Palestine briefly to see the Promised Land for himself. He took his many impressions home with him to Europe and that year penned his utopian novel *Altneuland*, “Old New Land.” In the book, a Viennese Jew and a Prussian nobleman return from a twenty-year isolation on a tropical island, stop in Palestine and discover Herzl’s utopian vision for the future Jewish state. Due to Jewish ingenuity, Palestine is no longer a neglected and desertified land but suddenly a technologically savvy nation replete with fast trains to Europe and infrastructure that consolidates gas, water, and electric lines in underground pipes. The book included Kremenezky’s ambitious engineering proposals. For millennia, the unforgiving arid climate coupled with anthropogenically driven desertification processes had slowly but steadily eroded local agriculture, changing the seemingly fecund biblical land of plenty into a feudal and largely subsistence economy. But in Herzl’s idealized country, state-of-the-art water management proved that negative ecological trends need not be destiny, and that a Jewish state could make the desert bloom: “The hydraulic engineers had achieved remarkable things in this region. Regulation of the Jordan had been only one of

their tasks. By means of magnificent dams, in the valleys between the mountains on the eastern side, the abundant water supply of the land had been utilized to the full. In the ages when the land had lain neglected, the rain had been allowed to run off into the ground. Now, by the simple system of dams, so well known through the civilized world, every drop of water that fell from the heavens was exploited for the public good. Milk and honey once more flowed in the ancient home of the Jews. Palestine was again the "Promised Land."<sup>3</sup>

The transformation would not only create a new agronomic reality, but also new energy via a canal: "The Dead Sea as everyone knew was the lowest point on the earth's surface, lying three hundred and ninety-four meters below the level of the Mediterranean. To convert this tremendous difference in levels into a source of power was the simplest idea in the world."<sup>4</sup> Other technological utopias were being envisioned during this period.<sup>5</sup> In Herzl's novel, as with those utopias, the meeting of "new" European technologies with the neglected "old" land was expected to enrich not only the soil and natural resources of Palestine, but also the spirits of the Jewish people themselves:

They stepped into one of the turbine sheds. Friedrich was overwhelmed by the immensity of the power development shown him, but Kingscourt seemed quite at his ease in the tumult of this industrial apparatus. With all his might he screamed comments no one could possibly hear; but they could see from his face, that for once he was wholly satisfied. It was really a magnificent cyclopean sight as waters crashed down upon the huge bronze spoke of the turbine wheels and drove them to furious turnings. From here the tamed natural forces were conducted into electric generators, and the current sent along wires through all parts of the country. The "Old-New-Land" had been fructified into a garden and a home for people who had once been poor, weak, hopeless, and homeless.

"I feel myself crushed by all this greatness, sighed Friedrich when at least he could speak.

"Not we," replied David earnestly. "We have not been crushed by the greatness of these forces—it has lifted us up!"<sup>6</sup>

## INTRODUCTION—ZIONISM AND THE ENVIRONMENT

MORE THAN A CENTURY has passed since Theodor Herzl took an amorphous but powerful historic impulse, deeply rooted across a dispersed Jewish Diaspora that sought to return to its geographic home, and launched what in retrospect is one of the more successful twentieth-century campaigns for national independence. But Zionism not only succeeded in changing the destiny of the Jewish people. It also physically transformed its "promised" land.

Jewish nationalism emerged almost a century after the onset of many other national liberation movements, such as those in Italy, and Germany. But conservation movements and notions of environmentalism in many of these lands (especially those that were part of the British Empire), only began to coalesce as a meaningful impulse at the start of the twentieth century, precisely during the same period when Zionism began stir the Jewish communities of Europe.<sup>7</sup> (Histories of mainstream American environmentalism, for example, often begin with Theodore Roosevelt's assumption of the presidency after William McKinley's

assassination in 1901 and his subsequent promotion of conservation.<sup>8</sup>) It should not be surprising therefore that defining an appropriate relationship to the environment of the homeland was part of the original Zionist discourse. Yet, in contrast to most Western nations, where nascent environmentalism emerged in a context of uncontested national sovereignty, the process took place as the movement fought to establish the very legitimacy of Jewish nationalism. Moreover, the Jewish pioneers were thoroughly immersed in intensive efforts to develop an economic basis for Jewish sovereignty. Hence, the pioneering ethos that characterizes many frontier societies was also a clear force in shaping local perspectives.<sup>9</sup> Torn by such powerful competing forces, the incipient Zionist movement hardly spoke in a single voice on the subject of nature and the environment—more often than not, it generated polarizing extremes.

Israel's modern environmental reality is also one of extremes—ranging from remarkable ecological achievements to disquieting deterioration and crisis. On the one hand, much like Herzl's vision, Israel is one of the few countries where desertification has been largely reversed and large swaths of semi-arid countryside, once written off as degraded wastelands, are now highly productive agricultural zones or verdant forests.<sup>10</sup> Although a tiny nation, it leads the world in water efficiency (drip irrigation is ubiquitous), sewage effluent re-use, and low-cost desalination drinking water technology.

With about a third of the country set aside as parks and nature reserves and another 10 percent designated as forests (both afforested lands and natural woodlands), a considerable fraction of the land has been preserved. Israeli public policy, emerging from a distinctly Zionist conservation ethic, has averted the mass extinctions of mammals and birds that loomed so ominously during the first half of the century during British rule.

But all is not well in the Holy Land. In a Middle Eastern equivalent of the Aral Sea, the Dead Sea, about which Herzl waxed technological, is rapidly disappearing, with water levels dropping a meter each year due to upstream diversions of the River Jordan. The feasibility of Herzl's canal to the Dead Sea has been debated for over a century, but the \$1-billion price tag appears to be prohibitive and many environmentalists are uncomfortable with the possible ecological consequences. Where Herzl fantasized about a "fructified garden," sink holes have sprung up around the Dead Sea, undermining local agricultural efforts and sabotaging tourist health spas. And there are troubles aplenty elsewhere. The country's major aquifers bear the signs of decades of insouciant contamination from a variety of pollution sources. Air pollution concentrations make exposure to aerosols the country's leading public health insult. Almost all of the country's twelve major rivers have become putrid sewage conduits; and sprawl slowly but steadily devours and fragments the ancient open vistas, threatening to reverse Israel's comprehensive advances in wildlife protection.

The modern state of Israel is located on territory considered holy by at least four of the world's leading religions. Accordingly, Israel's relationship to this land holds universal interest. For a century, the world's attention when focusing on this corner of the planet has been on the battle for political sovereignty and

Figure 2. The Dead Sea Works.



Photo permission by Keren Kayemet L'Israel, the Israeli branch for the Jewish National Fund.

This facility is located on the southern bank of the Dead Sea, the lowest lake on Earth. Today the sea is drying up.

competing national claims. Yet another, no less fateful battle, was being waged during much of the same period between the Jewish people and the very land which they set out to redeem. To understand the nature and outcome of this contest and how it evolved requires some understanding of Zionism—its vision of a Jewish homeland and the means that it employed for creating it.

Israel's present environmental predicament constitutes nothing less than a major crisis of values.<sup>11</sup> To address the symptoms, understanding the intellectual drivers is imperative. Some claim Zionism's environmental perspective began as a strong impulse of Romantic ruralism, but in fact this is historically imprecise.<sup>12</sup> For its first twenty years Zionism was essentially a European phenomenon, dominated by an urban bourgeois orientation that was hardly enamored of the local ecology. But once significant numbers of Jewish pioneers began to answer the call and move to Palestine after World War I, its land ethic began to take on a more tangible form; the ideology sprouted in the rocky and sandy soils of the Middle East. The original Zionist environmental vision, styled in European cities, ghettos, and hamlets, began to adapt to the new ecological reality. As Israel emerged as a modern state, aspiring to a European model of industrial, and then postindustrial, urban living, environmentalism became a far stronger force. But much of the original orientation, in particular the pervasive technological optimism, did not change.

Zionism was, and remains both a political philosophy and a pluralistic national

movement that aspires to restore to the Jewish people the “ordinary” status of an indigenous and independent nation. Yet the national movement that in but a few decades time managed to mobilize an ancient, geographically scattered people and forge a modern state was anything but normal. Moreover, many of the movement’s basic perceptions and axioms had to change in order to survive and eventually to succeed in a very complex and dynamic twentieth century. The Zionist orientation toward the natural world and the local environment also underwent an evolution.

The many streams within Zionism make generalizing problematic and any sweeping conclusions in this article must be tempered with the caveat of healthy political diversity and dissent. Although Zionism simultaneously sprung up in disparate continents across the globe, it was ideological rather than purely geographic distinctions that divided (or enriched) its ruling institutions. Religious, secular, Communist, Socialist, free-market, Fascist, humanistic—these were just a few of the camps that took their places at the regular Zionist congresses that convened to embrace the challenges of establishing a Jewish homeland in the ancient land of Israel. Yet from this vast cornucopia of intellectual contrasts emerged common, idiosyncratic features that when contrasted to other movements of national liberation are striking.

It would therefore be expected that the environmental ethic to which Zionism gave rise would also be unique, and it is. This article traces the intellectual assumptions and their impact on the land of Israel, focusing on the first two fundamental historic stages in the emergence of a Zionist environmental ethos. The first period, or the “European” stage, precedes World War I. The second involves a steady evolutionary process that took place from the advent of the British Mandate until Israeli independence in 1948. During the third stage, which largely lies outside the scope of this analysis, as Israel evolved into a modern nation-state, the perspective coalesced and continues to affect modern Israel’s environmental reality.

In an earlier study on the subject, Professor Avner De Shalit argues that Zionism’s environmental ethic began with a Romantic, ruralistic, ecologically sensitive Zionism that could not withstand the competing, pragmatic or economically driven antithesis that later emerged, venerating development in any form.<sup>13</sup> Both views, he argues, were born of a fundamental anxiety with the new land’s countryside. According to this school of thought, only in recent years has a balanced synthesis ultimately emerged from the clash of ideas.<sup>14</sup> A closer look at the period reveals considerable chronological imprecision in this argument.

Indeed, the original Zionists, almost without exception, were uncomfortable with their beloved land, which they perceived as environmentally hostile. At the same time, they were confident that Jewish ingenuity and European technology ultimately would be able to subdue the inhospitable ecology and countryside and allow for civilized living there. This technological optimism is somewhat different from the notion of the technological sublime, or “the repeated experiences of awe and wonder often tinged with an element of terror when confronted with ...

particular technological achievements” that were common in frontier societies.<sup>15</sup> The physical dimensions of early Zionist endeavors were far too modest to inspire such amazement. Rather Zionist perceptions of technology were much akin to the views of early American technological advocates, active a century earlier and described so thoughtfully by Leo Marx in *The Machine in the Garden*.<sup>16</sup> Indeed, many Zionist leaders like Herzl can be readily diagnosed as “technological utopians.” For them, technology, if pursued with sufficient ardor, constituted the most reliable instrument for attaining power over their surroundings and for overcoming the menacing and primitive “wastelands.”<sup>17</sup> Only much later did anything resembling a pro-environmental, technologically skeptical, Romantic, Zionist perspective become influential and moderate this original view, which continued (and continues) to inform Israeli public policies and programs—as well as to create ecological problems.

Accordingly, after the initial phase of alienation and suspicion toward Israel's natural world, a local Zionist environmental ethos based on unwavering technological optimism evolved in the early twentieth century. Other relevant components of the ideology included a ruralistic inclination and glorification of agricultural pursuits, a romantic connection to local natural history, a commitment to the teaching about nature in formal and informal educational systems, a strong communitarian ethos toward land and other common property and an inclination to maintain natural resources in the public domain, and a visceral connection and deference to the great national challenges facing a Jewish homeland: security, immigration, and economic growth.

All of these elements have undergone modification and evolved during the past century. These changes were largely in response to the real-world impacts that emerged in Israel, and the improved ecological understanding that came from exigencies and mistakes.

Sadly, some aspects of the Zionist environmental ethos have faded almost beyond recognition. But to this day, Zionism has never lost the essential faith in the ability of science and technology to bring about Herzl's utopia. This optimism informed other aspects of the Zionist environmental ethic. For it was technology that offered a small Jewish island in a hostile Middle East the hope of survival militarily and the potential to ultimately succeed economically. This belief in science and technology's ultimate triumph was part and parcel of the dream that inspired Jews from around the world to leave everything and move to a neglected, impoverished province. Over time it also became embedded in the perspective of farmers, factory owners, developers, and even local environmental activists. While this belief is perhaps the dominant element in the Zionist environmental ethos, it is only part of the picture.

## EARLY ZIONISM'S ECOLOGICAL ALIENATION

THE LARGEST CONTINGENT OF ORIGINAL ZIONISTS called themselves “Lovers of Zion.” In fact, most were terrified and appalled by the Land of Zion itself. The evidence simply does not support depictions of a ruralist “green” ethos embraced by Zionism's founding visionaries. The Zionist perspective toward the natural



world actually began to coalesce long before the inauguration of Herzl's political movement.

After two thousand years of exile from their historic national homeland, a small group of Jews came to believe that their minority status in the Diaspora had become untenable. Anti-Semitism was as deeply ingrained in the enlightened and democratic political cultures of western Europe as it was in the eastern European heritage of pogroms and persecution.<sup>18</sup> There could be no reasonable future for them in Europe, either as a secure minority or even through assimilation into Christian society. The Jewish problem required a political solution—and theirs was the renewal of Jewish sovereignty in the ancient homeland in Palestine.<sup>19</sup>

The diverse and often deeply divided Zionist movement that materialized after Herzl's 1896 Congress in Basel shared this historical analysis. But the group's environmental perspective was not as clearly articulated, if for no other reason than that "the environment" was not as salient an issue one hundred years ago as it is today. There were, however, clear common perceptions that contributed to a nascent environmental ideology. European Jewry's view of the Holy Land was first and foremost informed by Scripture and the subsequent literature of Jewish religious texts. When read selectively, these tend to paint a picture of a land that though scarce in water, had once been brimming with "milk and honey." Yet just as the Jewish people, "languishing in exile" for two millennia, had suffered from their separation from their homeland, the land of Israel was also thought to have suffered and was characterized by varying degrees of desolation. The subjective geographical assessment of Zionist leaders involved a keen sense of paradise lost.

This impression was undoubtedly supported by the regular visitation of emissaries from the Jewish communities in Ottoman Palestine, who for centuries came begging for donations from their generally indigent coreligionists in Europe. Their requests for charity for religious institutions in Jerusalem were replete with stories of the poverty and destitution in the forlorn and forgotten promised land. The general crumbling of the Ottoman Empire and the low priority it afforded this degraded, malaria-ridden province (Palestine did not even warrant independent colony status but simply was a southern part of the Damascus district) contributed to this perception.<sup>20</sup> But Zionists, by nature, were optimists: their mission was to redeem the land—and their perceptions of redemption would have profound implications for their future relationship with the land and environment of Israel.

Palestine was unquestionably run down. A variety of objective travel reports documented massive deforestation, desertification, species loss, and poverty.<sup>21</sup> Perhaps it was its deteriorated state that led many Jews and non-Jews to see it as property that was ultimately "for sale." Moses Hess, whose 1862 Zionist polemic *Rome and Jerusalem* predated Herzl by more than three decades, envisioned a political solution through payment to the Turkish government, which would be only too happy to unload such unattractive real estate. During the eight years he headed the Zionist movement before his untimely death, much of Herzl's considerable diplomatic activity in Turkey involved attempts to leverage Jewish economic power with hints of lucrative offers to the financially decrepit Ottoman



regime in Constantinople.

While Palestine in days of yore may have given birth to a successful agrarian economy, the yields produced by Palestinian Fellahin peasants at the end of the nineteenth century were extremely unreliable and improved little during the subsequent decades.<sup>22</sup> When a handful of Jews came from Europe to try their hand at farming in 1883, prosperity was elusive. Asher Ginsburg, a leading Russian Zionist intellectual who wrote under the pen name Ahad Ha'Am ("one of the people"), was a frequent visitor to Ottoman Palestine. He was aghast at the physical conditions of the first wave of Zionist settlers and completely pessimistic about the Jews' ability to eke out a basic livelihood as farmers. Based on his impressions, he concluded that Palestine was too inhospitable a place to provide a critical mass of Jews with an economic base of operations. Rather, Palestine should serve primarily as a Jewish spiritual center, with financial support coming from donations outside the region.

Ahad Ha'Am was unique among the leaders of the Zionist movement in that he actually had been to Palestine. The generally impecunious condition of world Jewry and travel to Palestine being what it was at the end of the nineteenth century meant that the vast majority of Zionists dreamed of returning home to a land they had never seen. Thus, while the wonders of the Holy Land were the subject of florid rhetoric and passion, in practice most of the original Zionist leaders were singularly unfamiliar with the particulars of the countryside that was the focal point for their infatuation and political ardor. They loved the idea of the land of Israel—more than any actual place itself.

When they arrived, the disappointment was great. While visiting Jerusalem, Herzl complained to his diary about the nauseating odors, apparently surprised by the stench that had always accompanied the absence of sewage disposal systems in the Levant. He also was struck by the almost complete absence of trees.<sup>23</sup> The little woodlands that did exist consisted of short Mediterranean trees and scrub lands, a far cry from a towering, temperate European forest. This was an age long before air conditioners could relieve the relentless climatic conditions and before the eradication of the ubiquitous malaria. For those hailing from a cosmopolitan European milieu, Ottoman Palestine and its modest towns (metropolitan Jerusalem had only 30,000 residents) were downright bleak.

It is not surprising, therefore, that during the first decades of actual Zionist settlement, rather than embracing a "romantic" idealization of restored *harmony* between Jews and the local ecology, it was *conflict* with the inhospitable land that was anticipated. It was a battle that Zionists, at least initially, were confident they could win, especially with European science and technology on their side. But it was a battle nonetheless.

Menahem Ussishkin was among the more dominant leaders of Russian Zionism during the first years of the movement. In 1890 Ussishkin took advantage of his honeymoon to visit Ottoman Palestine. With his fellow Zionist travelers, they ventured past civilization to the wetlands north of Haifa: "We were surrounded by sand and swamps, desert bushes, thorns and thistles. There was no site to be seen outside of the Carmel mountains, desolate and exposed, with

no green, without tree or plant, with no sign of settlement. The city of Haifa itself was small and poor, mired in mud and pollution. And only one neighborhood in the area interested the eye, the German neighborhood 'Carmel' that was beginning to develop in those days."<sup>24</sup>

Outraged by a barb from a German who had settled in Haifa, who intimated that the Jewish people were not up to the challenge of settling such wasteland, Ussishkin made his Zionist traveling companions take an oath that they would return and settle that land. It would take over thirty years, but Ussishkin's sanguine prediction was ultimately vindicated. After World War I he moved to Israel and began running the Jewish National Fund, the leading land acquisition agency of the period. In 1924, as part of his campaign to conquer the land, he would raise the money from Canadian Jews to buy the coastal valley south of Lebanon, drain it and begin to transform the area into the towns that now serve as the Krayot, Haifa's industrial suburbs.

Ussishkin's discomfort in the coastal swamps was typical of a general suspicion of Palestine's natural world that was manifested in early Zionist attitudes toward local wildlife. The Bible teems with creatures of all sizes and shapes. Having not yet felt the devastation wrought by the widespread dissemination of firearms, the fauna of the area at the end of the nineteenth century was still exceedingly rich. A peculiar assortment of African and Asian animals, from cheetahs and crocodiles to bears and giant birds of prey, still were prevalent and well documented by visiting nineteenth-century naturalists.<sup>25</sup> But Herzl, who was unfailingly positive in his description of local Arabs, was extremely unsympathetic in his depiction of the wild animals found in Palestine.

In his central political essay, *The Jewish State*, Herzl's lack of affinity for the local wildlife was evident when he posited: "Supposing we were obliged to clear a country of wild beasts, we should not set about in the fashion of the fifth-century Europeans. We should not take spear and lance and go out individually in pursuit of bears; we would organize a grand glorious hunting party, drive the animals together and throw a melinite bomb into their midst."<sup>26</sup>

This violent conservation strategy, while clearly tongue-in-cheek, is still instructive. Herzl frequently faced the argument that if the Zionist plan he proposed was indeed viable, it surely would have been attempted previously. To this he would respond that it was only recent technological progress that allowed for the human domination of nature required to make his dream feasible. Herzl's faith in science and technology ultimately would color personal perceptions and the professional stature of Zionists far into the future. In *Zionism and Technocracy: The Engineering of Jewish Settlement in Palestine 1870-1918*, Derek Penslar argues that Zionist veneration for engineers and agronomists exceeded even that of Europe's during this period. The Zionist technocrats offered the expertise necessary to establish a prosperous and successful national enterprise that was essentially productive (rather than strictly commercial) as well as provide a clear secular alternative model to the traditional Jewish religious scholar.<sup>27</sup> Despite their cultural differences, Jewish technocrats coming from both eastern and central Europe had the ability to transcend the potentially paralyzing political

divisions and engender the confidence of the Zionist rank and file who intuitively understood “the special role to be played by experts in the construction of Palestine.” Israel’s first and fourth presidents (Chaim Weizmann and Efraim Katzir) were renowned scientists, leading Israeli historian Noah Efron to note that “it seemed for a time that the road to the presidential residence in Jerusalem ran through the laboratory.”<sup>28</sup>

The 1917 Balfour Declaration was among the first concrete expressions of Britain’s post-Great War endgame. Once the British secretary of state for foreign affairs formally conveyed to Weizmann the position that His Majesty’s government viewed with “*favor the establishment in Palestine of a national home for the Jewish people*,” the nature of Zionist ideology changed. The dream suddenly appeared attainable. As Jews from eastern Europe began to immigrate, albeit hesitantly, the ideological spotlight soon shifted from Europe to Palestine. This was especially true with regards to the environmental component in Zionist thought, which not surprisingly began to reflect real-world experience and the very land Jews had “come home” to redeem.

Zionist chronicler Walter Laqueur explains that prior to 1917 Zionism was essentially an eccentric European phenomenon. Within a decade, a vigorous and politically active Jewish community in Palestine changed that. Laqueur writes: “It may be possible to write the story of Palestine in the Mandatory era without constant reference to the Zionist movement, but it’s quite impossible to do the reverse.”<sup>29</sup> The following sections explore the resulting perspective that emerged during the thirty years of British control that so informed the subsequent sixty years of statehood as the immigrant nation increasingly came to know, settle, and in many cases subdue the land of Israel.

## THE RETURN TO THE SOIL

EVEN PRIOR TO WORLD WAR I, a common aspect of early Zionism was an idealization of agriculture. The initial motivation was pragmatic. It is important to remember that at the turn of the century the vast majority of humanity made a living as farmers.<sup>30</sup> Agriculture, it was thought, could provide an economic basis for the settlement of a considerable portion of the Jewish settlers in Palestine. Moreover, in an age before refrigerated shipping and food preservatives, there was something more basic. If a million Jews were to come to Palestine, they would have to eat.

No less important in the eyes of most Zionists, regardless of economic philosophy, was the edifying effect of farming on the Jewish spirit. Because of restrictions on land ownership, although there were five million Jews in Russia at the turn of the twentieth century, only 3 percent could be considered farmers—and this was more than twice the 1860 rate!<sup>31</sup> These were the days when the veneration of Russian peasants filled Tolstoy’s best-sellers and the intellectual discourse of eastern Europe. At the heart of the Zionist message was a cultural critique of Jewish life in the Diaspora as excessively intellectual, superstitious, stagnant, and cowering. Among the ways that Zionism was to return to the Jewish people their lost dignity would be through the establishment of a flourishing

agricultural sector. Twelve years before Herzl launched his Viennese Zionist Congress in 1896, an ad hoc conference in Kattowitz had for the first time brought together leaders from an informal network of Russian groups that called itself Lovers of Zion. The gathering began with a keynote address by Odessa physician and Zionist philosopher Leo Pinsker, who passionately called for Jews to “return to the soil” in Israel.

Yet, like most Zionist visions, this was easier said than done. First there were political problems. The Turkish restrictions on Jewish agricultural settlement were so draconian that in order to assuage Ottoman concerns, early Russian Zionists passed internal by-laws that prevented them from organizing Jewish immigration with agricultural training or aspirations.<sup>32</sup> And farming itself in a semi-arid climate, on the sandy or rocky soils that Zionists managed to purchase, was not a trivial matter. Indeed, initial attempts at colonization during the first wave of Zionist in settlements (*moshavot*) such as Gadera, Zichron, Yaakov, and Rishon L'Tsiyon were disastrous. It took little time for the majority of the enthusiastic young European pioneers to grow sick and despondent and ultimately leave. Only the intervention and the \$5-million investment of financier Baron Edmond de Rothschild allowed the settlements to survive, and then only as very colonial enterprises. At the turn of the twentieth century there were roughly forty thousand Jews living in Israel, only a few thousand of whom were engaged in agricultural operations. They were predominantly overseers for Jewish land owners who hired local Arab peasants as workers.<sup>33</sup>

By the time the next wave of young Zionists settlers reached Palestine after 1905, the new arrivals were frequently considered by the seasoned and cynical veteran immigrants to be too expensive and inexperienced to be hired. After the rhetoric died down, for most Zionists of the time farming ultimately was perceived as an economic enterprise. First and foremost it needed to provide an occupational solution to the vexing problem of unemployment. The steady stream of subsidies provided by “the Baron” (Rothschild) to save the small Jewish *moshavot* (agricultural villages) was resented by the farmers themselves because of the considerable strings and oversight attached. At the same time, it was seen as embarrassing and deemed unsustainable as a model for a successful Zionist economy.

Herzl, although impressed by the horseback riding skills of the Jewish farmers he met during his brief visit to Ottoman Palestine, had no illusions about the limited potential of the modest Jewish colonies. Indeed, he believed that a strategy of slow and steady infiltration of European Jews would be detrimental to Zionism’s ultimate objectives, engendering opposition from the local Arab population, whose pressure would lead to limitations on immigration. (In this respect, his analysis was prescient.) Herzl’s *political Zionism* was macro in its approach. He sought a charter that could ensure political autonomy in advance and provide the necessary guarantees to galvanize the full measure of Jewish financial power and European know-how to launch the national redemption and transform the land. But this envisioned conversion would be primarily an industrial transformation and not an agrarian one, reflecting state-of-the-art European technology. A Jewish state would flourish, Herzl believed, if it became the

Switzerland of the Middle East, rather than a Russia.

There appears to be considerable misapprehension among scholars (and Zionist propagandists) about the scope of agrarian endeavors during Zionism's formative years.<sup>34</sup> In fact, it would take decades for Jewish agriculture to attain a dominant place in the local economy, politics, and mindset. In 1925, thirty years after the publication of *Altneuland*, young labor leader (and future founding Prime Minister) David Ben-Gurion claimed at the fourteenth Zionist Congress that, in fact, only one of every forty-two Jews living in Palestine actually made his living from farming.<sup>35</sup> That statistic was, to a large extent, a function of the availability of arable lands. When Ussishkin took the reins of the Jewish National Fund in 1924, it had managed to purchase only two thousand hectares in a quarter of a century of work.

This quickly changed, and over the next two decades the scope and influence of agriculture in Zionism grew exponentially. From 1921 until the advent of World War II a full third of public expenditures were directed to rural colonization.<sup>36</sup> Although British land restrictions slowed progress, this 1940 table from the Palestine Statistical Abstract indicates the steady, almost geometric, increase in Jewish agricultural activity.

**Table 1. Jewish Agricultural Activity.**

<b>Year</b>	<b># of Settlements</b>	<b>Inhabitants</b>	<b>Land Area in Hectares</b>
1899	22	5,000	30,000
1914	44	2,000	40,000
1930	107	45,000	105,000
1936	203	98,300	148,000
1939	252	137,000	165,000

Based on The Palestine Statistical Abstract.

Much of the credit for this success can be attributed to the administrative talent of Arthur Ruppin, who opened and for many years ran the Palestine Bureau for the World Zionist Organization. Although the consummate technocrat, Ruppin was motivated by powerful ruralist leanings. (He once confided to his diary that “since Jews have stopped pushing the plow, they have become degenerate,” and he believed that 80 percent of the Jews in Palestine should be farmers.<sup>37</sup>)

As Labor Zionism steadily gained a majority among Palestine's Jewish residents, the stature of farming and its political influence in Zionist circles increased. But only after World War II would David Ben-Gurion and his Labor Party seize the reins of control from Chaim Weizmann and the General Zionists who had headed the movement since Herzl's day. While in retrospect the Labor Party often is perceived as agrarian in its orientation, in fact Ben-Gurion's power base still was rooted in the Histadrut—Palestine's Jewish Labor union, which was predominantly an urban proletariat institution, rather than an agricultural collective one.

It is important to emphasize the kind of agriculture that was adopted by the Zionist settlements. Here, the Palestinian Jewish community embraced Herzl's technological optimism with unparalleled energy and ingenuity. It rejected the

indigenous agricultural practices of the Fellahin as inefficient and archaic in favor of a more mechanized, technologically advanced and ultimately more prosperous, European model. Research institutions were soon established to create a comparative advantage. The first agricultural extension station was founded during the Ottoman rule by Aaron Aaronson, in Atlit. Later, in 1921 the Zionist Executive Agricultural Station, headed by the Lithuanian professor Yizhak Volcani, was established. Citrus quickly emerged as the most lucrative local crop. At its peak, the fruit constituted 80 percent of export revenues from Palestine.<sup>38</sup> (To this day, in many countries of the British Commonwealth, an orange drink is called a Jaffa—after the Palestinian port that began sending citrus around the world during the 1920s.) The citrus boom undoubtedly contributed to the gradual shift away from perceiving agriculture as a ticket to Jewish self-sufficiency and toward a business investment with the potential to generate foreign currency.

When Walter Clay Lowdermilk, an American soil scientist, arrived in Palestine in 1938 as head of a U.S. Department of Agriculture mission, he described the transition to high input mono-cultures: “The country is emerging from a backward low-yield agricultural economy, dependent chiefly on grains and olives and is evolving toward a modern, scientifically directed and richly diversified economy with fruits, vegetables, poultry and dairy products playing an ever greater role. The wooden plow is yielding to the tractor, the flail to the threshing machine. Rural Palestine is becoming less and less like Trans-Jordan, Syria and Iraq and more like Denmark, Holland and parts of the United States.”<sup>39</sup>

While tilling the soil held existential ideological appeal, especially among the young pioneer farmers in Palestine, it was not so much beliefs as budgets that concerned the official bodies of the Zionist movement. Thus the Zionist Congress of 1924 insisted that agricultural settlements pull their weight like any economic enterprise and attempted to rein in the agrarian mysticism and considerable subsidies its agents were providing in Palestine.

Much of this orientation remains unchanged. The commitment to pursuing new agricultural technologies is a key component in current agronomic strategy. Today, Israel’s Ministry of Agriculture invests over \$70 million annually in agricultural research (compared with say the Ministry of Environment’s investment of less than \$1 million in environmental research). Drip irrigation, which was conceptualized in the 1930s by Simha Blass, an Israeli engineer, and developed decades later, is an \$810-million industry with Israeli technologies enjoying a strong international market share.

The automation and intensification of agriculture and the shift to large monocultures had myriad negative environmental implications. Palestine’s and later Israel’s farmers would contribute the lion’s share of the water contamination associated with non-point source runoff of fertilizers, pesticides, and irrigation return flows. Yet these externalities arose more from lack of awareness and hydrological data than from greed or negligence. Indeed, when the Jewish farmers became aware of environmental concerns, such as in the case of soil conservation, their performance was exemplary. Lowdermilk’s surprise in this regard is reflected in his extravagant praise of Zionist stewardship during the 1930s: “Along

with the records of decay in the Holy Land we found a thoroughgoing effort to restore the ancient fertility of the long-neglected soil. This effort is the most remarkable we have seen while studying land use in twenty-four countries. It is being made by Jewish settlers who fled to Palestine from the hatreds and persecutions of Europe. We were astonished to find about three hundred colonies defying great hardships and applying the principles of co-operation and soil conservation to the old Land of Israel. ... here in one corner of the vast Near East, thorough going work is in progress to rebuild the fertility of land instead of condemning it by neglect to further destruction and decay.<sup>40</sup>

In short, when faced with an environmental problem and given a feasible solution, the Zionist agricultural community happily turned to technology to solve it. Only a tiny number of local scientists at the time were even vaguely aware that there might be ecological ramifications.

There is no area where the zealous commitment to technological solutions was more profound than in the aggressive development of a water management system to support the burgeoning agricultural sector. Professor Volcani immediately intuited that the traditional mule-driven pumps that were used for canal irrigation in the Arab sector were not up to the irrigation challenge that citrus presented. Fourteen years after the start of the Mandate, Zionist agencies could boast over a thousand wells and canal systems that tapped springs and streams.<sup>41</sup>

But that was just the beginning. In 1939 Arthur Ruppin, who oversaw Zionist settlement development, commissioned plans to transfer water from the rainier areas of the country down to the drylands. Implementation during the period of the British Mandate sputtered under the heavy regulatory restraints imposed by the colonial government. But once Israel was established, this infrastructure became a national priority. In 1955 the headwaters of the Yarkon River were completely diverted to irrigate new settlements in the Negev Desert. A decade later, the National Water Carrier began pumping water from the Kinneret Lake (the Sea of Galilee) to a grid for delivery throughout the center and south of the country, 80 percent of which went for irrigation.<sup>42</sup>

The stage was set for Zionism's "agricultural miracle." During Israel's first fifty-five years, the country's population grew sevenfold, but the agricultural sector boosted yields sixteenfold.<sup>43</sup> As wastewater reuse became ubiquitous, the amount of fresh water consumed by the farming sector steadily dropped. But the grand hydrological experiment continued to carry a heavy environmental price tag. Salinization of wells along the coast began to appear as aquifers were overpumped to provide water for the burgeoning agricultural sector, and salt water from the Mediterranean percolated in to fill the vacuum. Additionally, the saline waters that were routinely delivered from the Galilee added roughly 170,000 tons of chlorides each year to the soil in central and southern Israel.<sup>44</sup> The result was a substantial hydrological insult. By 1990, over 15 percent of the wells in Israel's coastal aquifer had to be decommissioned because of high salinity rates.<sup>45</sup> Fertilizer and wastewater reuse also contributed to massive nutrient contamination. Average nitrate levels in wells along the coastal aquifer increased



from 30 mg/l in 1950 to 63 mg/l today—while the World Health Organization recommends a maximum concentration of 45 mg/l.<sup>46</sup>

## THE ROMANTICS WEIGH IN

FROM THE TINY CLUSTER of “pioneer farmers” who returned to the soil in Palestine prior to World War I, a more gentle voice emerged that took a Romantic view of the Jewish people’s relationship to the land. Farming for them was something far more profound than simply an exercise in agronomy or foreign-currency generation. This position, largely associated with the young Socialists, their collective farms, and their laureates, made up the bulk of the second Aliyah, or wave of immigrants. They sought nothing less than reconciliation between the Jews and their ancestral homeland. Tilling the soil, they believed, was the best way to heal the land and the Jewish spirit. In today’s terms, their aspiration can be characterized as a longing to restore to the Jewish people their status as an “indigenous people”—at once in touch with and rejuvenated by the very soil, plants, and animals that had given birth to their nation millennia ago.

Aaron David (“A. D.”) Gordon personified this point of view and emerged as its greatest advocate. Arriving in Israel at age 48 after managing an estate in Russia, he was soon working long days—despite his age—as a hired laborer in Petah Tikva and Rishon L’Tsiyon before moving to the Galilee three years before his death, in 1922. Self-taught and highly learned in a range of areas, he refused to be paid for his lectures and intellectual property, writing at night about the redemptive power of labor and the virtues of a renewed relationship between Jews and their land.<sup>47</sup>

Gordon quickly became a beloved, guru-like figure for many of his young coworkers. It was not just the contrast between his anomalous age or the Russian peasant’s tunic and flowing white beard that captured their imaginations. It was his enormous personal integrity. The old man’s passion was infectious. Suddenly, the exhausting labor in an unfamiliar and unforgiving setting was not so much a job as a route to personal salvation. It is little wonder that his philosophical musings about the pioneering Zionist experience resonated with a generation of immigrants who were destined to produce the political leaders in the newly created state. The Jewish relationship to Palestine’s environment was a central part of his outlook, important enough for him to dedicate an entire book to the subject.<sup>48</sup>

Equating “nature for humans” with “water for fish”—an intense, organic relationship with the natural world was for Gordon a necessity for the spirit’s survival. Gordon intuited the ecosystem services that would come to inform the international environmental discourse a century later. He attacked the prevailing trends in European and Zionist society: “Nature is relegated to the status of a grocery store, no longer as a source of life ... The planted field or the forest, for example are assessed according to their yields, the extent of the timber and the exact amount of money.”<sup>49</sup> Gordon argued that nature provided a cure to the alienated spirits of his day: “the more man develops and the more his emotions and awareness become deeper and broader, and his knowledge becomes richer, he is in greater need of direct attachment inside of nature. To suckle directly from this vast global experience.”<sup>50</sup>

Deeply influenced by Tolstoy, Gordon's critique of urban life is as relevant today as when he wrote a century ago: "In practice you see that the more humans take from nature, the more they become distanced from it and ignore it ... They create a division between themselves and nature, and they become condensed and compressed inside their walls, like a turtle in its shell, until they reach the conclusion that life exists in an independent sphere and nature exists in an independent sphere."

The Zionist culture that emerged from this period was undoubtedly influenced by the Gordonian perspective. Among Gordon's many devotees and confidants in Israel was the young Russian immigrant, Rachel Blubstein, whose poems became such an integral part of Israeli culture that today she is simply known as "Rachel the poet." Although she knew not a word of Hebrew when she arrived in Israel at age 19 in 1909, Rachel was soon among the most highly regarded and thoughtful writers of the period. (Literary talent and Romantic leanings notwithstanding, true to the prevailing Zionist technocratic ethos, at Gordon's urging she traveled to France during the 1920s to complete studies in agronomy.) Before Rachel succumbed to chronic tuberculosis in 1931 she had penned an impressive collection of doleful elegies and lyrical love songs to the Galilee. For her, and the scores of devoted readers ever since, Zionism was not so much about building Jewish political power as it was about fostering a reunion with an ancient land:

"I never sang to you, my land  
And I never glorified your name  
With plots of heroism, nor the panoply of battles.  
Just a tree that my hand planted  
The quiet shores of the Jordan  
Just a trail that my feet conquered  
Along the face of the fields."<sup>51</sup>

She, like Gordon, was raised in a pious home, and indeed Gordon remained religious for much of his life. But his environmental philosophy offered a decidedly secular theology for the new immigrants.

Yet not all Zionists were secular. There were many devout Jews who rejected the reluctance of traditional Orthodox Judaism to pursue political self-sufficiency without God's direct intervention. Religious Zionism in the early years of the twentieth century was as green as any of the Zionist camps that took hold in Israel. This had less to do with time-honored Jewish law and lore with regard to the natural world (although there is a rich environmental tradition manifested in a variety of Jewish texts from which to draw) than the personal proclivities of the Chief Rabbi of Palestine—Abraham Kook.

A mystic who believed that secular Zionism was a harbinger of messianic deliverance, Kook saw holiness everywhere in the nature of the Promised Land. To this day he is as revered by a large Zionist segment of Israel's religious community as he was when the following was written by one of his disciples: "After the afternoon prayers, our Rabbi went out, as was his holy way to wander in the fields and focus his thoughts. And I accompanied him. On the way I picked a weed or flower. Our Rabbi was shocked and told me kindly: Please do believe me

that all my life I was careful to never pick without some direct benefit a flower or plant that might grow or blossom—for there is no plant down below, that doesn't have a muse above that is telling it to grow. Even the smallest budding plant has something to say; every stone whispers some secret as the whole of creation offers its song."<sup>52</sup>

Numerically, however, religious Zionism was a relatively small fraction of the generation that established the third Jewish Commonwealth, and the religious community in Israel provided no real national leadership in initiating any ecological awakening.

In retrospect Gordon, with his humanistic, ecological way of thinking, was also relatively marginal in terms of his influence on public policy of the Jewish community in Palestine. Gordon spent much of the eighteen years he managed to live in Israel working the soil. This meant that he did not have an abiding interest in disseminating his views among the professional Zionists who ran the World Zionist Organization. Indeed, Gordon never left Israel for any amount of time, attending only one Zionist Congress in 1911.

Gordon was among the founders of the HaPoel HaTsair (The Young Worker) party, which by design was far less political and decidedly non-Marxist than its rivals on the left of the Yishuv's political spectrum. The party chose a more spiritual and humanist orientation. For example, in the realm of settlement it eschewed large communities for the smaller, intimate "k'vutsot." While this apolitical inclination surely strengthened the authenticity of his message and Gordon's vaunted standing within the Zionist community, it diminished his influence on Zionist development.

It would take years for Gordon's ideas to reach a status that was anything resembling mainstream. His passion for harmony with the land of Israel for many came to constitute a sweet but unattainable ideal. And while for a time the young settlers purportedly argued into the nights about the virtues and potentially corrupting influence of tractor acquisition, ultimately, the move to mechanized agriculture was swift and widespread. In the end, Gordon was concerned with saving the *soul* of the Jewish people through a return to nature and the soil, while the Zionist leadership felt that saving the *body* was of greater urgency.

The small but creative academic community of Palestine's natural scientists appears to have been inspired by the Romantic Zionists. Alexander Eig, who founded the botany department at the nascent Hebrew University in Jerusalem, was one of the leading naturalists in Palestine. An essay written in 1926 shows the first signs of a clear Zionist conservation ethic among Palestine's Jewish community and the antecedents of what eventually would become Israel's robust and aggressive environmental movement.

Prophetically Eig wrote: "Especially great are the changes caused by humans at a time when the land is unsettled or only half settled and a flow of immigrants from cultured lands begins. By using sophisticated technical tools in agriculture, these immigrants are creating a revolution in local fauna. ... Entire groups of plants of this land, like those found in wetlands, are steadily disappearing. Many species are narrowing their area of distribution. New species are appearing and

taking over greater and greater territories. ... Those interested in the nature of the Land and its fate must get organized into an association for the purpose of preservation of nature. And one of its primary tasks would be to keep a constant watch about all that concerns the plants of Israel."<sup>53</sup> Calls like this resonated on a theoretical level among the Zionist community and for the first time raised the possibility of unintended ecological consequences produced by Zionist progress. But never was there a meaningful questioning of the necessity for rapid technological advances. Given the circumstances and the overwhelming challenges during the 1920s to the movement's (and in Zionist eyes, to the Jewish people's) survival, such concerns were luxuries that would have to wait.

Twenty-seven years after Eig's pamphlet, a "Society for Protection of Nature in Israel" (SPNI) would be established that quickly became the largest NGO in the new state and on many issues an influential political player. But in its hundreds of campaigns to save countless scenic corners of the country, the SPNI and the many other environmental NGOs in Israel never seriously questioned Israel's strategic embracing of science and technology. Indeed, SPNI founder, Azariah Alon argued that the country was far too crowded and urban to seek environmental solutions outside of modern civilization.<sup>54</sup>

## NATURE AND EDUCATION

IT MAY BE DIFFICULT to link Romantic Zionist advocacy to any real public policy achievements in the environmental realm within the pre-State Zionist movement much less among the official Mandate's development agenda. But Gordon and his "green" colleagues can be credited with a lasting environmental influence through their elevation of the study of nature and its appreciation in the Zionist educational curriculum. The relatively apolitical youth movement "Gordonia" was founded soon after the old ideologue's death and for many years it was active in Europe, spreading his gospel of Labor Zionism. But the naturalist, ideological influence went further and permeated Palestinian and Zionist youth culture in general.

Both the formal educational system that was established by the Zionist community during the British mandate and the informal education that flourished in the sundry youth movements that dominated the lives of teenagers held the land of Israel's natural world in the highest regard. Attaining expertise about the geography, botany, and ecology of the homeland became a way for the children of immigrants to establish their Zionist credentials. It distinguished them from their parents, whose Hebrew illiteracy often was not very different from their general ignorance about local flora, fauna, and geography.<sup>55</sup>

Nature and Moledet ("homeland"—a combination of geography and civics) studies were among the most important compulsory classes in Palestine's Zionist public school system in the 1920s and were among the most prestigious specialties for teachers. These classes were often linked to the study of the Bible, producing a spiritual link to the natural history of the rediscovered homeland. Sociologist Oz Almog writes: "Already in the period of the First Aliyah, the Jewish settlers

would wander in the land with the Bible in their hands as a guide book that told the story of the landscape facing them. ... The Bible served as sort of a birth certificate for the immigrant pioneer and helped eliminate the division separating him from his new land that was so different in its climate and its character from the land of his birth and strengthened the sense of homeland.”<sup>56</sup>

Thus school trips that featured hikes and camping became a central element in the educational system.<sup>57</sup> Zionist educator Mordechai Michaeli described Zionist education in the 1920s: “The pupil in the land of Israel is not always imprisoned like the pupil in the “Cheder” (Jewish European primary schools). The school field trips expand his knowledge and his perception and increase his desire and activities.”<sup>58</sup> Meron Benvenisti, a former deputy mayor of Jerusalem who grew up before the state was established, is among the thousands who were influenced by this experience. He would later boast that he could chart dozens of complex trekking routes by memory, based on his youthful expeditions. Describing the experience from the perspective of the local “Sabra” youth he writes: “The ‘tiyul’ [“field trip”] was not just an outing. It was the high ceremony of the cult of Moledet. The preparations took weeks and involved not only logistics such as transportation and food, but rehearsals of performing troupes and preparations for evening lectures.”<sup>59</sup>

The heavy dosage of natural indoctrination was not without results. The sociologist Oz Almog argues that the generation of native-born Israelis who served as soldiers during Israel’s War of Independence can be classified as “pantheistic” in their devotion to nature and the observation of its nuances. But as much as a spiritual experience, nature represented an intellectual challenge: “Remembering the names of plants and places expressed dedication to the Zionist ideal like the expertise of the traditional Jewish scholar about the holy books expressed religious dedication according to Jewish tradition.”<sup>60</sup>

Alongside the environmental message was an ethos of ruralism that came to inform Zionist and later Israeli educational institutions. Even as the majority of Jews who came to live in Palestine, and later in Israel, had practically no daily connection with farming, high schools would send their pupils during vacations to work camps where they could provide the manpower that outlying farms often needed. Youth movements encouraged their participants to adopt an agricultural lifestyle and form new settlements upon their graduation from high school as the highest realization of Zionist ideology.

Hiking, mastery of taxonomical minutiae, understanding natural history and its link to the Bible remain common themes, albeit not as intensively, in Israel’s urban and rural schools and youth movements to this day. But once again, the overall context in which these subjects are offered is more scientific than spiritual. For instance, since the 1980s, nature has become part of the six-hour weekly “science and technology” requirement for primary school pupils. Israeli children learn about the wonders of turbines, genetic engineering, and transistors in the same class and with the same teacher who teaches them the wonders of local warblers and wildflowers.

## THE ZIONIST LAND ETHIC

IN 1901, AT THE FIFTH Zionist Congress, a resolution was passed that established a Jewish National Fund (JNF). Technically a corporation owned by the World Zionist Organization, the fund soon became the operational arm of the movement. Because the JNF since 1961 has formally served as Israel's forestry agency, its work is often given as proof of Zionism's original green orientation. But such an argument belies the JNF's actual history. During the first half-century of its activities, the JNF planted a meager one thousand hectares of forests, and only became fully committed to afforestation when the nascent state sought solutions to its unemployment problems in the 1950s.<sup>61</sup>

This is not to say, however, that the JNF has not had an effect on the Zionist environmental moral code. Rather, its primary influence has been on Israel's land ethic. In an 1862 monograph that constituted the first clear modern expression of political Zionism, Moses Hess, advocated what he called Mosaic Socialism.<sup>62</sup> A colleague of Karl Marx, but ultimately skeptical of his universalism, Hess believed that in an ideal Jewish State land would not be owned by individuals. Fifty years later at the First Zionist Congress, Zvi Herman Shapiro, a professor of mathematics from Heidelberg, forwarded his proposal for a national fund that would be dedicated to land acquisition ("redemption").

The JNF's policies were inspired by the Biblical lines from Leviticus 25:23 "And the Land shall not be sold in perpetuity—for the land is mine." A slow and steady process of land purchases, primarily from wealthy absentee Arab landlords, began to provide the physical territory for Zionist colonization. As the soil of Palestine was in scarce supply, and as it constituted the key to the expanded Jewish immigration that could ultimately lead to independence, its sacrosanct dimensions were reinforced in the Zionist mindset.

By 1954, when the dust finally settled after the War of Independence, the JNF could boast land holdings that reached 235,000 hectares, or 13 percent of the country. (This was far more than the previous total Jewish ownership, which at the end of the Mandate was a mere 7 percent of Palestine.) As had been stipulated in the original proposal to the Zionist Congress, these lands were earmarked for Jewish settlement and could never be sold. Rather, the public, farmers, and even factories could only lease their tracts for rental periods of forty-nine years. In 1961, when the JNF and the Israeli government merged their land-holdings for the purpose of joint management under a single Israel Lands Authority, the JNF policy was adopted for the entire reservoir of public real estate that together included more than 90 percent of the land in Israel. For many years this "earth-is-the-Lord's" approach to land ownership was at the heart of public policy (even as it lacked the humility and stewardship of other indigenous religious land ethics that can be found from native North American to Tibet). Such extensive public land ownership, along with supplementary legislation in 1963, also allowed the government to translate a broad societal preservationist inclination into a Parks and Nature Reserve System that protects 30 percent of Israel's land stocks, with 10 percent more designated as forests.



Figure 3. Huleh Lake, 1923.



Photo by Yaakov Ben-Dov.

This was part of the Palestinian wetland ecosystem. Only 3 percent of this ecosystem remains intact today.

It would take until 2003 for a government committee to discard this Zionist axiom and recommend a more modern, capitalistic property policy. In 2005, the Israeli cabinet (which at the time included ministers from both the “leftist” Labor Party and the “rightist” Likud) unanimously adopted the recommendations of the Gabish committee, which recognized private land ownership for the homes of Israeli citizens. The JNF had been represented at the committee but found itself in the minority. Ever the Zionist corporation, the JNF refused to include its hallowed lands in the buyout and continues to publicize the slogan: “Soil is not Real Estate.”<sup>63</sup>

Zionist optimism, the underlying theme of this article, even reaches the seemingly staid realm of soil science. A famous story, which may be apocryphal, is related by novelist Meir Shalev. Despite a token protest by natural history and zoology professors, in 1952 the Jewish National Fund decided that it was time to drain the Huleh wetlands, a veritable treasure chest of biodiversity, to make way for more arable lands. Naturally, it made sense to confer with engineers from the Netherlands who have experience in the field of land reclamation. After touring the site, a Dutch expert warned that the peat in the ground was combustible, unstable and had the potential to undermine the project. “Then the JNF hydrologist stood up, hit the table with his fist and declared: ‘Our peat is Zionist peat. Our peat will not do damage.’ As is known, the Dutch have much experience in the reclamation of land. But even they had not yet met land with a political conscience.”<sup>64</sup>



## PATRIOTISM AND THE ENVIRONMENT

AT SOME LEVEL, support for nature preservation and clean water and air is a platitude. It is very hard to find people who are *in favor* of contamination and extinctions. The real test of environmental commitment emerges when environmental values come into conflict with other societal concerns. Three key Zionist priorities were destined to clash with environmental protection: security, immigration, and employment. Not surprisingly, the environment usually came out a loser.

Ecology was not the only area where the perceptions of the original nineteenth-century European “visionaries” were fundamentally detached from the actual situation on the ground in Palestine. Much has been made of the tendency of the early Zionist thinkers—including Herzl and his contemporaries—to underestimate the size, national aspirations, and virulence of the resistance among the local Arab Palestinian population. They had not been consulted when the Jewish people embarked on this nationalist endeavor and many saw the aggressive Jewish development and transformation of the local scenery as little more than conventional and unwelcome colonialism. “A land without a people for a people without a land”—so went the unfortunate slogan of Israel Zangwill, the early Zionist novelist from London. It did not take much time for the wake-up call to arrive.

Already by 1920, a major pogrom, fueled by nationalist invective, had taken place against the Jews in the old city of Jerusalem. Wider and more vicious attacks by Palestinian Arabs in 1929 led to 133 Jewish deaths.<sup>65</sup> Many Israeli historians consider the Arab-Israel conflict a single century-long war that continues from those days until the present battles in Lebanon and Gaza. The ramifications of such a protracted, violent struggle could not help but affect the Zionist environmental experience.

During the first half of the twentieth century, Zionist paramilitary operations integrated natural history in their training implicitly and explicitly. Navigations, long marches, and familiarity with the terrain all became requisite skills required of soldiers, even when their units’ specific areas of operations had little to do with the outdoors. This mixing of natural and national impulses reached a peak in the paramilitary exercises of the pre-state militias (the Haganah and especially the crack military elite, the Palmach) where field skills had particular utility. “Our youth know how to walk. They know how to find the place they seek, for they are children of this land,” wrote Commander Yizhak Sadeh about his soldiers.

In the battle for control over the land, trees came to play a role. Old Ottoman land laws, which allowed for legally asserting ownership by planting trees, remained in force during the British Mandate and for many years after independence. Yet Biblical prohibitions about protecting trees in times of combat notwithstanding, woodlands often paid the price of the internecine enmity. The hundreds of hectares of native forest that were part of the Sejira settlement (in the Lower Galilee on the way to Mount Tabor) at the start of the century were a typical case. The Jewish settlers painstakingly maintained and managed the woods between 1901 and 1913. When firewood became a valuable commodity during World War I, neighboring Arab villagers began to engage in illicit logging.

Years later, Lova Schechter, a Sejira farmer, described a traumatic incident. Her husband, who was on guard duty, chanced upon dozens of Arabs, mostly women from the neighboring Arab villages, in the thick of the forest. In a well-planned operation, they had come with their axes and saws to fell the Zionist trees and take them home on the backs of their waiting mules and donkeys. Her husband charged the villagers on his horse; they retreated and security around the forest was expanded. But it was a losing battle. The forest's proximity to the Afula train station, a major stop on the Damascus/Cairo line, doomed it. By order of the Turkish authorities the woodlands were clearcut to provide fuel for the military trains.<sup>66</sup>

Another dimension of what has been dubbed the politics of planting was arson.<sup>67</sup> It was not uncommon for Arab nationalists to express their displeasure with Zionist settlement by burning JNF trees.<sup>68</sup> And then there was the direct impact of warfare. Even during the recent 2006 Lebanon War, over a million trees burned as firefighters scamped to squelch the flames set off by the thousands of Katyusha rockets. Today, in the early twenty-first century, as in the early twentieth century, the assault on the forests became a rallying cry for Zionist fundraisers. And thus, for over a century, planting trees became a supreme act of Zionist patriotism.

In the final analysis, in the inevitable clash between security and environmental values, it is no surprise that the environment comes out the loser. In this way Zionism and modern Israel are no different from most countries of the world. Yet when military conflict is such a relentless and central part of a country's national experience, the impact may be more pronounced. Recently, there has been an attempt to hold Israel's military to standards of environmental responsibility. Today's environmentalists do not hesitate to file suits about ground water contamination from government munitions plants or even raise questions about the ecological implications of the habitat fragmentation that the separation fence (which may demarcate an Israeli/Palestinian border) may cause.

But ultimately, the Zionist position has always seen environmental concerns as far less important than the issues of security and defense. Examples of security trumping ecology are commonplace: Israel's nature protection law does not apply in Israel's vast military training areas. The question of residues and disposal associated with nuclear weapons development has not found a place on any environmental organization's agenda. Any number of environmental omissions by the military—from noise nuisances to oil discharges by naval vessels—are generally forgiven. And the environmental impacts of bombardment are not part of the public discourse, even when the wisdom of a military action itself is questioned.

The second Zionist priority, immigration, has from the outset constituted a *raison d'être* of the Zionist movement. The ingathering of the exiles both saved Jews from physical and economic persecution and boosted efforts to establish a Jewish majority in Palestine. When the State of Israel was established, following the trauma of the Holocaust and the expulsion of Jews from Arab countries, immigrant absorption became a national obsession. At the same time a pro-natal

policy with powerful economic incentives for large families was put in place.<sup>69</sup> The results were geometric: In 1950 there were a million people in Israel; in 1960 roughly two million; in 1970 three million—and so forth until Israel's population surpassed seven million in 2006.

Population pressures have been a driver for any number of Israeli environmental problems, the most conspicuous of which is the disturbing loss of open spaces and habitat fragmentation created by increasingly land-intensive housing development. Israeli environmentalists, for the most part, have not been inclined to speak up about demographic issues, even though there is a quiet agreement that present densities may be unsustainable. As long as Arabs and Jews compete for numeric advantage (and religious and secular Jews remain highly aware of the electoral implications of their birth rates), Zionism's great success at filling up the land of Israel will have a deleterious ecological flip side.

Finally, employment was always a paramount public policy objective for Zionists, particularly as the British Mandate government justified its restrictions on immigration on the basis of economic carrying capacity. Quite literally, Zionism was faced with a situation where national independence was dependent upon the movement's ability to create jobs for newcomers. Much as Herzl had envisioned, industry offered the most promising prospects for rapid expansion of employment opportunities.

Industry in the Zionist sector was the engine behind Palestine's economic growth during the British Mandate. When Pinhas Ruttenberg, a Russian engineer turned politician, found himself on the wrong side of the 1917 Communist revolution, he moved to Israel. Ruttenberg immediately threw his considerable energies into creating the necessary electricity infrastructure for an industrialized Jewish state. The Naharhaim station was the first power plant he established during 1930s on the confluence of the Yarmoukh and Jordan rivers. The plant required a considerable realignment of the streams and rivers, along with dam, canal, and reservoir construction. Haifa and Tel Aviv facilities soon followed with electricity demand during the 1930s, increasing by 700 percent as the Zionist industrial base grew exponentially.<sup>70</sup>

Cement factories, potash works, textiles wineries, and a variety of other plants provided reasonably well-paying jobs for the new immigrants. (Although a distinct minority in the British Palestine, a 1939 survey showed that 79 percent of industrial workers in Palestine were Jewish. Factories in the Jewish sector provided 80 percent of local industrial output.) The industrial demands associated with World War II triggered another quantum leap forward for local industry. By the end of the war, industrial production in Palestine had increased 75 percent—more than 85 percent of which took place in the Jewish sector.

This industrial growth was a technological achievement that not only allowed for the Jewish immigration boom of the 1930s to take place, but also provided the jobs for a considerable percentage of Palestine's Jewish community. It is little wonder that Zionist leaders treated factories, production, and industrialization in general with reverence. (Ruttenberg, the industrial hero, not Ben-Gurion, was twice elected chairman of the Palestinian Jewish Community's National Council—

the internal governmental framework—before he died in 1943.) Given these dynamics, pollution control and modern environmental regulation were hardly on decision makers' radar screens during the British Mandate. In several industrial pockets, untreated effluent discharges and air emissions became a pernicious hazard.

Israel's environmental movement became active almost immediately after the War of Independence, but it only became concerned with urban environmental quality years later. Jewish industries in Palestine more or less operated with a regulatory *carte blanche*, and the policy changed little during the initial period of statehood. The Dead Sea potash works, Israel chemicals, and the Israel Oil Refineries were all government corporations that pursued profits with no environmental oversight to speak of. It would take decades and considerable epidemiological data before the Israeli Ministry of Environment began regulating the country's excessive industrial residuals or until "externalities" became part of Israel's economic discourse. Only recently has a new generation of Israeli environmental groups even considered the closing of polluting factories as an operational demand.<sup>71</sup>

## CONCLUSION

DESPITE AN INORDINATELY HEAVY defense burden and the absorption of millions of refugees, the Israeli economy that emerged from the Zionist experiment is very close to the creative and robust system of which Herzl dreamed. New salt- and drought-resistant crops, Epilady hair removal, ICQ software, missile defenses, and drip irrigation systems are just a few of modern Israel's high-tech equivalents to the Swiss watch technologies of the nineteenth century. Despite the undeniable influence of Romanticism, Zionism never showed even a modicum of discomfort, much less Luddite hostility toward technological progress. Nor was there a serious critique of the dehumanizing and polluting impacts of modern technologies.

Rather, a fierce technological optimism, along with a visceral "love of homeland"—has been at the heart of the Zionist environmental creed from the start and remains so to this day. The notion that human, and more specifically, Jewish application of technology can bring a blessing to the land of Israel is still largely accepted by local environmentalists and nonenvironmentalists alike. Prime Minister David Ben-Gurion's speech to the Knesset in 1962 summarizes what can be considered a synopsis of Zionism's environmental ethic. After extolling Israel's beautiful nature, trees, sea, and mountains the country's founding father explained: "I do not fear civilization and technology's domination of man and the landscape. We need these two things together."<sup>72</sup>

What has changed in the gradual evolution in Zionism's attitude toward the environment is the understanding of local ecological and environmental dynamics, natural resources and the limitations and their availability. There is no shortage of local experiments with technology that led to environmental destruction in Israel. The aforementioned draining of the Huleh wetlands in the upper Galilee, a natural nutrient sink, brought the Sea of Galilee to the brink of

Figures 4 and 5. Zionist Agriculture, 1926 (above) and 1997 (below).



Photo by Kotler.



Photo by Israel Sinay.

The survival of the Zionist, rural impulse is illustrated in these two photographs of Zionist agriculture.

eutrophication before a comprehensive watershed management strategy could be implemented to reduce nutrient loadings. Israel leads the world in wastewater reuse, with 72 percent of its treated sewage being utilized by farmers. The chemicals and salinity that remained in the effluents, however, have had a negative effect on groundwater quality and accelerated soil salinization. Many



of Israel's most successful petrochemical industries both in the Haifa Bay and the Negev have created egregious public health insults. A massive government poisoning campaign to control rabies during the 1950s decimated the surrounding food chain. The laundry list of mistakes is a long one indeed.

But the same confidence in science and technology that characterized Herzl's and subsequent Zionists' vision is starting to find positive manifestations in the environmental realm as Israel becomes a wealthier and more sophisticated society. Local fuel quality is now on par with that of Europe and cleaner than many U.S. states. A 2005 government decision upgraded sewage treatment standards, so that when the phase-in is complete, virtually all of Israel's effluents will be recycled with little anticipated environmental damage. A plan for kilometer-high "wind towers" may produce emission-free electricity, while the first major solar energy plant is currently under construction.

As this article opened with Herzl's fantasy of modern water management, it is well to consider the Zionist legacy in this realm. In January 2006, Israel opened the world's largest reverse osmosis desalination facility in the coastal city of Ashkelon. As early as the 1950s, Prime Minister, David Ben-Gurion called for massive investment in desalination technology. It would take another fifty years until his call would be taken seriously. Breakthroughs in membrane technologies and energy system efficiency led to a dramatic drop in price so that today water can be produced at a cost of just over fifty cents per cubic meter, or five cents a liter. The low costs led to a 2002 government decision to build four new reverse osmosis desalination plants over the coming years that will add an immediate 15 percent to current water supply. This is just a start. The water generated from the sea is the highest quality in the country, registering lower salinity levels than bottled water.<sup>73</sup>

Desalination is not without environmental impacts. There are some concerns about the potential concentration of brine along the coasts, loss of beach space, and of course the greenhouse gases that go along with the electricity demands. But Israel's environmental movement, which can be extremely testy and obstreperous, for the most part bought into the new initiative. If modern technology has led Israel into its present environmental crisis, presumably it also offers hope for extricating it and leading the Jewish state into a sustainable future.

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## NOTES

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2. Amos Elon, *Herzl* (New York: Schocken, 1985).
3. Theodor Herzl, *Old-New Land*, trans. Lotta Levensohn (New York: Bloch, 1960), 241.
4. *Ibid.*, 242.
5. Howard P. Segal, *Technological Utopianism in American Culture* (Chicago: University of Chicago Press, 1985).
6. *Ibid.*, 244.
7. Gregory Allen Barton, *Empire Forestry and the Origins of Environmentalism* (London: Cambridge University Press, 2002).
8. For example, see Robert Gottlieb, *Forcing the Spring: The Transformation of the American Environmental Movement* (Washington, DC: Island Press, 1993), 23-24; Philip Shabecoff, *A Fierce Green Fire: The U.S. Environmental Movement, Past and Present* (New York: Hill and Wang, 1993); and Richard Hammond and Thomas Curran, *Environmentalism and the Government* (Melbourne: Krieger, 2005). For nations such as Russia, a meaningful environmental discourse would emerge only decades later. See Douglas R. Weiner, *A Little Corner of Freedom: Russian Nature Protection from Stalin to Gorbachev* (Berkeley and Los Angeles: University of California Press, 1999).
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10. Alon Tal, *National Report of Israel, 2003-2005*, Submitted to the United Nations Convention to Combat Desertification (August 2006).
11. Alon Tal and Eilon Schwartz, "The Environmental Crises as a Function of Relationships Within Human Society," *Skira Chodshit* (June 1993): 38-39.
12. Avner De Shalit, "From the Political to the Objective: The Dialectics of Zionism and the Environment," *Environmental Politics* 4 (1995): 70-87.
13. *Ibid.*
14. Avner De Shalit, in his seminal piece, writes: "the ethos of development could follow the romantic attitude because both derived from the same source: anxiety. One reaction was to glorify the environment; the other was to seek to conquer it. ... In that sense, the ethos of development, with its more rational approach, was the antithesis needed in order to allow the synthesis to emerge, the latter being, of course, the modern scientifically-based and rational environmentalism." "From the Political to the Objective," *Environmental Politics*, 81.
15. David E. Nye, *American Technological Sublime* (Cambridge: MIT Press, 1994), xvi.
16. Leo Marx, *The Machine in the Garden, Technology and the Pastoral Ideal in America* (London: Oxford, 1977), 155-56.
17. Segal, *Technological Utopianism in American Culture*. Herzl's writing fits perfectly among the ideologues described by Segal who "vaunted technology as the means of bringing about utopia" (p. 101). These true believers "multiplied what they saw as the outstanding contemporary trend and predicted the greater and greater advance and spread of technology" (p. 211).
18. See, generally, Walter Laqueur, *The Changing Face of Anti-Semitism: From Ancient Times to the Present Day* (London: Oxford University Press, 2006); as well as Howard Sachar, *The Course of Modern Jewish History* (New York: Vintage, 1990).
19. Many Jewish leaders and commentators reached this conclusion apparently simultaneously. Among the most famous treatises to this end, beyond Herzl's own, are Moses Hess, *Rome and Jerusalem*; and Leo Pinsker's *Autoemancipation*, which are



- excerpted in Arthur Herzberg's comprehensive anthology, *The Zionist Idea* (New York: The Jewish Publication Society, 1997).
20. Walter Laqueur, *A History of Zionism* (New York: Taurisparke, 2003), 42.
  21. Alon Tal, *Pollution in a Promised Land* (Berkeley and Los Angeles: University of California Press, 2002), ch. 3, 35-68. See, also, Mark Twain's travel reports in *The Innocents Abroad* (New York: Oxford Press, 1996), 481-95; and H. B. Tristram, "The Land of Israel," *A Journal of Travels in Palestine* (London: Society for Promoting Christian Knowledge, 1866).
  22. Aaron Boneh, *Land of Israel and Its Economics* (in Hebrew) (Tel Aviv: Dvir Publishers, 1938) 81. See Tal, *Pollution in a Promised Land*, ch. 3.
  23. Herzl, *The Complete Diaries*, October 31, 1898.
  24. M. Ussishkin, *Voice of the Land* (in Hebrew) (Haifa, Yediot Ahronot, 1942), 57-58.
  25. Uzi Paz, *Eretz Ha Zvi V' Hayael* (Givataim, Masada, 1981).
  26. Theodor Herzl, "The Jewish State," in Herzberg, *The Zionist Idea*, 221.
  27. Derek Penslar, *Zionism and Technocracy: The Engineering of Jewish Settlement in Palestine 1870-1918* (Bloomington: Indiana University Press, 1991).
  28. Noah Efron, *Jews and Science in the Twentieth Century* (Hadley, NY: Greenfield Press, 2007), 205.
  29. Laqueur, *History of Zionism*, xxvi.
  30. Joel Cohen, "Human Population Grows Up," *Scientific American* 293, September 2005, 48-55.
  31. Laqueur, *History of Zionism*, 56.
  32. Ben Halpern and Jehuda Reinharz, *Zionism and the Creation of a New Society* (Hebrew translation) (Jerusalem: Shazar Center, 2000), 95.
  33. The Ottoman statistics suggest that in 1900 there was a population of roughly 600,000 people in Palestine, of whom 6 percent were Jews. This percentage soon began to rise. See Justin McCarthy, *The Population of Palestine* (New York: Columbia University Press, 1990).
  34. See, for example, the *Jewish Agency for Israel* web-site: "Zionism and Hityashvut: New Ideologies of Settlement," [www.jewishagency.org](http://www.jewishagency.org).
  35. Laqueur, *History of Zionism*, 465.
  36. Nahum Gross and Jacob Metser, "Public Finance in the Jewish Economy in Inter-war Palestine," *Research in Economic History II*, 1978, 120, as quoted in Penslar, *Zionism and Technocracy*, 188.
  37. As quoted in Penslar, *Zionism and Technocracy*, 89.
  38. Baruch Kimmerling and Joel Migdal, *Palestinians: The Making of a People* (New York: Free Press, 1993), 329.
  39. Walter Clay Lowdermilk, *Palestine—Land of Promise* (New York: Harper and Brothers).
  40. *Ibid.*, 6.
  41. *Ibid.*, 9.
  42. Yael Shoham and Ofra Sarig, *The National Water Carrier* (in Hebrew) (Sapir, Israel: Mekorot, 1995), 8, 11.
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  45. "Water Quality," *Environmental Quality in Israel, 1990-91*, vol. 17-18 (in Hebrew) (Jerusalem: Ministry of Environment, 1992), 269-70.
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61. Tal, *Pollution in a Promised Land*, ch. 4.
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