

▶ Cormorants at Achziv. Photo: Gidi Bettelheim



Open Space In Israel?

As pressures for building and development mount, government agencies and green bodies set out to preserve quality open spaces

Open space, or more accurately, the lack of it, looms high on the country's environmental agenda. In fact, open space may well be Israel's most important – and most threatened – resource. The transformation of Israel into one of the world's most densely populated countries has carried a heavy toll in terms of both quality of life and the environment. Green lungs as well as leisure and recreation areas have dwindled, penetration of rain into groundwater has been hampered, and natural and heritage values have been destroyed.

Under conditions of land scarcity and development pressures, planners have been forced to grapple with the question of which areas may be transformed into built-up areas and which should remain as open space. Since the loss of open space to development is an irreversible process, these decisions are of critical importance.

Open Vs. Built-Up Space: The Facts

In order to chart a path to the future, knowledge of the present is necessary. Therefore, an assessment of the distribution of built-up space was made

for 1998 based on aerial photographs and observations (Moti Kaplan *et al*). In parallel, a review of open space landscapes was conducted based on national master plans and a statistical analysis of agricultural areas by the Central Bureau of Statistics.

The results revealed that Israel's built-up area encompasses some 1,310 square kilometers or 6% of the land area of the country – some 80% for residential purposes in cities, suburbs and rural areas. However, population density is not evenly distributed and the built-up area is not efficiently utilized. In fact, some 80% of the population resides in half of the built up space while only 20% occupies the other half.

Open spaces – including nature reserves, national parks, landscape reserves, forests, riversides, agricultural areas and other spaces such as fallow fields – constitute some 94% of the total land area of the country.

However, only nature reserves, national parks and forests are protected by legislation or by statutory master plans. The rest of the country's open space – including agricultural areas and fallow fields – is either unprotected or minimally protected and therefore subject to constant pressure for development.

Open space may well be Israel's most threatened resource



Improving the environment and preserving open spaces



Preventing marine and water pollution and restoring rivers



Treating life-threatening hotspots

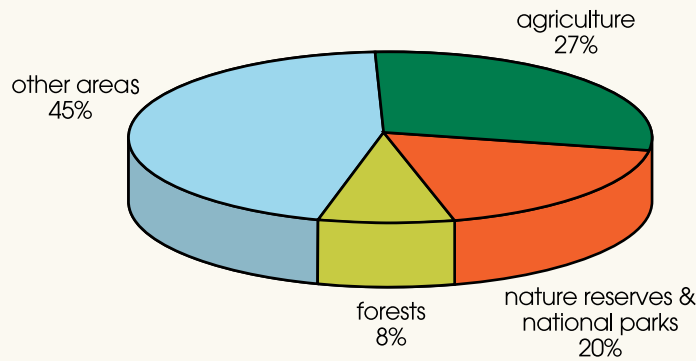


Treating municipal, industrial and agricultural waste

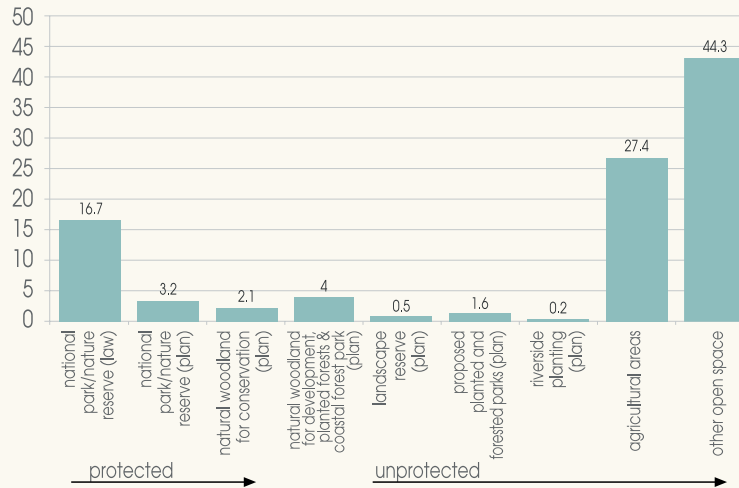


Developing tools for improving service and professionalism

Distribution of Open Space as Percent of Total Open Space in Israel (1998)



Open Space According to Percent and Level of Protection



Determining the Value of Open Spaces

Recognition of the growing threat to the country's open spaces has led Israel's green bodies to band together in a campaign to preserve open spaces. As part of the campaign, countrywide studies and surveys were conducted to assess the importance of open spaces in terms of their characteristics and intrinsic potential for a variety of functions.

Within the framework of Israel 2020, the non-statutory master plan for the 21st century, the Ministry of the Environment prepared open space sensitivity maps which classified and characterized open

spaces according to the following criteria: vulnerability, continuity and functionality. The integration of these criteria provided a basis for delineating the "value" of open spaces throughout the country. This methodology has been crucial in helping to direct development to areas with relatively low value while preserving high value open spaces and was implemented in the Integrated Master Plan for Building, Planning and Conservation (Plan 35) and in regional master plans.

From Surveys to Plans

In recent years, both governmental and green bodies have carried out comprehensive surveys on national and regional scales in order to identify open spaces worthy of preservation. On the basis of these surveys, policy proposals for conservation and sustainable development were prepared for areas such as the Jerusalem Hills and Judean Plain, the Negev and coastal sand areas.

Ecological Corridors as Conservation Tools:


Based on an ecosystem assessment of open natural landscapes, the Nature and

Parks Authority prepared recommendations for the protection of ecological corridors which provide conduits for the passage of animals and plants in a fragmented landscape and allow for the exchange of genetic material with neighboring populations. The assessment highlighted the importance of two rare and threatened ecosystems: aquatic ecosystems and the sand and kurkar rocks along the Mediterranean shoreline. It also recommended four major axes for protection as ecological corridors.

Open Space Survey: The National Board for Planning and Building commissioned an open space survey,

Facts to Remember

- Since its establishment in 1948 until today, Israel's population has increased more than eightfold – reaching 6.9 million in 2005.
- Average population growth in recent years is about 2%.
- More than 90% of the population resides in urban centers.
- Average population density reached 304 per square kilometer in 2004 – nearly 40% more than in 1990.
- By 2020, the population is expected to reach some 8.4 million and population density may reach 858 people per square kilometer north of Beersheba.
- By 2020, floor space per person in Israel is expected to reach 40 meters per person – double that today.
- In 1998, the built-up space in Israel totaled 1,300 square kilometers – 6% of the land area of the country.
- The most densely populated regions in Israel are Tel Aviv and Jerusalem. The most sparsely populated are the north and south.
- The Negev, in the south of the country, makes up about two-thirds of the total land area but only 2% of the built area.
- Out of 366 square kilometers of sand which existed along the coastal plain in the beginning of the 20th century, only 190 square kilometers remain, of which only 110 are undisturbed. Nearly half of the undisturbed sand is designated for development by national and regional plans.
- The national master plan for forests designates 1,620 square kilometers for forests – about 7% of the total area of the country.
- The national master plan for nature reserves and national parks designates more than 20% of the land area of the country for protected areas.
- Most of Israel's nature reserves are in the south of the country (covering nearly 20% of the Negev) and only 3% are in the Mediterranean area.

 Carmel landscape. Photo: Michal Ben-Shushan



- **1951:** Preparation of Israel's first physical plan, under the direction of architect Arie Sharon, which relates to development and population dispersal, but also to the allocation of land for nature reserves and parks.
- **1963:** Enactment of the National Parks and Nature Reserves Law (revised in 1992 and 1998 and 2004), which provides the legal framework for the conservation of the country's natural and cultural heritage.
- **1981:** Government approval of the National Master Plan for National Parks and Nature Reserves (Plan 8), which sets aside more than 20% of the land area of the country for conservation.
- **1990-1997:** Preparation of Israel 2020 – Israel's non-statutory master plan for the 21st century, which placed the issue of open space depletion on the national agenda.
- **1993:** Government approval of the National Master Plan for Building, Development and Immigrant Absorption (Plan 31), a five-year plan which allowed the absorption of a million immigrants from the former Soviet Union in the 1990s while providing for open space protection. The plan will remain valid until government approval of the National Master Plan for Building, Development and Conservation (Plan 35).
- **1996:** Approval of the National Master Plan for Afforestation (Plan 22), which protects 1,600 square kilometers of planted forests and natural woodlands.
- **1990s:** Preparation and approval of regional master plans, giving greater priority to conservation-worthy areas including rivers and their environs and metropolitan parks.
- **2004:** Enactment of the Law for the Protection of the Coastal Environment, aimed at protecting and preserving the Mediterranean coastal environment and its natural assets.
- **2004:** Initiation of a National Master Plan on Rivers and Drainage, highlighting the preservation and restoration of rivers and their vicinity for both ecological and recreational purposes.
- **2005:** Approval of the Integrated National Master Plan for Building, Development and Conservation (Plan 35) by the National Board for Planning and Building. The plan, initiated in the mid-1990s, gives equal weight to open spaces and to built spaces or areas designated for development. It divides the country into different "textures" and distinguishes between different levels of development worthy areas and conservation worthy areas.

Golan landscape.
Photo: Ilan Malester

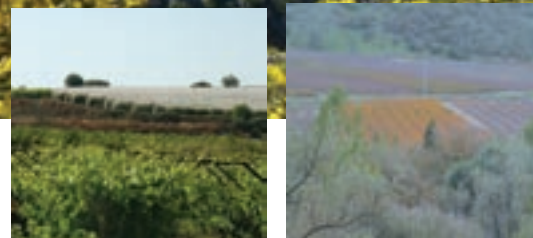


published in 2000, which provides information on precipitation, soil groups, rivers and watersheds, openspace with statutory protection, bird nesting and activity areas, and scenic routes. In parallel, it surveys factors that have an impact on the natural environment such as transportation, energy infrastructures, water, sewage and solid waste as well as the built environment.

Conservation and Sustainable Development of the Coastal Sand: The Ministry of the Environment, Nature and Parks Authority, Jewish National Fund, Society for the Protection of Nature and Hydrological Service published a policy document in 2003 on the preservation and sustainable development of coastal sand landscapes. Based on the classification of different blocks of coastal sand, planning principles were formulated.

The Rivers of Israel: Policy and Planning Principles: This policy paper, published in 2004 by the Ministry of the Environment, summarizes the experience of ten years of river planning and restoration in Israel along with the experience accumulated in other countries. The document emphasizes the place of rivers in national planning and their function as central axes in the open space system. Planning principles relate to the hydrological, ecological and social aspects of river restoration.

Preserving Open Spaces in Israel – Policy and Tools: This document, published in 2003 by the Society for the Protection of Nature, Nature and Parks Authority, Ministry of the Environment, Jewish National Fund and Planning Administration of the Ministry of the Interior, aims to define national policy and operational tools to preserve and use the country's open spaces in a sustainable manner, which ensures the needs of present and future generations while preserving nature, landscapes, environmental functions and human heritage. The document relates to economic, legislative, social, and other tools.



Alona landscape. Photo: Michal Ben-Shushan

Judean Plain Biosphere Reserve: This report, published in 2004 by the Ministry of the Interior, National Land Authority, Ministry of the Environment, Nature and Parks Authority and Jewish National Fund proposes a comprehensive plan for a biosphere reserve in the Judean Plain, a transition zone between the Judean mountains and the coastal plain and a boundary between the humid and the arid areas of the country. Planning guidelines determine development and conservation possibilities in each of the five zones which were delineated - a preserved core, a controlled core, a controlled buffer, an integrated buffer, and a transition zone.

On the Road Toward Implementation

When it was first established in 1948, some 850,000 people inhabited the State of Israel and population density was a mere 43 per square kilometer. The objective at the time was to "conquer the wilderness" or in the words of a popular song to "dress the land in concrete and cement."

Times have changed. Open spaces are no longer seen as mere reserves for development. They are beginning to be recognized as possessing their own intrinsic value. The objective among planners today is to preserve contiguous open belts alongside rivers from source to mouth, safeguard agricultural and rural landscapes, protect shorelines and develop parks and gardens for the benefit of the population. With the groundwork in place, the time for implementation has begun.



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MOTI KAPLAN ON OPEN SPACES

Environmental and Regional Planner

Why is the issue of open spaces so important?

It is our responsibility to leave open spaces for the benefit of future generations. Private interests, however legitimate, cannot rob future generations of their right to open space. Land, unlike any other resource, is irreplaceable. Demand will always exceed supply. Therefore, we have to be more tightfisted in our allocation of land for building and development.

At the same time, we must find ways to preserve quality open spaces. Fortunately, Israel's planning agencies understand this. It is now time for decision makers to understand this as well and not to allow the random dispersal of building and development.

How can we ensure that quality open spaces will be preserved for present and future generations?

Over the next two decades, some 60,000 hectares will be transformed from open space to built up space - in addition to the 130,000 hectares which are already built up. While this development is needed to meet the legitimate needs of the population, we must find ways to direct development to specific areas, such as the metropolitan area of Beersheba, while assuring that the urban population will enjoy all of the necessary services in terms of infrastructure, employment, education, and more. The idea is to preserve the continuity of our open spaces without fragmenting them. For this reason, planning should first concentrate on saturating existing urban entities and the areas directly adjacent to them. We have to relate to the urban fabric more seriously, to preserve and enhance what already exists rather than seek "quick fixes" to the problems of neglected and deteriorating urban spaces by destroying open spaces.

How can we revitalize our cities?

One of the things we are working on is the rehabilitation of urban rivers. Until now urban rivers were viewed as negative factors - infested with mosquitoes and wastes, associated with flooding and neglect. The idea is to highlight the enormous potential of urban rivers as green lungs which respond to the social, cultural and psychological needs of city residents. Rivers can improve the city image, provide a sense of belonging, draw investments and tourism, and provide a meeting and recreation point for residents. We must provide planners, city engineers and ecologists with the opportunity to bring nature into the city.



Alona landscape. Photo: Michal Ben-Shushan

What is Israel doing to preserve open spaces outside of urban areas?

One initiative, for example, relates to the preservation of agricultural areas, which make up the lion's share of open spaces in Israel. There is a lot of pressure to convert these areas into built up areas, but it is in the national interest to preserve our agricultural areas as much as possible. Fortunately, with the help of the Fund for the Advancement of Landscape and

Environmental Values in Israeli Agricultural Regions, surveys and research studies have been initiated which look beyond the economic aspect of agriculture to its landscape, visual, ecological and cultural value.

I am now working on the theoretical basis for the preservation of agricultural landscapes. The idea is to map and identify Israel's agricultural landscapes - wheat in the Negev, terraces in the Judean Mountains, vineyards in the north - and then to assess and value them in terms of their contribution to landscape, culture, tourism, etc. We have already identified some 20-30 agricultural forms which tell a local story and reflect different periods and cultures. Hopefully this will give legitimacy to the conservation of agricultural landscapes.

What is Israel doing to ensure that those areas identified as worthy of preservation will indeed be preserved?

The National Master Plan for Building, Development and Conservation identified a series of scenic open spaces which are especially worthy of preservation, which require the preparation of detailed plans. They include Bikat HaNadiv and its vicinity, the Shiqma River, the Ayalon River and the Poleg River.

I am currently working on the detailed plan for the Bikat HaNadiv region, situated between the metropolitan areas of Tel Aviv and Haifa. This is the first area for which a detailed plan is being formulated and as such will serve as a model for other preservation worthy areas. It was chosen due to the multitude of values which characterize it - agriculture, archaeology, sea, nature and prime location - all of which combine to make it especially susceptible to development pressures. The challenge is to determine land uses for this region which protect its unique features while allowing for controlled and balanced development.