



PLANNING
ADMINISTRATION



Maritime Policy

Maritime Policy for Israel's Mediterranean Waters

May 2020

From the Director General of the Israel Planning Administration:

I am honored to present the "Policy Document for Israel's Maritime Space ", March 2020, approved and adopted by the Committee for the Protection of the Coastal Environment.

The policy document summarizes a complex work led by the Planning Administration in recent years. The document was prepared by a multidisciplinary planning team in collaboration with government ministries and a wide range of stakeholders. The work is part of a current global movement of preparing plans and policy documents that regulate maritime space, placing Israel among the advanced countries in this field.

The document is unique and among the first in its field. It outlines policy guidelines for regulating maritime space in a thoughtful, efficient, balanced and sustainable manner, detailing the measures for anchoring and implementing the policy.

The preparation of the policy document included a survey of the current situation in Israel and a comparative international review. These formed the basis for formulating the policy document. These files are available on the Planning Administration's website at the following link: https://www.gov.il/he/Departments/General/policy_maritime

In the near future, the Planning Administration will begin to formulate a roadmap for implementing the policy document.

I would like to take this opportunity to thank Ronit Mazar, Senior Director of the National Planning Division at the Planning Administration, and all those who took part in formulating the document for their fruitful cooperation and for their contribution to the approval of the document.

Sincerely,



Dalit Zilber

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This document is an English translation of the Authorized Hebrew Policy Document: (available at https://www.gov.il/he/Departments/Guides/policy_suggest).



PLANNING
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Maritime Policy

Introduction

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Background

The prosperity and security of many nation states are related to the maritime space in their region. For several decades, maritime spaces have been undergoing a significant process of geopolitical and environmental change. Demographic growth and rising standard of living increase the pressure on the seabed to generate resources and facilitate a shift away from terrestrial resources to search for new resources away from land.

The discovery of new resources and the technological development that enables their production, intensify the economic importance of exclusive economic zones. In recent years, utilizations of maritime space have escalated for various purposes. This is due both to greater and growing demand for the uses and activities that have historically existed in the area, such as sports and recreation along with fishing and shipping, and as a result of the entrance of new key players on the scene; primarily the discovery of natural gas and the subsequent activities involved in gas production and treatment.

The increased pressures on maritime space and exploitation of its resources, consequently, increase the burden on the marine ecosystem. The maritime ecosystem provides critical services and functions as the basis for many maritime human activities. It hosts the habitats of various marine species and provides Ecosystem services such as: marine food stocks for fisheries and water for desalination, as well as, regulating services such as the recycling of fertilizers and the absorption of CO₂.

In the near future, it is expected that the State of Israel will be required to expand its human activities in maritime space across a wide range of fields: energy; infrastructure; research; education and marine sports; innovation; conservation of the marine environment; development of new economic sectors.

Shipping, security needs and gas and oil resources will continue to constitute the significant human pursuits at sea and serve as pillars in the planning of maritime space. Appropriate planning and management will enable to maximize the economic potential of maritime space while preserving the ecosystem and marine resources.

As the health of the natural marine environment has great relevance to man and to maritime economic activity, developing economic activity must be implemented under effective environmental monitoring and auditing; based on spatial and strategic approaches and on environmental policy for every sector operating at sea.

This state of circumstances in Israel, as in many other developed countries, has brought forth the necessity to formulate a policy for planning and management of maritime space.

The Planning Administration, responsible for determining the national planning policy, identified the need to formulate an integrated policy for the preservation and development of the maritime space. The Planning Administration was also chosen to be the official representative of the State of Israel in leading this policy, both internationally, in cooperation with the European Union and in dialogue with the neighboring Mediterranean



nations. The Planning Administration is active in initiating and formulating national policy, in preparing the policy document, and in cooperation with government ministries and interested parties.

With the increasing number of maritime service users compounded with rise in the demand for additional maritime space, conflicts between the various uses as well as between human activities and the marine ecosystems are increasing. The necessity to prepare a policy document for Israel's maritime space stems from the multiplicity of users and the rise in the volume of their activities, which leads to an increase in the quantity and intensity of conflicts. These can be broadly divided into two groups:

- **Conflict between users** - between the diverse human activities within the maritime space.
- **Conflict with the environment** - between human activity and the environment combined with the intensified pressure on ecosystems.

Israel's Maritime Policy IMP (integrated maritime policy) defines a national framework and the guidelines for identifying the conditions required for the development of blue growth of marine industries, while ensuring environmental monitoring and auditing and maintaining the health of the marine natural system.

The implementation of the policy document is expected to promote development and innovation at sea and to increase the certainty of investments in maritime space. This is accomplished through: defining regulations for activities, improving coordination, reducing spatial conflicts, and establishing a clear and professional management structure. Combined, these objectives create the conditions for the development of existing industries and of new enterprises.

"The Maritime Policy for Israel's Mediterranean Waters project " was conducted under the leadership of the Planning Administration, in cooperation with other government ministries and a wide range of additional stakeholders. The preparation of the Israeli policy document for maritime space is aligned with the global campaign for each country to formulate planning and management policies and plans of the maritime space within its boundaries.

In the Israeli context, the marine spatial planning is a direct continuation of the current planning policy, which was formulated in a number of stages: the process was launched with the approval of the National Outline Plan (NOP 13) in the 1980s and continued with the policy document for coastal waters (1999); outlining both a general comprehensive policy and specific policy measures (by field), while determining intervention levels by regions. In 2004, the Law for the Protection of the Coastal Environment defined the areas of the coastal environment, its importance and the principles for preserving it. In addition, it established the Committee for the Protection of the Coastal Environment. These plans primarily focused on the coastal environment and the interface between the sea and the coast; and did not extend to integrate the areas of Israel's sovereign territorial waters within the Mediterranean Sea.

The draft of the Marine Areas Law comprised of charters that incorporate existing international practice and international law with stipulated detailed arrangements regarding the rights and powers of the countries over adjoining marine areas worldwide. The statutes of international law on which the proposed law is established, are cemented in several multilateral international treaties on the subject, of which several charters have the force of customary law. Some of the charters are signed by the State of Israel and some have been ratified by it.

In the international context, cooperation between Mediterranean countries began in 1975; upon the adoption of the Mediterranean Action Plan in Barcelona, to which the State of Israel is an active partner. In 1978, Israel signed and ratified the Barcelona Convention for the Protection of the Coastal Environment in the Mediterranean, a regional convention for the protection of the marine environment; and further adopted the amendments that expanded its application to the coastal environment in 2005.

Planning and management of the Mediterranean Sea is implemented by a team of experts from the Integrated Maritime Policy in the Mediterranean (IMP-MED) project of the European Union. IMP-MED aspires to construct an integrated Mediterranean policy in order to support a process of dialogue and partnership between neighboring countries along the Mediterranean Sea.

Prior to the preparation of the Israeli policy document, a vision statement and policy goals were composed for maritime space. The process is spearheaded by the National Planning Division of the Planning Administration and was attended by multiple stakeholders involved in Israel's maritime space. The vision and goals were fully adopted in the policy document.

The policy document has two components:

The first component - is a policy document of the committee for the protection of the coastal environment for the maritime space under its authority, in accordance with the second appendix to the Planning and Building Law on the area of territorial waters. This part of the document has been approved by the committee for the protection of the coastal environment as a policy document which will outline its discretion in exercising its authority.

The second component - a comprehensive and complementary, forward looking vision for the maritime space, in the areas of territorial and economic waters.

The document includes a policy outlining the committee for the protection of the coastal environment's discretion in matters within its jurisdiction. In addition, the document includes proposals that cannot be implemented immediately, require legislative changes for their implementation, and that will be promoted in a separate legislative procedure according to law.



The vision statement for maritime space of Israel

Management and planning of Israel's maritime space as a dynamic and balanced environment, in a manner that will ensure effective coordination of the various uses and the realization of the economic and social potential alongside the preservation and protection of natural values, landscapes and heritage values.

- Create mechanisms to manage the maritime space under uncertain and changing environment
- Reduce conflict between the various uses in the maritime space (existing and future)
- Encourage sustainable economic development in the maritime space
- Relate to land and sea through a comprehensive approach to planning and management, and ensure a healthy and functioning ecosystem whilst preserving species, natural values and heritage
- Maintain Israel's internal and external security interests
- Strengthen international relations and cooperation in the maritime space to ensure regional stability and promote common regional interests
- Define the interfaces between different uses

The objective of the policy document

The policy document outlines measure for action in multiple fields, in order to regulate and manage the maritime space in an intelligent, efficient and sustainable manner. The document details the means for cementing the policy and its implementation. In the interim, after the policy document is approved and the recommendations are implemented, the management of the maritime space will be carried out in accordance with the principles outlined in the document.

The aim of the policy document for Israel's maritime space is to create a comprehensive administrative and planning framework for Israel's maritime space in the Mediterranean Sea, taking into consideration the dynamics of the marine environment and to enable the realization of the economic potential whilst protecting and conserving its natural value and intrinsic heritage.

The process of preparing the policy document

The preparation of the policy document consisted of two main stages:

- Stage 1 – a multidisciplinary analysis of the current status and a comparative international survey were conducted
- Stage 2 - defining the policy principles for regulation, planning and management



In the framework of stage 1 extensive and detailed information regarding Israel's maritime space was collected. This information was gathered and stored in a GIS database, the first of its kind. Concurrently, the "**Atlas of the Maritime Space**" was created. These sources constituted the basis for spatial analysis of the various interactions, conflicts and opportunities between the existing and planned uses and activities in the maritime space. Based on the spatial analysis, the main policy areas that comprise the policy document were identified.

As part of the second stage a strategy was formulated regarding a number of broad themes, including management, planning and blue growth. The strategy was formulated for each area independently, and for the maritime space as a whole. The policy document combines the utilization of two complementary mechanisms: spatial instruments, management tools and policy. In most areas, a mix of spatial and management tools is proposed, defined in accordance with the area's unique characteristics and needs. In areas which lack spatial characteristics, only management tools are offered.

The preparation of the document and the formulation of the policy were accompanied by a long and in-depth process involving stockholders and the general public. From the onset of the work process, "stakeholders" in the maritime space were identified to include: officials from ministries, government agencies, private sector entities, members of academia, associations and organizations dealing with the environment and society (NGO's), education, sports, culture and heritage, municipal authorities and the general public.

The process of public participation included numerous intensive days devoted to consulting with various stakeholders of marine areas. The consultation meetings were characterized by candid openness with emphasis placed on hearing all the speakers and covering all the topics. The purpose of the meetings was to compose a complete and comprehensive account of the themes related to maritime space. Significant information was collected during these sessions on key topics related to planning, challenges, opportunities and major conflicts in the maritime space.

Upon the completion of the current status review and its analysis, an open conference was held for the general public, in which the theme, international practices and core issues in the field of planning were presented. During the formulation process of the policy for Israel's maritime space, two multi-participant conferences were held. The first, was held for the participation of professionals involved in the maritime space including government ministries, social organizations and academic institutions that are members of the broad steering committee that guides the planning team.

The second session was arranged for the participation of the general public - people who strongly value the sea and its shores, including: students, fishermen, scientists, environmentalists, sailors, divers and more.

During this time, the process was also presented at a number of professional conferences in Israel and abroad. In addition, the planning information and explanatory notes on the



progress of the plan are presented in a sub-site that was opened on Planning Administration website.¹

The Planning Administration, in cooperation with the Ministry of Energy and the Ministry of Environmental Protection, has also established a virtual information center for maritime space; which coordinates and organizes the information regarding maritime space in all existing fields of knowledge. The website creates an accessible, up-to-date and multidisciplinary joint platform for information on the maritime space in Israel and the Mediterranean Sea for various actors operating in the marine environment². The Planning Administration works in cooperation with the European Union, and the website provides a great deal of information on the latest developments regarding various aspects related to research, conservation and development in the Mediterranean Sea.

Following the distribution of the draft policy document in October 2017, comments were submitted from all parties involved in the process - members of the editorial committee that closely accompanies the planning process, members of the broad steering committee, and the general public. In light of the various comments received, further meetings and discussions were held in order to clarify the issues that were raised.

The policy document is divided into five sections:

A. The first section - policy principles for management of the maritime space

Includes facets that allow the Israeli economy to maximize the benefits derived from this area, while maintaining the marine environment. This section relates to the following components: the management of maritime space; marine planning; national monitoring; management and information accessibility; professional training; and blue growth.

B. The second section - policy principles for activity in maritime space

Including policies and spatial uses and activities taking place in large areas without fixed component of development This section refers to the following activities and uses: security; shipping and commerce; leisure and recreation, education, marine sports; and fishing.

C. The third section - policy principles for development of maritime space

Including policies and spatial uses and activities that require a fixed area and establishing infrastructure and facilities for operational purposes. This refers to following uses and activities: infrastructure; marine and coastal structures; aquaculture; and hydro-carbon production.

¹ The sub-site on the Planning Administration website that displays the information on the policy document - http://www.iplan.gov.il/Pages/Maritime_space/policy.aspx

²The virtual information center for maritime space- <http://maritime.gov.il/Pages/HomePage.aspx>



D. The fourth section - policy principles for protection of environment and natural resources

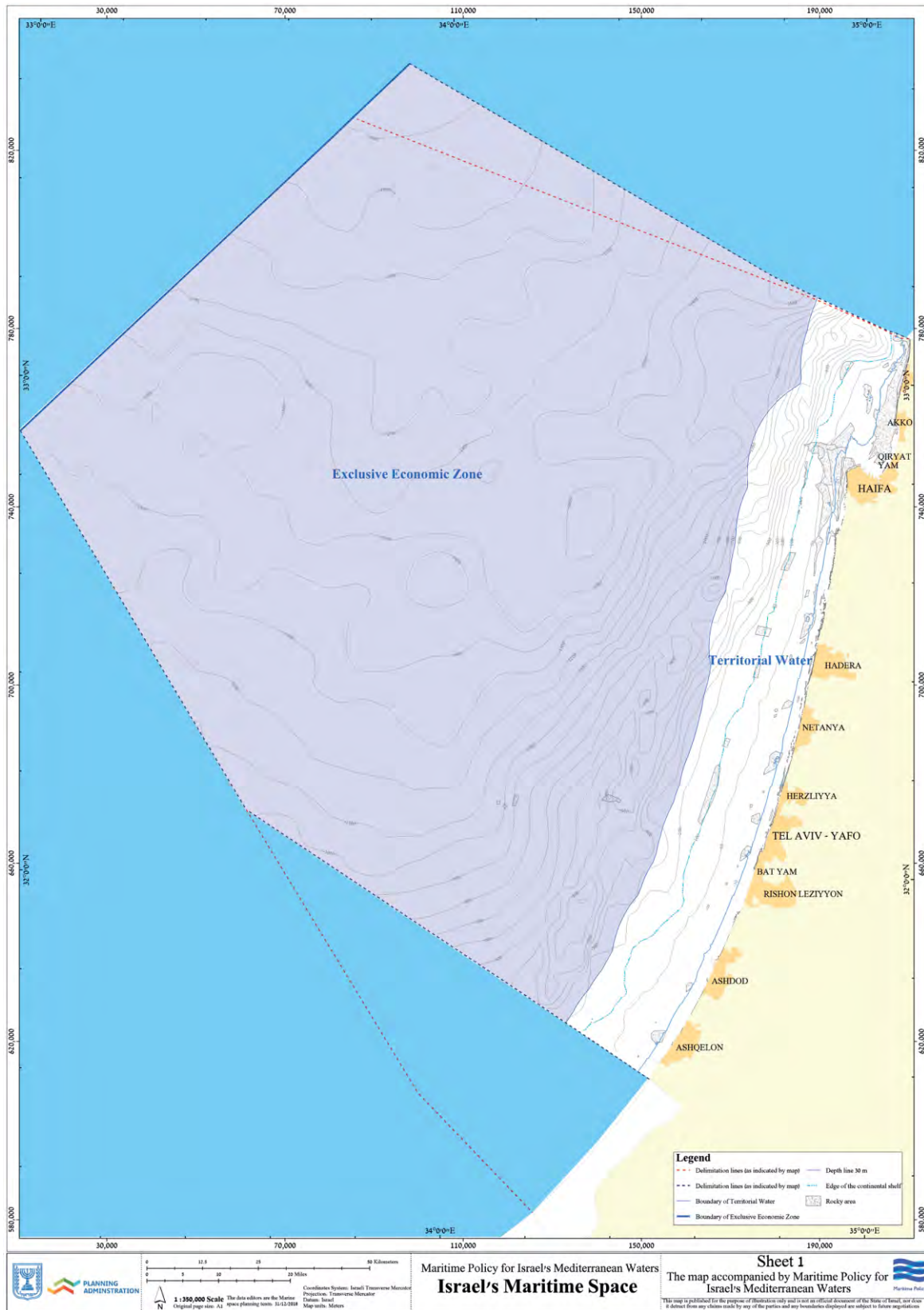
Includes policies and spatial aspects aimed at preserving the natural marine environment and its heritage values. This section relates to the following components: nature conservation; national reserves; antiquities and heritage; Sediment resources; and contending with sea pollution and its prevention.

E. The fifth section - a comprehensive spatial policy map

Including a detailed compilation of all uses, exploration areas, limitations, and additional spatial components in the existing and planned maritime areas. This section also includes thematic maps in accordance with the policies contained in the document.

The policy document concludes with attached appendixes. These appendixes are background documents and are not an integral part of the policy guidelines.

Figure 1: Israel's Maritime Space¹



Summary of Current Situation Analysis

The study and analysis of the existing situation in the maritime area included extensive information in many areas. Naturally, there are many interactions and reciprocal influences between the different fields. To contend with these relationships and the vast scope of information, the planning processes were divided into four main areas: the physical and environmental infrastructure, uses and users of the sea, cross-sectoral themes and non-statutory documents. These fields relate both to the existing infrastructure and to human activity in maritime space for creating a basis for making future decisions.

Documentation of the existing situation focuses on the activities and facilities in Israel's maritime space and along its coastline. It should be noted that although the subject of the work is maritime space (which until recently has not been independently planned), the analysis of the existing situation also included a detailed description of the coastline in relation to: environmental aspects and infrastructure; conservation areas; habitats; components of development; sedimentation; coastal structures; and coastal infrastructure installations connected to the sea.

The documentation also included a comprehensive statutory review of the coastline, drains, outlets, river effluents, tourism, sports and recreation, maritime education and more. Statutory approved facilities that have not yet been established, plans and policy documents that propose the development in various areas, were also presented. The analysis of the facilities includes references to all the existing marine structures, whether they were established within the framework of a statutory plan or by virtue of other legislation and regulations.

To ease the analysis of the large body of gathered information, the summary of Stage 1 was divided into four volumes:

1. **Volume A** - Summary volume, which presents the main points of the current situation analysis and includes four sections:
 - a) **Introduction** - Background, methodology, the work process, planning and management approaches, and international review. This section extensively reviews aspects related to international trends and practices with regard to themes related to maritime space, such as approaches to planning and management in maritime space and examples of parallel maritime planning processes (MSP) from around the world.
 - b) **First section: The Physical and Environmental Foundations** - This section presents the physical aspects, including the geographical-physical structure and the description of the natural marine environment in Israel's maritime space. It also describes the processes occurring in the maritime space, including: marine meteorology; physical oceanography; hydrodynamics; morphology; sedimentology, geology; natural hazards; major species and their distribution in space and time; rare and endangered species; threats and risks; knowledge and

monitoring. This section also deals with the human impact on the physical environment, and constitutes an essential basis for informed planning of all the human activities occurring in this area.

- c) **Second section:** Uses and Users of the Sea - aspects related to human uses and activities in the maritime space, such as: infrastructure; transportation and marine shipping; fishing and marine agriculture; security; sports and recreation; tourism; education; labor and marine training; Archeology and heritage.
- d) **Third section:** cross-sectoral themes - general aspects that have an impact on all services and users of maritime space, such as: geo-strategy; law and regulation; statutory analysis of coastline and sea; economics; environmental impacts; emergency preparedness; and management of the offshore sediment resource.
- e) **Fourth section:** Non-Statutory Documents - all past and present documents formulated on themes related to the maritime space.

2. **Volume B** - Atlas of Maps of The Maritime Space, contains a series of thematic maps at different resolutions, ranging from a scale of 1: 250,000 to a scale of 1: 10,000. The mapping is based on the extensive geographic data that was compiled during the Stage 1. This information relates to the various marine activities and values and is critically important for understanding the current and future situation, for identifying the various conflicts, and for recognizing the range of possible solutions.

3. **Volume C** - A complete analysis of the existing situation, detailing all the themes outlined in Volume A and incorporating aspects that emerged from in depth current situation analysis. This volume is also divided into four sections in identical format as the abridged volume A.

4. **Volume D** - Analysis of the interactions in the maritime space, the vision and the options. The volume includes five sections:

- In depth review of world literature on themes relevant to policy formulation, such as how to analyze the spatial aspects of plans for the maritime space in selected countries, the types of options, and strategies and measures to for policy administration and implementation. This review also served as a basis for defining the basic principles in the planning and management of the maritime space and for analyzing the spatial interaction between existing and proposed uses.
- A defined vision of maritime space based on the vision and the overarching goals jointly outlined by the various stakeholders in workshops held by the Planning Administration at a prior stage to the preparation of the policy document; and in accordance with the basic principles defined at this stage.

- Spatial analysis of interactions, conflicts and opportunities between existing and planned uses and activities in the maritime space.³ The objective of the analysis is to define and identify the main themes that will be examined in the policy document. The aim of spatial mapping is to identify opportunities and conflicts at the spatial level by cross-referencing different uses with each other, and cross-referencing different uses with the marine ecosystem. The interaction analysis was based on a primary analysis carried out by the planning team members, using two main tools: The first is the relationship matrix between marine users outlined in four types of interaction (opportunity, matching, conditional matching, and conflict). The second, a spatial analysis of these interactions in a series of maps, examining the interrelationships for each subject matter separately.
- Identification of the main themes that must be dealt with in the formulation of the spatial policy, in accordance with both the insights made evident in the current situation analysis and with the defined vision and the goals of the policy document.
- Formulation of conceptual alternative policy options based on literature review, definition of the vision and overarching goals of the policy document, as well as, the spatial analysis of interactions and the policy themes. Alternative options are proposed on two complimentary yet different levels: spatial options to development and conservation, and policy measure options adaptive to each of the spatial option. Upon the completion of the examination of the factors detailed above, it was found that the policy should be adapted to the existing variability in the maritime space. Accordingly, the policy document determines a level of detail and various policy tools for each topic. This difference is expressed both on the spatial level (between different areas in the sea), in relation to the various topics, and in relation to the time dimensions (short / intermediate / long term).

³ The interaction between the existing uses and components or those approved in detailed plans or proposed under thematic master plans (marine reserves and marine agriculture) was examined.

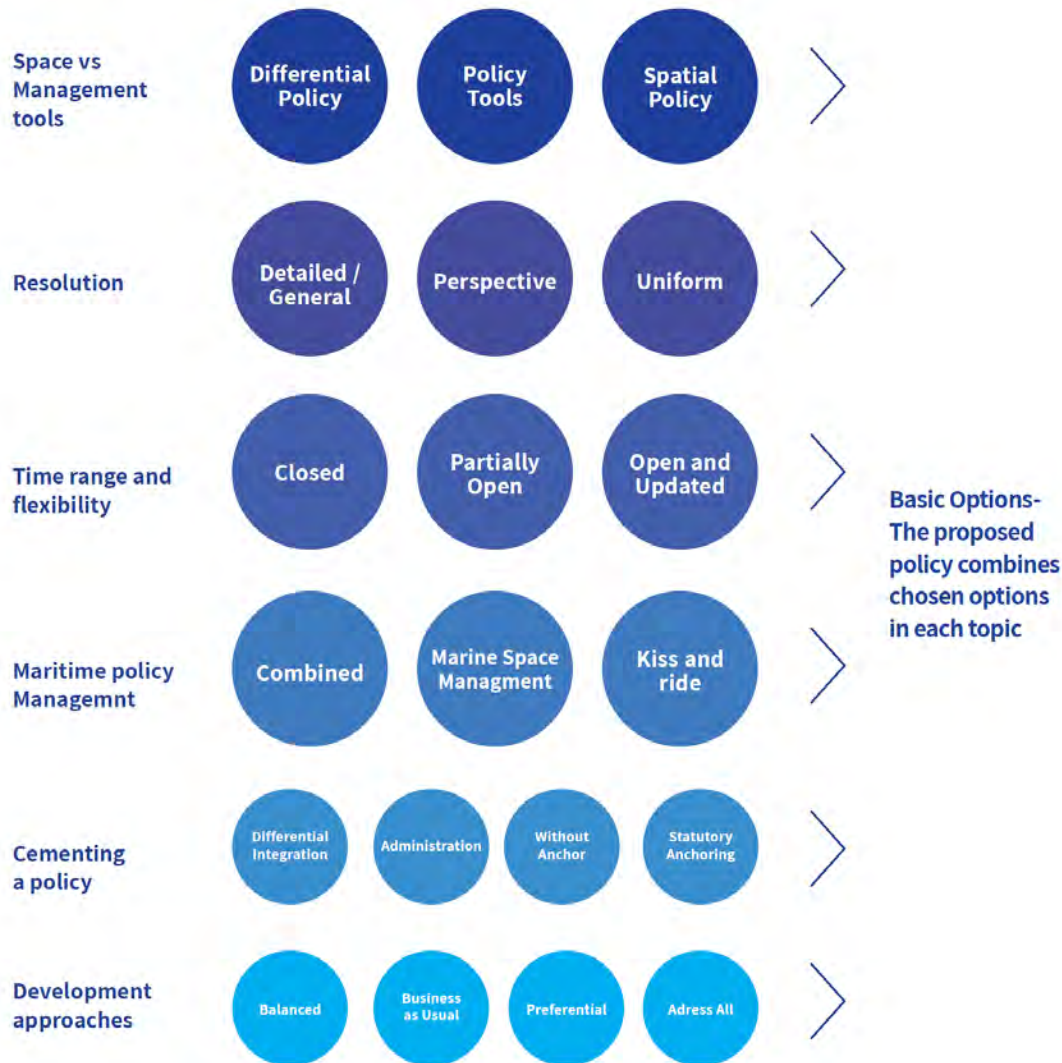


figure 2: Formulation of conceptual alternatives. The proposed policy combines chosen options in each topic

Full reports are available for review on the website of the Planning Administration.⁴ It should be noted, that the spatial information presented in the map atlas and the mapping of the interactions are correct to the point at which they were made, and have not been updated with regard to the changes that occurred in the maritime space following the preparation of the various maps. In general, all documents of Phase 1 are working documents and have undergone various alterations resulting from developments and changes that have occurred after their written date and in light of new insights emerging during the work process.

⁴ http://www.iplan.gov.il/Pages/Maritime_space/policy.aspx



The following are some examples of the outcomes of the spatial analysis of interactions. The interactions were divided into several categories:

	The two examined overlapping uses did not show any apparent interactions
	No match - conflict: the two uses cannot coexist in the same space.
	Conditional matching / Limitations: The two uses can coexist, with limitations on the manner of use, time of use or location
	A match between the two examined uses thus can coexist without setting conditions or limitations
√	Opportunity: The overlap between the two uses creates potential for one of them
	Pollution Potential: The use tested can result in possible impact on the marine ecosystem in the water column. Has been marked within the limits of the tested use because there is insufficient information to assess the range of impact

The spatial mapping was followed by a written analysis describing the interaction. The area of the lease does not represent the actual size of the area. The information presented is correct as of the time the map was prepared, and is not updated with regard to changes that occurred in the maritime space after the map was drawn up.

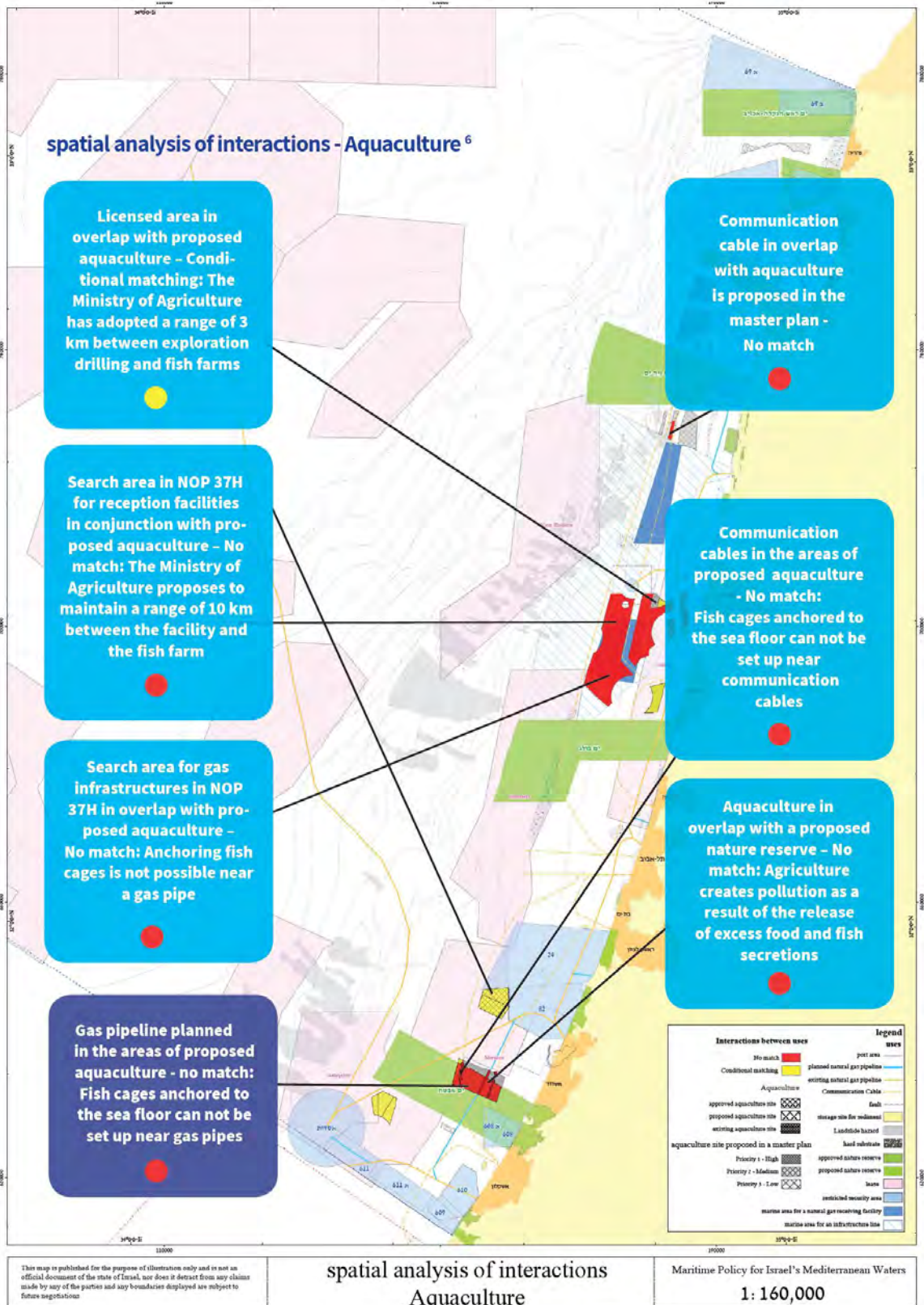


figure 3: spatial analysis of interactions - Aquaculture

Themes raised from current situation analysis

An analysis of the existing situation and of the interactions has raised a number of issues, which the proposed policy address.

1. The need for a comprehensive national view of the maritime space:

- a. The maritime space, is multidimensional and dynamic, and therefore, the policy must be adapted to its unique character.
- b. The maritime space is characterized by weak governance, in the absence of adequate coordination in the aspects of planning and implementation, and in the absence of coordination and pooling of resources in enforcement. Also, in a series of areas, there is a lack of an overarching vision and setting of priorities at the national-strategic level. This situation makes it difficult to realize the existing economic potential in the marine area and jeopardizes the functioning and health of the ecosystem.
- c. The maritime space lacks a comprehensive marine monitoring system in a variety of parameters. A monitoring system can provide reliable and accessible data. Such system is a necessary condition for developing various sectors of activity at sea and understanding the marine ecosystem and the changes occurring in it. The extent of the contribution and effectiveness of the monitoring to the different needs depends on the formulation of an overarching vision and on the monitoring system policy. These will be based on the needs identified by defined priorities regarding the type of space, time and monitoring. The monitoring system should also provide the data required to support detailed national policy formulation and the implementation of regulations on various issues at sea.
- d. The collection, transparency and integration of various types of data about the maritime space is essential for advancing development and research and for formulating an effective policy for the management of this area. Currently, information is collected by various bodies, and much of it is inaccessible to the general public, researchers and development factors.
- e. Shortage of marine sediment, in relation to the needs of the economy, is expected to develop a national problem later in the 21st century, given the expected increase in consumption of this vital resource. Marine sediment is a scarce resource and currently is not managed based on a comprehensive and long-term vision that can make the most of this resource while preserving marine and coastal environment.
- f. An adequate infrastructure is required for training personnel in the maritime professions of technological, engineering and marine environmental sciences. This framework is lacking, even though it is an essential



component in encouraging Israel's "blue growth". Its absence may become an obstacle for further development of the economic potential of the sea.

2. The need for planning and defining the system of rules for development and activity, with regard to all users of the maritime space:

- a. The definition of an agreed set of rules for all users at sea is a central component of maritime policy. It can be formulated using policy and spatial tools.
- b. From the mapping of all currently existing and approved uses,⁵ we can learn about the present-day density in the marine area, especially in territorial waters. This raises the need for regulating maritime space. It should be noted that although human activities have a greater impact on the shallow marine ecosystem along the shorelines, in recent years, human activity has further expanded outward, potentially impacting the open deep sea.
- c. Whenever interaction between stakeholders includes conflicts between users, the ability of the state to economically exploit marine resources is impaired. Such cases may endanger vital national infrastructures such as: ports; desalination; marine transportation; internet communications; energy production; etc. This reinforces the need to regulate maritime space and to formulate codes for user interactions. Since all marine resources cannot be expressed in precise economic terms, a "free market" mechanism cannot provide the solution to the required balance and therefore policy and regulation are needed for the maritime space.
- d. Alongside human activity, nature conservation has been identified as a central factor, requiring regulations for the interaction that nature conservation may have with other activities and uses at sea.

3. A comprehensive and unified framework providing the varied responses required to all activities and uses of the marine area:

- a. The maritime space is characterized by a multitude of uses and activities of various types, which operate for different periods of time and at different times, under different regulatory frameworks. These uses have a different effect on their environment. In light of this, there is a need to define a comprehensive framework for the various activities and uses.

⁵ The mapping of the requests and requirements of the various users of the marine area in their entirety reveals that in the erasing of overlapping areas (used by different users) the total demand for sovereign waters area is 3,240 square kilometers (81% of the area). The significance of the data is that in the event that the policy document anchors the entire range of desires and plans of the various stakeholders and interests at sea, without examining the degree of suitability or necessity, the space is insufficient.



- b. Some of the uses at sea already have relatively comprehensive and detailed regulations, such as the planning for natural gas reception facilities and the laying of the associated piping or the regulations relating to the construction and operation of desalination plants. On the other hand, there are areas where regulation is lacking or does not exist at all.

4. The need for a policy that prioritizes areas constituting the basic components of the national strategy for the maritime space:

- a. Geopolitically, the State of Israel "is an island nation" whose economic dependence on maritime trade is crucial. Approximately 99% of the volume of trade in Israel is carried out by sea. Israel's ports are within a day of sailing from the Suez Canal; a fact that expresses the potential for the expansion of docking activity in Israeli ports and their functioning as cargo ports.
- b. Hydro-carbon production is economically and strategically important to the State of Israel and has benefits in ensuring energy independence and in the environmental benefits of reducing air pollution.
- c. Security and protection of maritime space from threats to maritime infrastructures and to different sectors of activity, allows economic activity in the maritime space. Israel's dependence on shipping as the only gateway to the import and export of goods and fuels, together with dependence on natural gas as a major energy source, emphasizes the importance of maritime security and protection.
- d. Given the importance of shipping, hydrocarbon production, and security, and the need to ensure their future optimal functioning, these sectors are a dominant component of the policy document.

5. The need to protect natural resources and heritage

- a. The natural environment of the marine environment includes all the dimensions of the sea space (the seabed, the water column and the sea) and therefore interacts with all the marine users and activity, in at least one dimension.
- b. Some of the interactions with the natural environment have potential for regulation (by rules of action and by implementing considerate and sensitive planning to the environment); of which some are systemic and spatial, and others local or site specific in character and influence.
- c. Pollution of sea water poses a threat to desalination capacity, fishing and aquaculture, and the existence of tourism, sports and recreation activities at sea and seashores. The consequences of pollution are particularly severe given the geographical structure of the Mediterranean Sea and its ecological



sensitivity, as an enclosed sea; hence the commitment to reduce the pollution loads entering it. Maintaining the quality of sea water and preventing pollution from various sources is a fundamental principle in maritime space planning worldwide.

- d. The State of Israel does not have an overall policy for the preservation of the natural values of the marine environment, and the gap between the protection of natural resources in the marine environment and those on land is prominent.
- e. In the area of offshore activity, such as fishing, a policy is needed that signifies a shift from the traditional short-term approach of developing the fishing industry to maximize fish landings, to a long-term approach of restricted fishing to conserve marine fish stock and the natural environment.
- f. The antiquities and maritime heritage of Israel are considered cultural treasures of mankind and the State of Israel. They are of cultural, scientific, economic and touristic value. The findings of archaeological surveys show that the spatial distribution of important archaeological discoveries is not limited to land and shallow waters. Notwithstanding the aforementioned, and even though most of the ancient sites at the land and sea are known and recognized, only their terrestrial segments were secured in planning, while most of the maritime areas which contains antiquity, were left unprotected.

6. The need to strengthen the connection to the sea

- a. The maritime space is the only open border of the State of Israel, and it provides a variety of possibilities for recreation and leisure in a large open space, in a crowded country.
- b. It is possible to greatly benefit from activities that create an interface between the general public and the maritime space and increasing demand for them. Therefore, there is a cultural and public importance for creating the conditions for strengthening and expanding these activities. These activities include sports and maritime education, leisure and recreation activities, public activities for nature conservation, research, and conservation of heritage and archeology treasures, etc.
- c. Increasing awareness of the sea, with its various components, reinforces the attractiveness of marine studies and the training of professional personnel in the maritime professions, in the technological and engineering fields, in the shipping industry and in the field of marine environmental sciences. All of which, constitute an essential component of the blue growth process in Israel's maritime space.
- d. Interest in maritime education and sport is steadily rising. Nevertheless, the issue is not entirely managed at the national level, as some activities are



handled at the local municipal level. It appears that in the absence of national management and promotion of these areas the utilization of marine resource for public welfare is not optimal.

7. Response to terrestrial uses potentially hazardous or imposing restrictions on their environment

The increasing density on land, together with the growing exploitation of sea resources and the continuous improvement of engineering and marine environment technologies, will in the next decade increase the relevance of establishing marine platforms for infrastructure facilities in Israel. The establishment of offshore platforms for infrastructure installations at sea will reduce conflicts between national infrastructures and urban development in coastal population centers.



BASIC PRINCIPLES OF THE POLICY RELATING TO THE MARITIME SPACE

The policy is based on accepted current worldwide approaches to marine planning and management. These approaches are divided into policy and management approaches and conceptual approaches. These are not conflicting or competing approaches, but are complementary to the three necessary elements for planning and managing the maritime space: society, economics and the environment. These three elements of sustainable development and sustainable planning of the maritime space will ensure the coexisting of all interests through mutual empowerment.

The EU's "Blue Growth" initiative is a strategy for maximizing the economic potential of the sea. It is designed to support sustainable growth in the maritime space and marine sectors as a whole by investing in innovation and development; long-term planning; monitoring and evaluation; and sustainable resource utilization.

Included among the policy approaches are the Integrated Marine Policy (IMP) approach, the Marine Spatial Planning (MSP) approach and the Integrated Coastal Zone Management (ICZM) approach.

Perceptual approaches include the Ecosystem-Based Management approach (EBM) integrated with IMP and MSP approaches, the Ecosystem Services Approach, and the "Blue Growth" approach.⁶

The main principle on which the proposed policy is based is the creation of proper spatial and thematic balance between the various uses of the sea in a manner that will enable their optimal functioning alongside with the preservation of the ecological values of the marine environment. For this purpose, the policy should be based on interdisciplinary planning that integrates different fields of knowledge, while identifying the connections between them.

Underlying this concept is the recognition that effective use of the marine resource, of natural and economic values, requires the implementation of a comprehensive vision for maritime space, through a policy plan and management mechanisms that balance the diverse interests of the various stakeholders.

Another key principle is the cooperation of stakeholders in the maritime area, through adhering to their mode of operation in time and space, identifying their limitations, and understanding existing trends in their field.

Maritime space, having a dynamic character, experiences many changes, including frequent changes in needs and demand for its resources; thus, requiring the update of the management mechanism, monitor and control. Accordingly, the resulting plan will not be a closed policy plan but an interactive, living document that revises and amends itself in

⁶ The EU's "Blue Growth" initiative is a strategy for maximizing the economic potential of the sea. It is designed to support sustainable growth in the maritime space and marine sectors as a whole by investing in innovation and development; long-term planning; monitoring and evaluation; and sustainable resource utilization.



accordance with the amassed knowledge and experience from the management, control and monitoring mechanisms. The program will be updated according to technological changes, new knowledge, events and changes in national priorities.

The basic principles in the planning and management of maritime space are:

A. Multiple use of space

Maritime space is a unique, multidimensional environment characterized by multiple values, resources and uses; requiring to contend with many challenges and changing conditions of uncertainty. Development pressure, intensifying use density and a steady rise in conflicts raised the need to formulate a broad and integrative view of the maritime space, and emphasized the need for intelligent planning of this space and its balanced management. In accordance with this principle, effective utilization of the sea areas should be ensured, as far as possible.

This can be done by utilizing a multi-purpose use of the space and overlap users. The principle will be implemented using the multi-dimensionality of the sea-floor, water column and water surface. Another tool that enables overlapping at sea is a multi-purpose time line. The multi-purpose use of the marine areas will indicate preferred uses of special importance.

B. Precautionary Principle

The precautionary principle states that when there is a reasonable concern that human actions will cause serious long-term harm to human health or the integrity of the entire ecosystem in the long run, steps should be taken to prevent or reduce activity even when the information gaps do not allow for an accurate assessment of the extent of the damage. Since the effects of human activity on the marine environment are not fully known to us, and since the marine environment is dynamic, and therefore very vulnerable, the precautionary principle is particularly important to the sea. Its objective is to utilize the marine environment in a cautious manner and with the best possible means to prevent damage to the environment. The implementation of this principle cannot prevent the development of human activity due to the scientific uncertainty regarding its implications. Its purpose is to examine the expected effects and, to the extent that significant impacts are expected on the environment, try to prevent or reduce their damage.

C. Sustainable economic development

The sea is an important source of steadily growing varied economic activity. The sea and its economic resources are a broad platform for economic development, innovative in parts. Planning and managing the space in accordance with the "Blue Growth" approach will ensure continued economic development in the future, including by considering the range of resources and uses and ensuring the optimal location for each of them, while preventing negative effects on other uses.



D. "Marine sustainability", planning and management based on the needs of ecosystems

Natural marine systems are irreplaceable and must be protected in both the national and international contexts. Since the early 1990s, this principle has been established in international conventions, policy documents for marine areas of many countries, and in some countries also by legislation. Most human economic activity in the sea is based on the functioning of the marine ecosystem, and in order to support the realization of the economic benefits embodied in the sea, the marine ecosystem must be protected and adverse effects on the marine environment minimized.

It should be noted that harm to the health and stability of the marine environment means damage to the marine-related economic sectors.

The guiding principle of Ecosystem Based Management (EBM) is that the needs of ecosystems to remain healthy, productive and offer sustainable services dictate the management of human activity. This approach is not limited to the stabilization and preservation of ecosystems only. The approach is characterized by a broad view that incorporates all uses of marine resources and seeks to manage them collectively and in parallel to optimize their current and future utilization. An informed EBM approach requires multi-parameter monitoring to enable the understanding of the nature-based changes in the same context monitor man made changes.

E. Building with nature

This principle is based on the awareness that avoiding damaging marine areas of high environmental value and protecting reserve areas is not sufficient. According to this approach practical activities must also be taken in order to create a healthy and stable marine system. As such, the principle of "building with nature" promotes the utilization of development activities at sea as a 'lever' to improve and enhance the marine ecosystem by creating new or rehabilitating disturbed habitats.

F. Maritime Safety - Safety and prevention of risks in maritime space

The range and interaction of human and ecosystem-based activities taking place at sea create various risks for both man and the environment. Prevention, or at least a reduction, of these risks is a guiding principle of Maritime Safety planning and management of maritime space and it is expressed the following aspects:

- Navigational safety aspects
- Preparing for emergencies - both resulting from natural disasters (tsunamis) and marine pollution events
- Protection from pollution to maintain high quality of sea water
- Protection of coastal cliffs and beaches



- Protecting the security of the country in general and of essential infrastructures in the sea in particular
- Protection of natural values from pollution, destruction and damage

G. Raising awareness of the sea

Raising awareness and deepening knowledge of the sea, developing marine professions, and familiarity with areas related to its planning and management are important elements in achieving all planning objectives; including the utilization of the sea based economic resources while maintaining nature conservation goals. Tourism and leisure activities are additional means of strengthening the connection between the general public and the sea.

H. The sea as a public space and asset

The sea provides cultural and other services, such as recreation and leisure in nature; aesthetic, religious and spiritual values; educational activities; and scientific research. This principle includes the physical area itself, as well as the physical access to the sea and its shores and the open view of them. These are established in the Law for the Protection of the Coastal Environment, in NOP 13, in the National Outline Plan for Coast and more.

I. Resilience, initiative, and ongoing study as a response to planning under uncertainty

Maritime space is characterized by great uncertainty, and many parts of it are still within the realm of the unknown. Alongside the uncertainty and the information gaps regarding the environmental and physical conditions of the maritime space, the rate of utilization of sea resources is increasing, and is expected to escalate as a result of the land shortage, gas discoveries in the sea and other potential undiscovered natural marine resources. In order to formulate a policy under these conditions, a living document is needed to meet changing human needs while preserving natural marine resources in a manner that will ensure sustainable development; that is a policy that requires resilience and initiative.



Implementation and updating of the policy document for the maritime space

a. Implementation of the policy document

The Planning Administration will promote a decision-making proposal for the establishment of an Inter-ministerial Steering Committee for Maritime Space, headed by the Director of the Planning Administration, who will act through a professional branch of the Planning Administration for the arrangement and coordination in the maritime space. For more information, see the chapter on arrangement and coordination in the maritime space, in the first volume of this document.

The Inter-ministerial Steering Committee for Maritime Space will work to implement and update the policy document, among other things in aspects of legislative changes, as well as to formulate policy in other maritime spaces in Israel.

Until the establishment of the Inter-ministerial Committee on Maritime Space, the Planning Administration will consolidate the monitoring and review of the policy document implementations.

b. Updating the policy document

Maritime space is characterized by the great dynamics of the various aspects of changes in user activity patterns, the introduction of new sectors, the development of knowledge and physical changes, along with a very low degree of planning certainty. This dynamism, together with the importance of an updated national policy relevant to the maritime space, requires that the policy be updated and accurate at least once every 5 years, as is customary in many countries around the world.

The policy will be updated in accordance with new knowledge and experience that will accumulate from the mechanisms of arrangement, supervision and monitoring, and in accordance with technological changes, new needs, and changes in national priorities. Until the establishment of the Inter-ministerial Committee on Maritime Space, the Planning Administration will promote the updating of the policy, as necessary.

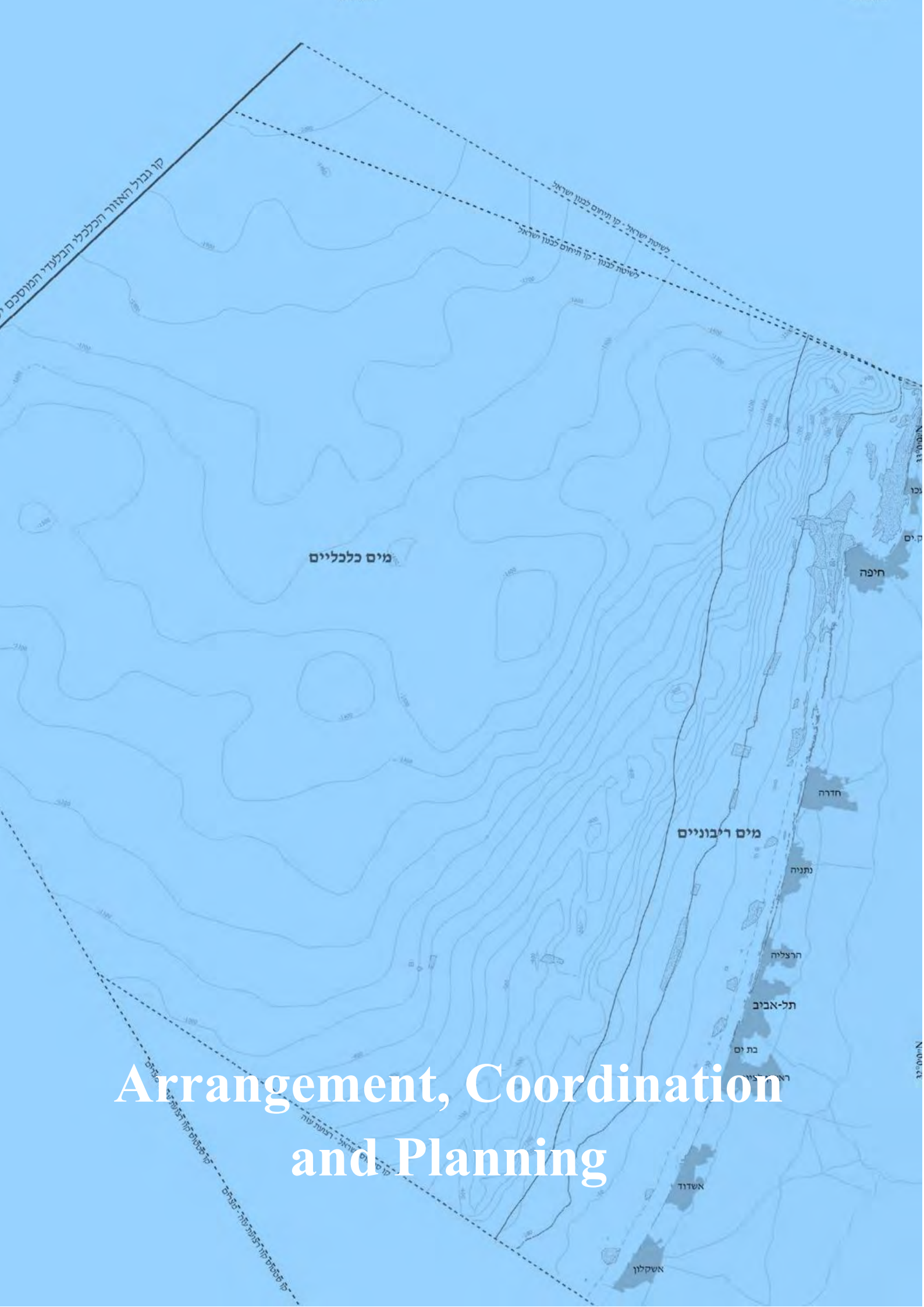


PLANNING
ADMINISTRATION



Maritime Policy

1ST SECTION | Arrangement of the Maritime Space



קו גבול האזור הכלכלי הבלעדי המוסכם

לשוטת ישראל - קו תחום לבנון ישראל
לשוטת לבנון - קו תחום לבנון ישראל

מים כלכליים

מים ריבוניים

חיפה

חדרה

נתניה

הרצליה

תל-אביב

בת ים

אשדוד

אשקלון

Arrangement, Coordination and Planning

קו תחום המים הכלכליים
קו תחום המים הריבוניים

רשות עיר - ישראל

קו תחום המים הכלכליים
קו תחום המים הריבוניים

Arrangement of the Maritime Space | Arrangement, Coordination and Planning

The policy document for Israel's maritime space, akin to policy documents prepared in various countries in accordance to the MSP / IMP methodology, is required for the arrangement of the rules and interactions between the various users at sea to achieve two main objectives:

1. The efficient utilization of Israel's maritime space resources through the arrangement of the regulations for the activity of the various bodies operating at sea, among others, for the benefit of the national economy and the public.
2. The arrangement of the interactions between the various bodies operating at sea and the required protection of the marine environment and its components, as a foundation for sustainable use of marine resources.

An analysis of the current situation emphasized that, contrary to what is customary in many countries, Israel lacks a central body responsible for the arrangement and coordination of its maritime space. The authorized statutory bodies in Israel (government ministries, statutory and local authorities) hold different powers and responsibilities in the maritime space and demonstrate a different level of involvement and governance in each area. Furthermore, in the absence of a central body or forum, there is a relatively low level of coordination between the various branches of government, between themselves and with the private sector. Respectively, in contrast to the situation on land, there is an absence of a comprehensive arrangement for planning in maritime space. The two aspects of the arrangement, and coordination / planning in the maritime space are the main core issues of the policy document and run as a secondary thread through the policy chapters to the maritime space.

Arrangement and coordination in the maritime space

1. Overview

The analysis of the current situation stage of the policy document raised a number of key challenges related to the arrangement and coordination in the maritime space.

- **Creating an efficient arrangement and increasing the coordination** between stakeholders at sea, in order to improve the potential utilization of marine resources for the benefit of the Israeli economy and the preservation of its natural resources.
- **Formulating a comprehensive national vision** in every area of activity, with the aim of reducing conflicts between users and realizing the potential of marine resources.
- **Defining national priorities** in the investment of resources and additional aspects.

- Significant improvement in the **governance and enforcement** capacity of national laws at sea.
- Expanding **the scientific knowledge base**, centralized collection of marine data, establishment of a national monitoring system (established in the interim) and making information accessible to consumers in a manner that will support the development, planning and arrangement of maritime space.
- **Conservation of natural resources** as a basis for a clean and healthy marine environment that provides ecosystem services to a variety of sectors operating at sea.
- The need for a comprehensive vision of the **marine sand resource**, a resource whose efficient and careful utilization is a key component in the future development of the marine and coastal space and in aspects of conserving the natural environment.
- Improving **maritime vocational training** in a manner that will support the development of the blue economy, marine infrastructure, and the protection of the marine environment.
- The need for a comprehensive vision for the planning and arrangement of **marine infrastructure lines**, which are the responsibility of various government ministries.
- Encouraging **innovation**, research, and economic development.
- **Making maritime space accessible to the public** through an effective arrangement of water sports and maritime education activities.

An analysis of the current situation revealed that a number of issues in the maritime space are well arranged within a comprehensive view of the entire maritime space, certain matters are arranged in a decentralized manner by various bodies and their coordination and handling should be streamlined, while other matters do not fall under any responsible authority. In terms of coordination between government entities operating at sea, it was also found that in some cases successful partnerships have developed between different entities, but there are also many cases lacking cooperation and coordination between government entities or with the private sector operating at sea.

Overcoming arrangement and coordination challenges in the maritime space is feasible in the following three manners; 1) through the establishment of a coordinating entity that will rely on a professional body; 2) through improvements in the activities of existing statutory bodies; or 3) through a combination of both (improvements in existing bodies with the newly established entity). These challenges and the various possible ways in dealing with them formed, among other things, the basis for defining the alternatives of arrangement and coordination.

2. Options for the arrangement of maritime space

The deliberation on the matter of the arrangement of maritime space was the main discussion throughout the process of formulating the policy document for maritime space. During the preparation of the policy document, four main alternatives for arranging maritime space emerged:

a) **Emphasis on management - establishment of a new central administrative statutory body - the Maritime Authority:**

Establishment of a statutory authority with an emphasis on the management of the entire maritime space. The Maritime Authority will rely on a professional mechanism, consolidate policy formulation, and address issues of management, coordination, and overall vision of the maritime space in a variety of areas; as a basis for blue growth, research and development, innovation and improving Israel's competitiveness with developed countries. The Maritime Authority will centralize an enforcement infrastructure in the maritime space which it will operate to improve governance and enforcement at sea.

b) **Emphasis on coordination and policy - establishment of a new body, the Maritime Council:**

Establishment of a council with an emphasis on coordination and inclusion in the maritime space. The activities of the Maritime Council will rely on a professional staff in the Planning Administration and will include representatives of government bodies and other stakeholders for coordination and collaboration. The Maritime Council will work to implement the maritime space policy as defined in this document.

Composition of the Maritime Council: Planning Administration (Chairman), Ministry of Energy, Ministry of Environmental Protection, Ministry of Transport (Port Administration), Ministry of Defense, Ministry of Agriculture, Ministry of Communications, Ministry of Tourism, Ministry of Justice, Prime Minister's Office, Ministry of Foreign Affairs, Ministry of Culture and Sports, Ministry of Communications, representative of local government / Ministry of the Interior, Nature and Parks Authority, the umbrella organization for Israel's environmental organizations, Survey of Israel - SOI (observer), a representative from academia who deals with research and multidisciplinary policy in maritime space (observer).

c) **Emphasis on coordination - the establishment of an Inter-ministerial Steering Committee:**

In this alternative, the planning administration will professionally manage and coordinate the work of an Inter-ministerial Steering Committee. The work of the steering committee will rely on the expertise of the planning administration. The Inter-ministerial Steering Committee will coordinate the users of the maritime space, implement and update the maritime space policy document in a manner that

will increase the efficiency and enable development along with the preservation of the marine environment. The establishment of the Inter-ministerial Steering Committee does not require changes in regulatory powers. The Inter-ministerial Steering Committee does not infringe on the overall regulatory authority of the various government ministries.

Composition of the Inter-ministerial Committee - Planning Administration (Chairman of the Committee), Prime Minister's Office, Ministry of Defense, Ministry of Energy, Representative of the Director of Natural Resources or the Water Authority, Ministry of Environmental Protection, Nature and Parks Authority, Ministry of Transport, Ministry of Agriculture, 2 local government representatives (municipality and regional council), the Ministry of Housing, a representative of the umbrella organization for Israel's environmental organizations and other representatives who will be invited to discussions as needed and as determined by the government.

d) Without a change in the existing structure of powers:

In this alternative, the existing bodies will work to carry out the necessary actions and reforms defined in the framework of this policy document, each in its own field, without formulating an overall national vision. This alternative is based on improving the activity of existing bodies and dividing the responsibility on matters that are not regulated among the existing bodies. Coordination between entities operating at sea will be conducted on a specific basis and as needed. Monitoring the implementation of the policy document will be carried out by each body independently.

The table below presents the responses to key challenges related to arrangement and coordination in the maritime space, in accordance with the four alternatives listed above:

Issue	Maritime Authority	Maritime Council	Inter-ministerial steering committee	Current situation
The proposed structure for arranging maritime space	Establishment of a statutory “Maritime Authority”	Establishment of the “Maritime Council”	Establishment of an Inter-ministerial Steering Committee without changes to regulatory powers	Unchanged
Type of arrangement	Professional statutory authority, part of a comprehensive national vision	Emphasis on coordinating the state entities and other users, part of a comprehensive national vision	Emphasis on coordinating the state entities and other users, part of a comprehensive national vision	Each entity within its specific authority and responsibilities
Professional support mechanism to implement the policy	Professional body in the Maritime Authority	Planning Administration	Planning Administration	Each entity within its specific authority and responsibilities
Formulation of a national policy and monitoring its implementation	Responsibility of the Maritime Authority	Responsibility of the Maritime Council	Inter-ministerial Steering Committee	In accordance with existing authorities and the proposed Bill relating to Maritime Areas
Authority regarding natural gas and oil, shipping, security and the environment	Unchanged			
Governance and enforcement	Establishment of a central enforcement platform	Streamlining and promoting enforcement through coordination, pooling of resources and		Each entity will carry out the necessary enforcement

		cooperation between branches of the government	in its area of authority
The Array of marine infrastructure lines and cables	Systemic coordination of the infrastructure lines throughout the maritime space together with the competent bodies		Every infrastructure entity in its area or with specific coordination for each line
Marine sand resource management	Formulation of a national policy and resource management in coordination with the competent authorities		According to the existing authorities: Mining Commissioner and Israel Land Authority
Blue Growth	Consolidation of powers to promote blue growth	Promoting blue growth through coordination and the creation of supportive regulation	Every entity in its domain of activity and authority will promote blue growth
National Marine Database	In coordination with all bodies involved in the collection of marine data - on the basis of a meta-database shared by the Ministries of Finance, Energy, and Environmental Protection, consolidation of a unified national marine database that will form the basis for planning, development and conservation of maritime space		The information will be stored within the framework of the number of databases that currently exist with different rules for information sharing, without uniformity in the data collection rules
National monitoring system	A national mechanism for monitoring maritime space has been established and budgeted		
professional training	Establishing training programs and coordination between academic institutions	Coordination between the entities engaged in professional training to	Each institute within its domain

		advance a response to the future needs of Israel at sea	according to the requirements and demand in its field
Increasing the bond and connection of the public to the sea - education and water sports	Formulation of a national policy for the various education and water sports activities and its implementation	Coordination of activities between the various bodies, recommendations for structural changes and allocation of budgets to streamline and strengthen activities	Unchanged, education and sports activities will remain distributed among the various entities
Promoting innovation, marine technological development, research and development and research at sea	Creating the conditions for the development of blue growth, innovation and development of marine technologies, support for research and development and experimental economic ventures in the maritime space	Promoting policies for the implementation of the blue economy, coordination between the bodies engaged in research, encouraging entrepreneurship, etc.	Partial response within the existing institutions

Following a lengthy process of examining alternatives and coordination with key stakeholders, the Committee for the Protection of the Coastal Environment recommended the alternative of establishing an Inter-ministerial Steering Committee under the management of the Planning Administration.⁷

3. The Inter-ministerial Steering Committee

The Inter-ministerial Steering Committee will work to coordinate and implement the maritime policy document, inter alia, on the following issues:

- **Formulation of a strategic and long-term policy** for the maritime space, including updating the policy document for the maritime space, monitoring the implementation of the policy and recommending legislative updates.
- **Enforcement at sea** - coordinating enforcement activities at sea, promoting cooperation, pooling resources and formulating agreed goals in a manner that will enable a significant improvement in the ability to enforce and govern in the maritime space.
- **Coordination of maritime activities and mediation of engineering conflicts** related to maritime activities.

⁷ See the Committee for the Protection of the Coastal Environment decision of 31.7.2019

- **Arrangement of the marine sand resource utilization** - formulating a policy to marine sand resource that will enable efficient, sustainable and long-term utilization of the resource, in coordination with the authorized bodies, including: Planning Administration, Natural Resources Director at the Ministry of Energy, Ministry of Environmental Protection and Israel Land Authority.
- **Promotion of maritime training in the marine professions** - coordination and guidance of maritime training activities and programs for the creation of professional manpower, in collaboration with the Ministry of Education, the Port Authority, and the Council for Higher Education.
- **Marine sports and education** (excluding military-oriented education) - Formulation of a national policy for the various education and water sports activities and promotion of its implementation in order to strengthen the diversity of the activities and accessibility of the public to the sea.
- **Promoting the establishment of a unified national maritime** database, based on a meta-database shared by the Ministries of Finance, Energy, and Environmental Protection, in coordination with all government and research bodies.
- Promoting and coordinating support for research and development and economic projects in the maritime space.
- **Marine infrastructure lines** - systemic coordination between the authorized bodies regarding the various infrastructure lines in the entire maritime space.
- **Encouraging** innovation and development of marine technologies.
- Promoting the topic of **assessments for climate change** in the maritime space and for changes in sea level.
- Promoting the documentation and care of **historical heritage sites** at sea which are not antiquities sites (for example, illegal immigrant ships, iron piers).
- Additional issues to be required in the future, subject to coordination with the government ministry / relevant body.

Planning the Maritime Space

1. Overview

The policy guidelines for planning are based on a number of key insights that emerged from the analysis of the existing situation:

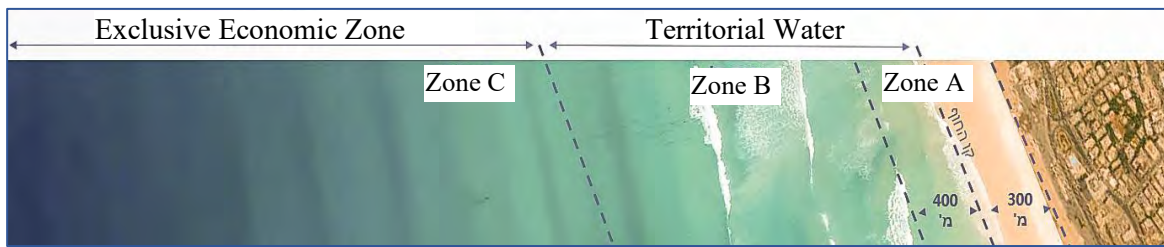
- The growing needs of the various users in the marine area require an overall perspective for planning Initiatives in the maritime space, which will allow coordination and overlap between different users.
- In the territorial waters, where the Planning and Construction Law applies, operations have been carried out without coordination with the planning institutions and may restrict future development in the maritime space.
- In the exclusive economic zone, in accordance to the Planning and Construction Law, no planning process is carried out, with the exceptional case of gas and oil drilling (a statutory procedure under the Oil Law). In addition, there is a lack of a comprehensive planning vision.
- Throughout the maritime space, specific and thematic plans are approved without a comprehensive and long-term planning vision of the maritime space.
- Unique knowledge, maritime expertise and oversight and enforcement capabilities are required to handle marine projects; these capacities should preferably be coordinated under one entity.
- The planning process derived from the provisions of the Planning and Construction Law aims to respond to terrestrial planning and as such, requires adaptation to marine planning, which is multidimensional with key issues of an engineering and environmental nature.

2. Policy guidelines for planning Israel's maritime space in the Mediterranean Sea

2.1. Policy guidelines for planning at sea distinguish three marine planning areas:

- **Area A** - the coastal zone: 300 m from the coastline to the east (the eastern boundary of the coastal environment according to the Coastal Environment Conservation Law) and 400 m west into the sea, **or up to the local authority's jurisdiction (whichever is furthest).**
- **Area B** - Israel's territorial waters (excluding the coastal zone) - 400 m west of the coastline and up to 12 nautical miles offshore.
- **Area C** - the exclusive economic zone sector.

figure 4: Marine Planning Areas



2.2. The area of territorial waters

2.2.1. In Area A - the authority of the Committee for the Protection of the Coastal Environment, the local committees and the district committees will remain unchanged.

2.2.2. In Area B - the authority of the Committee for the Protection of the Coastal Environment will be expanded so that it can also initiate, discuss, approve, and license offshore plans:

- a. An expert in the field of marine environment appointed by the Minister of Finance in consultation with the Ministry of Environmental Protection will join the Committee for the Protection of the Coastal Environment.
- b. The Committee for the Protection of the Coastal Environment will discuss a "marine plan" that will adapt the appropriate process, structure, and components for marine planning (as opposed to a terrestrial plan).
- c. The Committee for the Protection of the Coastal Environment will also discuss and approve plans for communication cable-lines that are promoted under the Communications Law.
- d. When initiating a plan within the maritime space, selection will be possible between a national outline plan or of a national infrastructure plan, as it exists currently, and a marine plan - with the approval and licensing under the extended authority of the Committee for the Protection of the Coastal Environment.
- e. The existing mechanism for appealing against decisions of the Committee for the Protection of the Coastal Environment will remain in place and will also apply to its decisions under its extended authority.
- f. The extended authority of the Committee for the Protection of the Coastal Environment will also include Area A and east of it when considering plans for linear infrastructure components (infrastructure lines and their associated facilities), which either enter or extend out from the sea.
- g. Maritime planning will also rely, among other things, on the work of the Survey of Israel, which has completed a process of determining cadastral units in the territorial waters.

2.2.3. Approval of plans for security facilities

- a. The authority to approve security facilities is in accordance with Chapter F of the Planning and Construction Law. During the planning process of a maritime security facility, a consultation will be held with the Committee for the Protection of the Coastal Environment.
- b. The approval process of maritime plans for security facilities will address to the principles and policy guideline in this document.

2.3. In the exclusive economic zone:

2.3.1. All development activity and determination of marine areas for various uses (e.g., protected areas for nature conservation) in the exclusive economic zone require coordination and consultation. In the exclusive economic zone, the current limited human activity and development operations are also expected in the near future, and as such, do not require a rigid planning mechanism or a planning balance between conflicts and opposed interests. However, an inclusive planning coordination mechanism is needed that will prevent the emergence of spatial conflicts – i.e. a planning consultation procedure.

2.3.2. A limited forum of the Committee for the Protection of the Coastal Environment will be responsible for incorporating various development activities and uses within the exclusive economic zone. Any use / development activity in this area will be brought forth for consultation with the limited forum of the Committee for the Protection of the Coastal Environment before approval by the authorizing body, if such exists.

2.3.3. The limited forum of The Committee for the Protection of the Coastal Environment will include:

- A representative from the Planning Administration - the Chairman
- A representative appointed by the Minister of Environmental Protection
- A representative appointed by the Minister of Agriculture
- A representative appointed by the Minister of Defense
- A representative appointed by the Minister of Energy
- A representative from the Israel Nature and Parks Authority

2.3.4. The limited forum of the Committee for the Protection of the Coastal Environment will determine the document submission procedures for the appropriate planning consultation.

2.3.5. The procedure for approving plans for activities and facilities in the gas and oil areas will be carried out, unaltered, under the authority of the Commissioner for Petroleum Affairs. Concurrently, a development plan will be submitted for consultation with the limited forum of the Committee for the Protection of the Coastal Environment.

- 2.3.6. In accordance with future changes in the scope and type of requested activities in the exclusive economic zone, the government will examine the need to update the planning consultation procedure.
- 2.4. Any development in the maritime space shall include, as far as possible, an examination of the vulnerability to the various impacts of climate change and the required tools and means to mitigate this vulnerability. The design and construction of marine structures will be appropriately adapted to the predictions regarding climate change, with the engineering design of the structure adapted to the various scenarios regarding sea level rise, changes in wave height, etc.
- 2.5. Wherever the Committee for the Protection of the Coastal Environment is mentioned in this document, the reference is to the planning institution authorized by law.
- 2.6. Security considerations will be included in the examination of plans and a planning consultation procedure.

2.7. Unique planning procedure in territorial waters - temporary permit for experimental facilities to examine the applicability of an innovative venture

2.7.1. Overview

- a. An innovative venture at sea is a project to develop new technology or upgrade existing technologies, including a project that demonstrate the expansion of scientific and human knowledge in maritime space.
- b. Research and development processes of innovative ventures often include an experimental phase (pilot). At this stage, it is required to establish an experimental facility or carry out an activity, in order to practically examine of the feasibility of the project.
- c. Currently, any experimental activity testing the feasibility of an innovative venture, that requires the construction of a limited pilot facility, requires the approval of a statutory plan, in a lengthy and high-cost procedure. Promoting innovation and inventive projects related to the sea requires the provision of a quick and efficient option for the establishment of a pilot on a limited scale (relative to the planned activity), and requires the possibility of obtaining a prompt permit for the establishment of the facility / experimental activity.

2.7.2. Policy guidelines

- a. In order to promote innovation at sea and improve Israel's competitiveness in the development of innovative venture in the maritime space, as a basis for the development of the blue economy industries, a shortened procedure will be established for planning approval of temporary experimental activities. The purpose of the unique planning procedure for experimental facilities that are part of an innovative venture is to define the conditions for obtaining prompt permits for temporary experimental activities in the maritime space.
- b. The Committee for the Protection of the Coastal Environment will approve a temporary permit for experimental facilities to examine the applicability of an innovative venture.
- c. In addition to the planning process, the Israel Land Authority will also be required to formulate a rapid procedure for approving the temporary activity in terms of the provisional use of land units at sea.
- d. Preferred marine exploration areas for experimentation and innovation activities:
 - As marked on the policy document maps: two areas in Haifa Bay, two areas in front of Hadera at a depth of 30-70 m, and a site in front of Mikhmoret. Likewise, in the area of approved polygons for gas installations in National Outline Plan 37/H. Priority will be given to the location of experimental facilities in the areas marked in National Outline Plan 37/H with the approval of the Ministry of Energy, over the location of the experimental facilities in polygons marked east of them.
 - In addition, it will be possible to carry out activities and establish facilities for experiments in the port areas of Ashdod and Haifa.
 - To the extent that activity / facilities in other marine areas are required in terms of depth or sea conditions, a planning institution may approve a permit for a unique planning procedure in other marine areas and within the restrictions contained in this chapter.



National Monitoring of the Maritime Space

The Arrangement of Maritime Space | National Monitoring of the Maritime Space

1. Overview

Systematic and continuous monitoring of physical, chemical, biological and health parameters⁸ in Israel's maritime space, in space and time, is a necessary condition for the development of the various branches of activity at sea and for understanding the marine ecosystem and the changes in it. Added to this, is the monitoring of activities in the maritime space, such as: fishing, shipping, hydrocarbon infrastructure, desalination, discharge to the sea, aquaculture, etc. This type of monitoring is required for ongoing coordination and effective planning in the maritime space to reduce the environmental impacts of the activity and reduce conflicts between different users. The development of monitoring technologies and the effective integration of the data is a key component in the development of the conditions required for sustainable blue growth.

In recent decades, there has been a growing demand from the private and public sectors for maritime monitoring data to support planning decision-making, conservation of the marine environment, infrastructure development and reducing planning and investment uncertainty.

The contribution and effectiveness of monitoring to the various needs concerning development and conservation of maritime space depends on two main factors:

1. Formulation of an overall perspective and policy for a monitoring system, based on the needs and definition of priorities regarding the type of monitoring, time and space. The monitoring system should support and provide the information needed to formulate detailed national policies and regulations on various issues at sea.
2. Accessibility of the processed and raw information to the various users in a manner that will service the needs of planning, development, research, and conservation of the marine environment. The guidelines on this topic are presented in the chapter on the management of physical-environmental data in Israel's maritime space.

Government Decision No. 4399, dated 23rd of December 2018, regarding the monitoring of maritime space, imposed on the Ministries of Energy and Environmental Protection to establish an Inter-ministerial Steering Committee for the implementation of an expanded National Monitoring Program. This Steering Committee also works to coordinate the national plan with other monitoring programs operating at sea, while streamlining the entire

⁸ Physical parameters - for example: data of waves, currents, temperature, sediment movement, bathymetry.
 Chemical parameters - such as: concentrations of substances and pollutants in water or at the bottom.
 Biological parameters - such as: species diversity or habitat status.
 Health parameters - for example: the presence of bacteria in the water of bathing beaches, the quality of the water at the entrance to desalination facilities.

maritime monitoring system in Israel. The National Monitoring Program includes a wide range of monitoring areas and relies on a broad scientific advisory committee. The government decision also included defining budgetary resources and pooling together existing resources.

In accordance with the government's decision, the Inter-ministerial Steering Committee for the implementation of the National Monitoring Program will include representatives of the following ministries: Ministry of Environmental Protection; Ministry of Energy; Planning Administration; Ministry of Transport; Ministry of Health, two representatives of the Ministry of Agriculture (Fisheries Division and National Center for Aquaculture); two representatives of the Ministry of Defense (on the subjects of monitoring and information security); the chief scientist of the Ministry of Science and Technology and an additional representative of the his choice. Additional representatives will also be invited to participate in the committee, for example, a representative of the Government Authority for Water and Sewage, a representative of the Nature and Parks Authority, and a representative of environmental organizations.

The outline of the National Monitoring Program establishes the government's commitment to monitoring activities, consolidating documentation, maintaining and disseminating data collected, producing a coordination mechanism and pooling of resources, for the purpose of improving all monitoring activities carried out at sea.

A Committee of Experts in the field of marine science and public health, headed by a representative of the Ministry of Environmental Protection, advises the Steering Committee. The Committee of Experts gives its opinion on the monitoring program and on the quality and findings of the monitoring reports and recommends to the Steering Committee for the implementation of the National Monitoring Program about needed updates in monitoring activities. The activities carried out by the Committee of Experts are subject to information security guidelines defined by the defense establishment.

The Israel Oceanographic and Limnological Research (institute) is the operational branch and operates to carry out the following actions:

- Centralization of monitoring operations, data collection and sampling.
- Expansion of the Israel Marine Data Center and its regular updating in accordance with the information extracted from the various monitoring programs.
- Submission of an annual report of the monitoring results that coordinates all the monitoring activities to the Steering Committee for the implementation of the National Monitoring Program.
- Maintenance and operation of national monitoring infrastructure, including stations and systems for continuous measurement of parameters at sea and operational oceanographic models.
- Annual recommendations on updates of the monitoring plan to the Steering Committee.

- Alerts to the Steering Committee about abnormal monitoring results that require the intervention of the authorities.
- Implementation of information security guidelines in accordance with the guidelines of the security establishment.

2. Policy guidelines

- 2.1 The National Monitoring Program has adopted the IMAP principles for monitoring the Mediterranean Sea under the Barcelona Convention and is part of the regional monitoring effort. In addition, the National Monitoring Program will address all of Israel's monitoring needs in the maritime space.
- 2.2 Marine monitoring will be carried out using the latest and most innovative methods: on beaches; in the water body; on and within the marine substrate, on the surface of the sea and in the atmosphere above it; and in Israel's exclusive economic zone; to be carried out in the frequency and spatial dispersal that allows reasonable conclusions to be drawn for the purpose of planning, developing, regulating and conserving maritime space.
- 2.3 National monitoring will be uniformly presented in reports, taxonomic definitions, and monitoring methods so as to allow comparison between findings of different monitoring programs.
- 2.4 The results of the national monitoring will be presented in periodic reports by the Israel Marine Data Center to be established, and will be submitted as raw and analyzed material to bodies engaged in policy formulation, regulation, planning, development, activity and research in the maritime space, including the Inter-ministerial Steering Committee.
- 2.5 Private and public companies engaged in marine monitoring in various frameworks shall, within the limits of trade secrecy, make their background surveys and environmental monitoring data available to the National Marine Monitoring System.
- 2.6 Abnormal results of monitoring values concerning public health, safety and well-being will be publicly announced, after approval by the professional authorities.
- 2.7 The construction of a system of permanent sampling stations which can be based on existing marine and coastal structures will be examined.
- 2.8 The Inter-ministerial Steering Committee for the Implementation of the National Monitoring Program will examine the possibilities for increasing regional cooperation on monitoring with the Mediterranean Basin countries, in coordination with the Ministry of Foreign Affairs.
- 2.9 Issues in the interface with the defense establishment (such as the placement of detectors, etc.) will be coordinated with the defense establishment in order to prevent vulnerability to the defense capacity of the Israel's shores.



Data Management and Accessibility

Arrangement of Maritime Space | Data Management and Accessibility

1. Overview

Parallel to the development of multiple technologies in marine monitoring services, preservation of the marine environment and the development of blue growth, the large volumes of data collected must be processed in order to transform it into knowledge. This information and data form the basis of decision making, arrangement and knowledge acquisition, and are key elements in creating the conditions necessary for blue growth.

In recent decades, there has been a growing demand for marine monitoring data, both in the private and public sectors, with the aim of supporting: planning, decision-making, the marine environment, promoting blue growth, infrastructure development and reducing uncertainty in planning and investment in the maritime space. However, the marine data collected and analyzed are not effectively harnessed for managing maritime space, conserving resources, and developing blue growth.

In Israel, marine data is collected in a number of databases of various government bodies. Additional marine data is concentrated in academic research institutes, museums, and private entities. The data is gathered in diverse formats and frequencies according to different data quality control protocols, in a way that does not allow for its comparison. In addition, there is a lack of resources required to collect, maintain and access the data. A draft decision to establish a National Hydrographic Mapping Center has been prepared by the Israel Mapping Center.

Along with the lack of centralization and uniformity in the data, there are a number of barriers facing **data sharing** with the various users. Development, planning, research, and conservation bodies have great difficulty obtaining vital data for their activities, and significant barriers also exist in the transfer of data between the state authorities.

The barriers can be classified into several groups:

- Trade barriers related to the confidentiality of commercially important data
- Security barriers related to protecting data of security importance
- Academic barriers related to the transfer of research data between researchers and various research bodies
- Barriers related to the nature of information, which refers to the importance of accessing raw data and not just processed
- Organizational barriers related to the dissemination of data among many entities and authorities, the lack of orderly management of data in some (sometimes even to the loss of collected data), and the publication of data in printed reports rather than digital media.

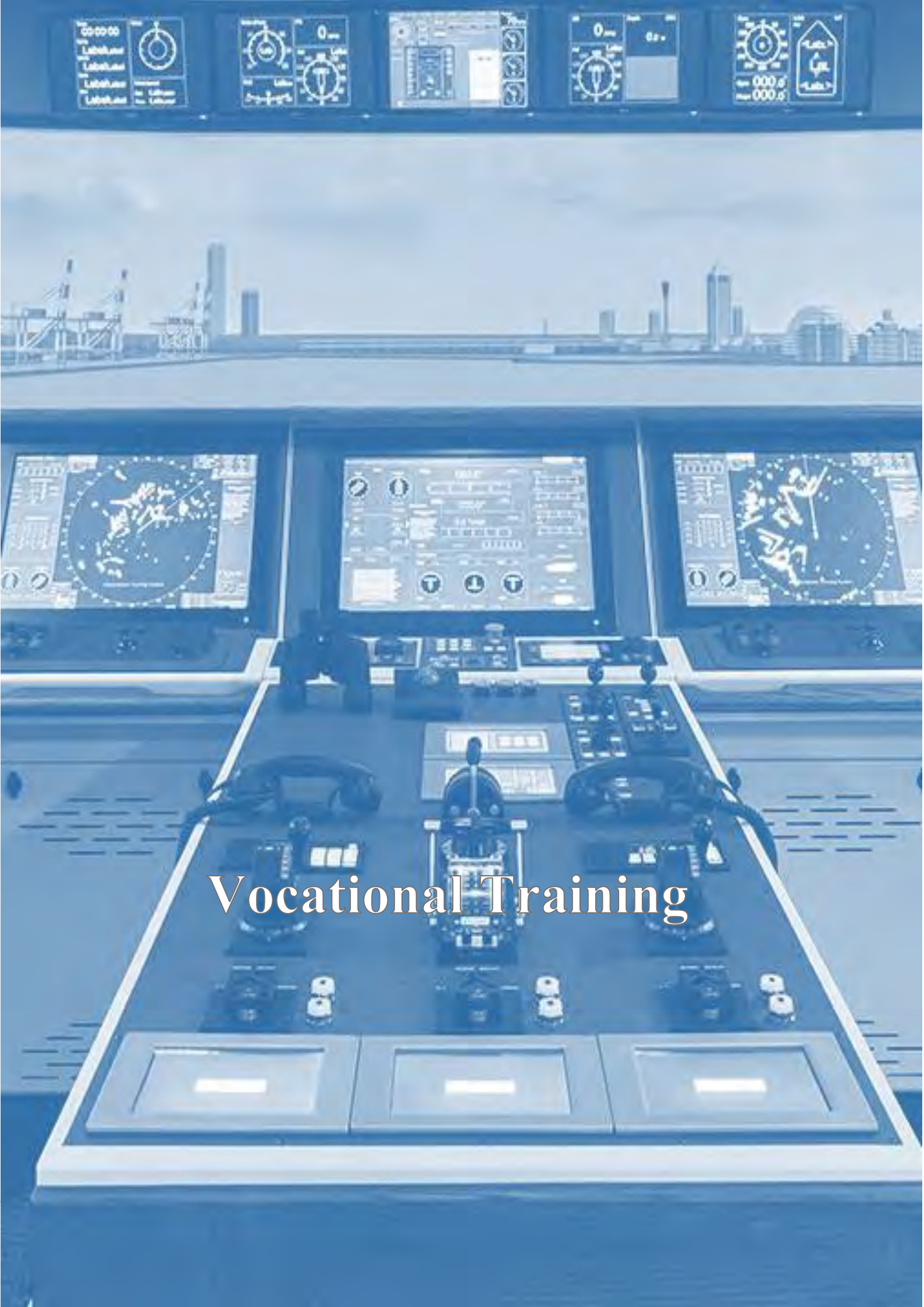
The absence of a unified national marine database coordinated with the national monitoring program, which centralizes and provides accessibility to marine data, represents a

significant barrier in the arrangement, planning, conservation of the environment and the development of the blue economy in Israel's maritime space.

2. Policy guidelines

- a. The Inter-ministerial Steering Committee for Maritime Space will promote the establishment of a unified national maritime database, based on metadata shared by the Ministries of Finance, Energy and Environmental Protection and the Marine Information Center in Israel Oceanographic and Limnological Research (IOLR). The Inter-ministerial Steering Committee for Maritime Space will be responsible, inter alia, for promoting solutions to the following issues: concentration of coordinating operations/activities among all entities which centralize marine data in Israel; integration of information from the various databases that will continue to function; setting standards for data collection and protocols; data quality control; all in collaboration with the bodies responsible for the various databases.
- b. In order to establish the National Maritime Database of Israel, the Inter-ministerial Steering Committee for Maritime Space will formulate an action plan. The plan will be formulated in coordination with all government and research bodies involved in gathering marine data.
- c. Data sharing:
 - The Inter-ministerial Steering Committee for Maritime Space will formulate and publish, together with the relevant parties, rules and guidelines for sharing marine data of various types.
 - Until the establishment of the National Database, the various bodies holding databases will work to maximize access to the data they possess, within the limits of the information security restrictions and commercial confidentiality.
 - The granting of maritime research budgets by the state will be contingent upon the transmission of raw and analyzed data to the relevant government ministries and the Israel Marine Data Center according to the various stages of the study (and not just at the end of the study). Appropriate rules will be established for studies funded by foreign bodies.
 - Maintaining and disseminating relevant data that will be collected in the maritime space will require the approval of the authorizing information security agencies. The defense establishment will make a current assessment of the types of marine data that will be stored and disseminated and under what restrictions, taking into consideration the current stringent limitations that are expected to significantly reduce the potential for exploiting sea resources for the benefit of the Israeli economy. Collecting and monitoring in and near security facilities and areas will only take place after obtaining prior approval from the defense establishment.

- When it comes to disseminating maritime data related to foreign relations, the Foreign Ministry will be involved in the decision-making process.
 - Biota, collected through full or partial public funding, will be preserved and delivered to existing national collections in academic institutions (in addition to providing research data).
- d. Components of the information presented in the new database, may include, among others:
- Hydrodynamic data (for example: winds, currents, sea level);
 - Geo-chemical data (for example: temperature, salinity, acidity, nutrients, other seawater components and various pollutants);
 - Geophysical data (for example: bathymetric, sediment composition, seabed subsurface structure, active and suspected fractures and faults, earthquake foci, landslide prone areas, and more);
 - Environmental and ecological data (such as: productivity, fishery and fish monitoring, life in the water, hard substrate and sandy seabed, life bound to artificial substrates and structures, flows to the coastal waters and pollutant loads, solid waste at sea and beaches, environmental impact markers and more);
 - Various types of fishing monitoring data in terms of time and space: catch, ventures, number of fishermen (licensed), various fishing methods, including the percentage that are operating and their locations in Israel's territorial waters;
 - National Monitoring Plan data;
 - Data on the socio-economic activities in the maritime space, including maritime sports, trade and shipping, fishing, infrastructure, etc.;
 - Environmental impact assessments carried out as part of planning procedures for operations or facilities at sea;
 - Preliminary surveys conducted to establish facilities and marine activity;
 - Environmental management plans for offshore projects;
 - Marine statutory plans;
- e. The database will also display current data measured and collected from various sensors, monitoring data, field surveys and research and data collected among state institutions as part of various processes under their authority.
- f. The National Database will be appropriately budgeted and managed by various maritime professionals, on a regular and long-term basis.



Vocational Training

Arrangement of Maritime Space | Vocational Training

1. Overview

The presence of highly skilled personnel in the various marine related professions in Israel constitutes an essential resource and a basis for the development of the process of blue growth and innovation in the maritime space, as well as, the proper functioning of aspects such as: shipping and ports, construction of marine structures, management of the marine sand resource, research, science, monitoring, and conservation of the marine environment.

As in other developed countries, the State of Israel is required to train professional personnel in the fields of technology, engineering, and marine sciences as well as shipping and environmental protection. The lack of an overall perspective of the required professions and fields of training may jeopardize or hinder the growth of a marine-based economy.

Currently in Israel, there is a notable lack of training programs in various subjects, such as in the field of marine engineering and a limited supply of professionals in other fields of science, engineering, shipping and ports, heritage, and other fields.

In recent years, both the number of Israeli mariners in the merchant fleet and the number of vessels under the Israeli flag have declined for a number of reasons which include: insufficient incentives for training seamen and naval officers, highly demanding training courses, and the unattractiveness of registering Israeli-owned ships under the Israeli flag. As a result, the array of maritime training in various areas related to shipping has been shrinking, and the future prospect of staffing the multitude of seamen's' roles in ports, maritime liaison companies, the Israel Port Community System (IPCS) and the Administration of Shipping and Ports is threatened.

In addition, shipping regulations (seamen, Israeli crewed ships) stipulate that: on every hauling ship, Israeli seamen at all levels are required, and that an Israeli seaman is required on every ship that performs work along the state's shores.

The presence of professional and skilled personnel in the maritime sector is essential for the future of the shipping industry in Israel:

- As a professional workforce for the merchant fleet.
- As a professional workforce to operate the coastal shipping vessels for the various uses in maritime space (such as in aquaculture, fishing, oil and gas infrastructure, marine engineering work, research, etc.).
- As a professional workforce for the ongoing operation of Israeli ports (for example: navigators, port captains, etc.).
- As managerial personnel in regulatory and supervision positions in the maritime space (e.g.: Administration of Shipping and Ports)

2. Suggested policy guidelines

- The Inter-ministerial Steering Committee for Maritime Space will, together with the relevant bodies, promote a systematic examination of the various professional areas in the maritime space that require upgrading (such as training of naval officers, the cadet civil service track, etc.) identify the shortcomings in training programs (academic and others) and develop an action plan in consultation with the relevant authorizing bodies.
- Based upon the examination, the Inter-ministerial Steering Committee for Maritime Space will oversee the coordination between the various bodies, including: the Council for Higher Education, academic institutions, the Administration of Shipping and Ports and others, to upgrade vocational training programs in the marine professions.
- Examining ways to increase the viability of ship registration in Israel: an increase in the number of ships registered in Israel may create broader employment opportunities for graduates of the training courses in maritime trade (since registering a ship under an Israeli flag requires the employment of Israeli crew members). The Ministry of Transport and Ministry of Finance will consider adopting measures to encourage the registration of ships in Israel.



Blue Growth

Arrangement of the Maritime Space | Blue Growth

In the EU and other countries, blue growth is considered to be one of the greatest growth potentials. Realizing the potential for growth in a space characterized by problematic and/or limited accessibility, challenging physical conditions, and other difficulties, requires the formulation of a comprehensive policy and a combined effort by the state authorities to implement it.

1. Main Principles for blue growth development in Israel

- Monitored environmental development - due to the great importance of the natural marine environment's health for humans and economic activity at sea, the development of marine economic activity must be carried out under effective environmental control, based on a strategic view and environmental policy for each sector of marine activity. One way to implement sectoral strategic policies is through strategic environmental surveys for various economic sectors.
- Implementation of a policy plan for Israel's maritime space.
- Economic development which is based on knowledge, research, and innovation.
- Reducing spatial conflicts and the creation of effective mechanisms for coordination and mediation.
- Creating synergies between economic activities at sea - encouraging synergies and reducing conflicts at sea, such as dual (or multiple) use of vessels, logistics areas and marine facilities for various uses. Promoting synergistic relations for economic development at sea can be accomplished by the government in two ways: as an economic incentive that reduces economic risk or through obliged cooperation, through terms of franchises or through agreed terms.
- Building trust between users in the maritime space, including the private sector, various organizations, and governance authorities at sea.
- Efficient exchange of knowledge and information across sectors and easy access to quality information and data.
- Promoting maritime education and sport and as much public exposure to the sea as possible - this exposure attracts human capital to the various marine areas such as research, development, infrastructure and entrepreneurship and creates a public commitment to the marine environment.

2. The effort to promote blue growth in Israel includes preparations in several areas:

2.1. Sectoral plan for the development of blue industries

The Planning Administration, together with EU experts, is currently examining the sea-based economies and new industries that may be added to the economic activity at sea. The examination is sectoral, in order to characterize existing activity, to identify opportunities, assess growth potential and identify barriers.

Sectors operating at sea can be divided into several characteristics:

- Veteran sectors whose activities are regulated, such as: shipping.
- Sectors whose economic activity is growing and expected to continue to grow, such as the hydrocarbon sector.
- Emerging sectors such as: aquaculture, nature conservation, and research.
- Future sectors whose applicability is unclear, such as: wind energy and biomass growth to generate energy.

The products of the economic examination of the sectors operating at sea will form the basis for a detailed examination and the preparation of detailed action plans by sectors.

2.2. Israel's Maritime Spatial Planning (MSP)

The key limitation of developing blue growth through sectoral programs is the difficulty in predicting the true economic potential of the various marine industries and setting investment priorities.

The scope of uncertainty and information gaps about economic development in maritime space are large, in addition, there is great difficulty in assessing the economic potential and applicability of new industries or of breakthroughs in technologies that can be viably implemented. The surprising entry of the hydrocarbon sector into Israel's maritime space, with natural gas discoveries, is an example. Another example of uncertainty is the existing information gaps about the possibility of utilizing wind energy to generate electricity at sea, given the technological breakthrough in the construction of floating turbines and the major improvements in wind turbine efficiency.

Maritime Spatial Planning (MSP) is a key tool in promoting the blue economy. Policy plans for the maritime space produce **the infrastructure to fulfill the conditions required for the development of marine economies**, while monitoring the environment and conserving the health of the natural marine eco-system. The implementation of the policy document will increase the certainty of investment in the maritime space by defining rules of activity, improving coordination, reducing spatial conflicts and arranging a clear and professional structure, which together, create the conditions for the development of existing and new industries

The conditions for economic growth at sea and their expression in the policy document for Israel's maritime space:

#	Conditions for Blue Growth	
1.	Increasing spatial awareness and reducing conflicts	<ul style="list-style-type: none"> • Define a clear spatial concept (in a series of thematic maps) for the different activities • Define user interactions • Increase user overlap • Improving coordination mechanisms • Opening additional marine areas for activity • Arrange the subject of maritime infrastructure lines • Establish a mechanism for coordinating and mediating engineering and operational conflicts
2.	Creating supportive regulation development and innovation	<ul style="list-style-type: none"> • Dedicated planning procedures geared to the characteristics of maritime space • Swift procedure, for a temporary permit for an innovative facility, specialized for the sea • Spatial definition of marine exploration areas within and near ports for R&D, and innovative experimental facilities (for example: in the fields of research and monitoring, technology, engineering, energy, nature conservation, aquaculture) • Coordination within the exclusive economic zone
3.	Expertise and knowledge in arranging maritime space	<ul style="list-style-type: none"> • Establishment of an Inter-ministerial Steering Committee for coordination in maritime space. • Planning through a committee of marine oriented experts – The Committee for the Protection of the Coastal Environment in the Maritime Space with expanded powers
4.	Preserving the natural environment and heritage	<ul style="list-style-type: none"> • Defining a comprehensive nature conservation policy for maritime space based on large-scale protected marine areas along with complementary policy tools • Define a set of rules (in each area of activity) to reduce environmental impacts. • Establishment of marine national parks • Spatial policies and policy tools for preserving antiques and heritage sites
5.	Information exchange between sectors that is accessible in a manner that will	<ul style="list-style-type: none"> • Policy principles for collecting and accessing information

	support development potential and encourage entrepreneurship	<ul style="list-style-type: none"> Promoting the establishment of a national marine information database, based on the existing database in the Planning Administration, which will coordinate the information from a variety of bodies working to collect marine information
6.	Promoting national maritime policies in areas that lack overall perspective	<ul style="list-style-type: none"> Collecting and accessing information, vocational training, marine sand, maritime infrastructure lines, maritime education, water sports, and conserving the marine environment.
7.	Improving maritime space governance	<ul style="list-style-type: none"> Coordinating and pooling resources for maritime enforcement activities
8.	Flexible and dynamic policies, adaptable to changes	<ul style="list-style-type: none"> The policy document's structure is flexible and adaptive to changes
9.	Research and development promotion	<ul style="list-style-type: none"> Research promotion and accessibility to research data
10.	Vocational training	<ul style="list-style-type: none"> Promote maritime vocational training – consolidating maritime professional capabilities based on examining national needs as the infrastructure for Blue Growth
11.	Establishing the infrastructure to support economic development	<ul style="list-style-type: none"> Offshore platforms for infrastructure, onshore docking infrastructure and offshore infrastructure lines
12.	Maintain conditions for the development of the central economic keystones	<ul style="list-style-type: none"> Security, shipping and ports, energy and hydrocarbons, desalination, communications
13.	Education and water sports	<ul style="list-style-type: none"> The public's gateway to the sea, the basis for it to the marine professions, entrepreneurship and the preservation of the marine environment - formulating a national policy for a significant increase in activity

2.3. Promotion of development and innovation research related to maritime space

The field of development and innovation has a unique potential for economic growth as it can rely on the country's 'human capital', technological development and innovation skills, and is not significantly affected by the physical conditions of Israel's maritime space.

Components for promoting aspects of research, development and innovation:

- Enabling and encouraging regulation in aspects of planning, real estate, taxation and the environment
- Funding and support
- Infrastructure of professional personnel in a variety of marine professions

- Available physical infrastructure – docking / berthing platforms, sailing vessels, logistics areas, marine areas for research and development
- Efficient transfer of information and marine data availability - a national monitoring program, an accessible marine data center capable of delivering large amounts of reliable data
- Effective governance, arrangement, and coordination of maritime space in a way that reduces conflicts
- Create synergies between different sectors
- Establishment of a national marine center to promote research and development and innovation, a marine technology incubator, etc.

2.4. Promoting an examination of energy production from renewable sources in maritime space

Development of renewable energy production technologies in the maritime space is advancing at a rapid pace. Electricity generation from the sea currents, waves and the utilization of wind energy are an important and sustainable potential for future use of marine resources.

Much of the world's wind energy is produced through offshore wind farms. New technological advances allow the creation of floating wind turbines anchored to the seabed, allowing for wind utilization even in non-shallow water. In recent years, other technological developments of wind turbines have improved the energetic and economic efficiency of wind utilization. The conspicuous absence of wind measurements in Israel's maritime space (as opposed to land) does not allow a cohesive understanding of the potential of wind energy production at sea and policy promotion.

The Ministry of Energy will work to conduct a wind survey in the maritime space to examine the feasibility of establishing wind farms at sea.

As economic, engineering and environmental feasibility for establishing a wind farms at sea is found, their location, under appropriate conditions, can be overlapped and combined with other sectors: with fish breeding farms, in areas for natural gas treatment infrastructure based on the National Outline Plan 37 / h, and with exploration areas for experimental facilities.

2.5. Maritime tourism

The Mediterranean coast is the world's top attraction of coastal tourism of its kind, with 340 million tourists a year and a 40% forecasted increase by 2025.⁹ The maritime tourism sector includes a variety of activities, including boating, diving, swimming, cruise ships, and yachts and is based on various and varied factors of attraction, such as: the natural system, archeology and heritage, coastal recreation, water sports (popular and competitive) and more.

Policy guidelines related to maritime tourism are detailed in the Leisure and Recreation, Education and Marine Sports chapter; in the Archeology and Heritage chapter; and the National Parks chapter.

Cruise tourism and passenger terminals are related to large passenger ships docked at commercial ports and offer a short, usually one-day visit, to sites on the tourist map that are not necessarily adjacent to the sea. However, the potential for development of tourism activity can also be identified even in cities which are not on the national tourism map, such as the cities of Haifa and Ashdod, and thus leverage tourism development in these cities. Yacht-based tourism is a very active sector in the Mediterranean but is limited in scope, mainly due to the limited supply of docking / berthing sites along the coast of Israel.

Innovative initiatives for the development of maritime tourism complexes are usually located in the area of territorial water and close to the coast, involving aspects of accessibility and logistics services. The shallow water area close to the coastline is of great importance for the coastal recreation activities and the preservation of the marine environment and heritage. This area is also packed with infrastructure and offshore activities that regularly operate in specific areas as well as activities that are not necessarily physically structured (swimming and water sports). Maritime tourism complexes will be examined with great care in terms of their impact on leisure and recreational coastal activities, the preservation of the marine environment, and the variety of sea users.

2.6. Arrangement of development in the aspect of real estate

The Israel Land Authority will look at easing the contractual requirements in the aspect of real estate, for young industries at sea, in a manner that will enable their development in the early stages.

⁹ MedTrends project (WWF France), Blue Plan GFCM, 2014

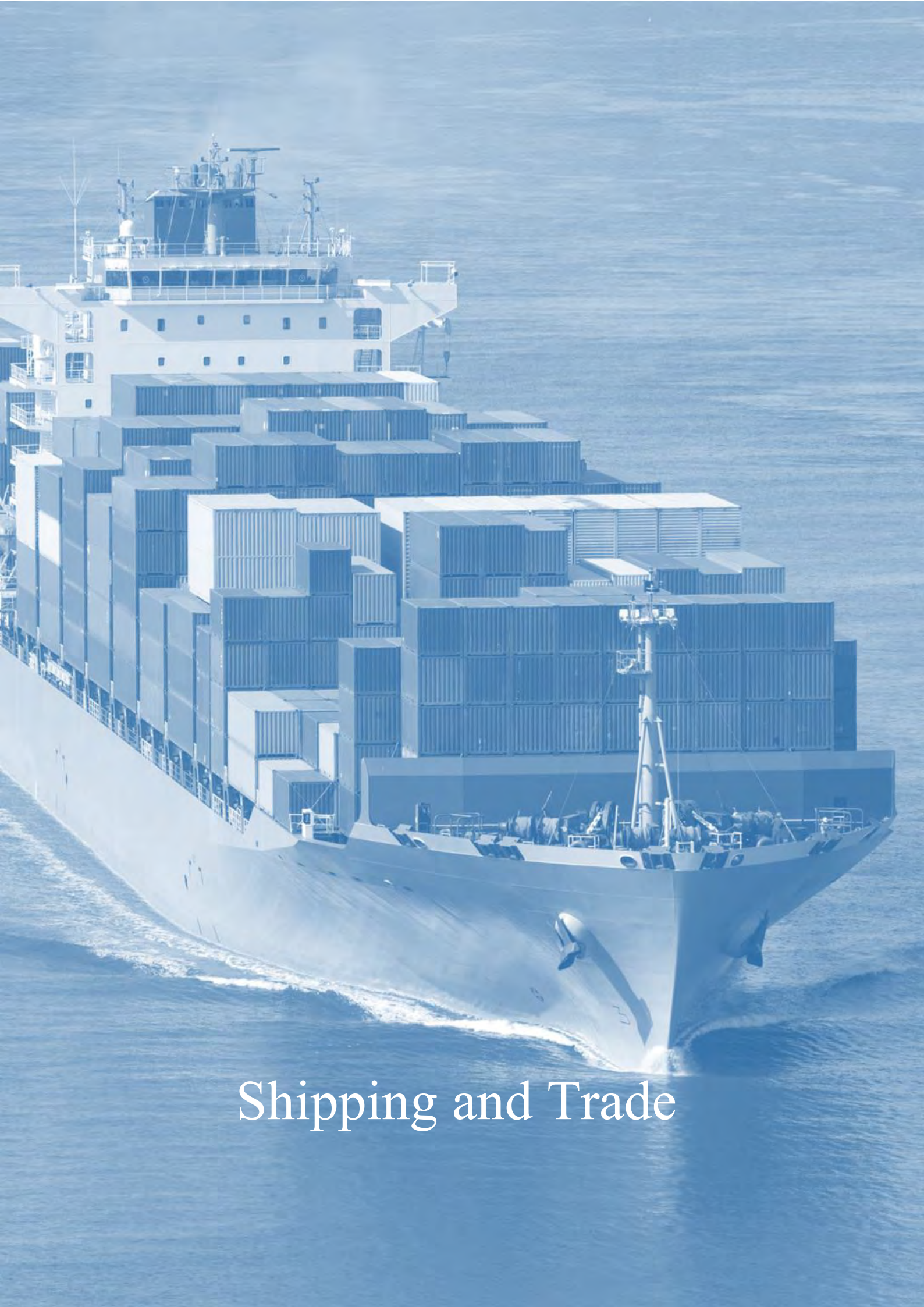


PLANNING
ADMINISTRATION



Maritime Policy

2ND SECTION | Activity in Maritime Space



Shipping and Trade

Activity in Maritime Space | Shipping and Trade

1. Overview

From a geopolitical point of view, Israel is an island state with an extreme economic dependence on shipping – 99% of trade in Israel is done via the sea. The fact that Israel’s ports are a one-day sailing distance from the Suez Canal, indicates the potential for their operation as transshipment hubs and expanding Israeli transshipment activities.¹⁰

The policy guidelines for the shipping sector are based on the importance and high priority of this sector to the State of Israel.

The policies include three components:

- A. Area management
- B. Shipping routes management
- C. Infrastructures development and expansion (based on the existing infrastructure)

2. Ports

2.1. Port declaration areas

The Israel Ports Development & Assets Company Ltd. (IPC) is responsible for the development of Israel's commercial ports and their adaptation to the rapid progress in international maritime trade as well as the needs of the Israeli economy. In addition to planning and executing complex and large-scale infrastructure and development projects, the company is responsible for managing state assets within the ports’ area in accordance with the world-standard ‘Landlord’ model.¹¹

At each port, operates a state certified port and corporations' company. The IPC is responsible for the maritime departments within the ports using subsidiaries in Haifa and Ashdod.

The dimensions of marine vessels are used as a basis when evaluating zoning areas for maritime ports - about 400 m in length and a sink of 16 m. The declared port zone also includes the access channel, the diameter range of a ship’s rotation and the docking areas.

2.2. Policy guidelines for Maritime Port Declaration Areas:

- A. Port operations will have absolute priority in declared port zones.
- B. A periodic review of the declared zone’s dimensions will be made in accordance with the AIS Density Map, among others.¹²
- C. Additional operations and activities may be permitted in the declared port zones with the consent of the regulator, insofar as they do not impair port activity.

¹⁰ About 38% of the global maritime transport passes through the Suez Canal

¹¹ The source of the authority is a certification letter for "Israel Ports Development and Assets Company Ltd." to be the development and assets company under section 9 (a) of the Administration of Shipping and Ports, 2004. This certification includes "port" definitions - a port as specified in amendment 2 to the Act; "Port Area" - any of the following: Port Area X - the area within the boundaries of Port X, as specified in Port Order X (Declaration of Port), including any order to amend or replace it.

¹² For example, examining the declaration area sized needed for the Trans-Israel pipeline port.



- D. Efforts should be made to turn ports into 'green ports' as part of promoting blue growth, such as reducing energy consumption, using alternative energy sources, meeting stringent environmental standards, and streamlining transportation and 'green' construction.
- E. A significant additional increase in air pollution is attributed to the operation of generators supplying power to docked vessels in ports close to urban areas. A power grid connected to the National Electrical Company must be set up within the ports for docked vessels in order to allow their generators to rest. IPC in consultation with the Ministry of Environmental Protection and Administration of Shipping and Ports (ASP), will review the rate of equipping vessels with the charging components, define in which ports the electrical connections are required and assist port companies with its implementation.
- F. Increasing the anchorage areas in addition to those currently available, will be based on a marine ecological survey and consideration of environmental and archeological aspects.
- G. Docks/piers in ports should be allocated for mooring and aquaculture activities.
- H. The placing of buoyant anchors (IALA) on a hard substrate, which is considered to be of ecological value, should be avoided as much as possible, without affecting the safety of vessels. Ecological engineering will be integrated into design and construction (materials and structure).
- I. The laying down of infrastructure (piping and cables) within the declared port zones should ensure continued port operations without significant restrictions.
- J. Damage to the environment (noise, lighting, sediment buildup) will be avoided as much as possible during operations in and around the port, as specified in the section on environment.

3. Marine terminals and coal jetties

Fuels for energy production are predominantly transported by sea. Along the coast of Israel there is a number of maritime jetties used by oil tankers to unload fuels via underwater pipelines to which the tanker connects to at sea. Distillates (gasoline, jet fuel and diesel), mazut fuel oil, liquefied petroleum gas (LPG), natural gas and crude oil flow through these jetties. These maritime jetties are considered part of the port-declared areas (including energy ports) and their position is determined according to the given loads that the tankers need to unload and process.

In Israel, there are two maritime jetties used for unloading of ships transporting coal, off the coast of Hadera and Ashkelon. Worldwide, jetties and fuel linkers within the open sea are generally attributed a high contaminant potential. However, considering the State of Israel's security situation, damage to vessels while they are in the ports (as a result of hostilities) carries similar risks. Today, preparations for possible marine contamination events within the ports area where jetties operate are in place and include dedicated equipment and trained personnel.

3.1. Policy guidelines for mooring points

- A. A review of the locations of future mooring points will be made in accordance to other uses and users of maritime space, including the expected mutual effects between them; for example: the effects at water desalination intake locations.
- B. The locations of maritime jetties will be determined following the examination of operational, engineering, and economic considerations.
- C. Planning the pipeline routes of mooring points, will be based on an ecological survey and will ensure minimization of environmental impacts (see policy guidelines for marine pipelines).
- D. Wherever possible, the maritime terminal and mooring points will not be placed on hard substrates that are considered ecologically valuable.
- E. Wherever possible, anchorage of buoyage systems (IALA) should be avoided on a hard substrate that is considered ecologically valuable. Whenever possible, their construction will incorporate ecological engineering.
- F. Existing coal piers will be considered during the planning of mooring points for gas tankers and other uses.
- G. Positioning of underwater containment (e.g. underwater LPG storage) will be examined in the area of maritime jetties.

4. Shipping Lanes

Shipping lanes are purely recommended routes. Vessels move in accordance with the principle of freedom of navigation (Mare Liberum), but a state may define shipping lanes within its coastal waters. These lanes are marked on maps and published in the Notice to Mariners. The publication of these lanes is within the jurisdiction of the Administration of Shipping and Ports; although the lane initiator is the Navy, operating through the Ministry of Defense and in consultation with Administration of Shipping and Ports.

The shipping corridors for entry into Israeli ports of 40 nautical miles, as well as the longitude route (including the Gaza port) were issued in this way (Shipping Corridors for Ships approaching or leaving Israel NO. 2/2007). This is a product of security control needs. These shipping lanes are flexible and can be changed if needed in the face of other conflicts, as opposed to the more rigid systems of Traffic Separation Schemes that are set for cruise safety reasons.

4.1. Policy guidelines for shipping lanes

- A. Shipping lanes and anchorage areas will be kept open and safe to ensure Israel's maritime trade activities.
- B. Shipping lanes will be determined in accordance with security considerations, cruise safety considerations, and in consultation with Administration of Shipping and Ports.
- C. The interruption of cruise safety within the shipping lanes and ports entry will be prohibited, in coordination with the Administration of Shipping and Ports. For example, fishing with nets and rods (stationary equipment) will be prohibited and



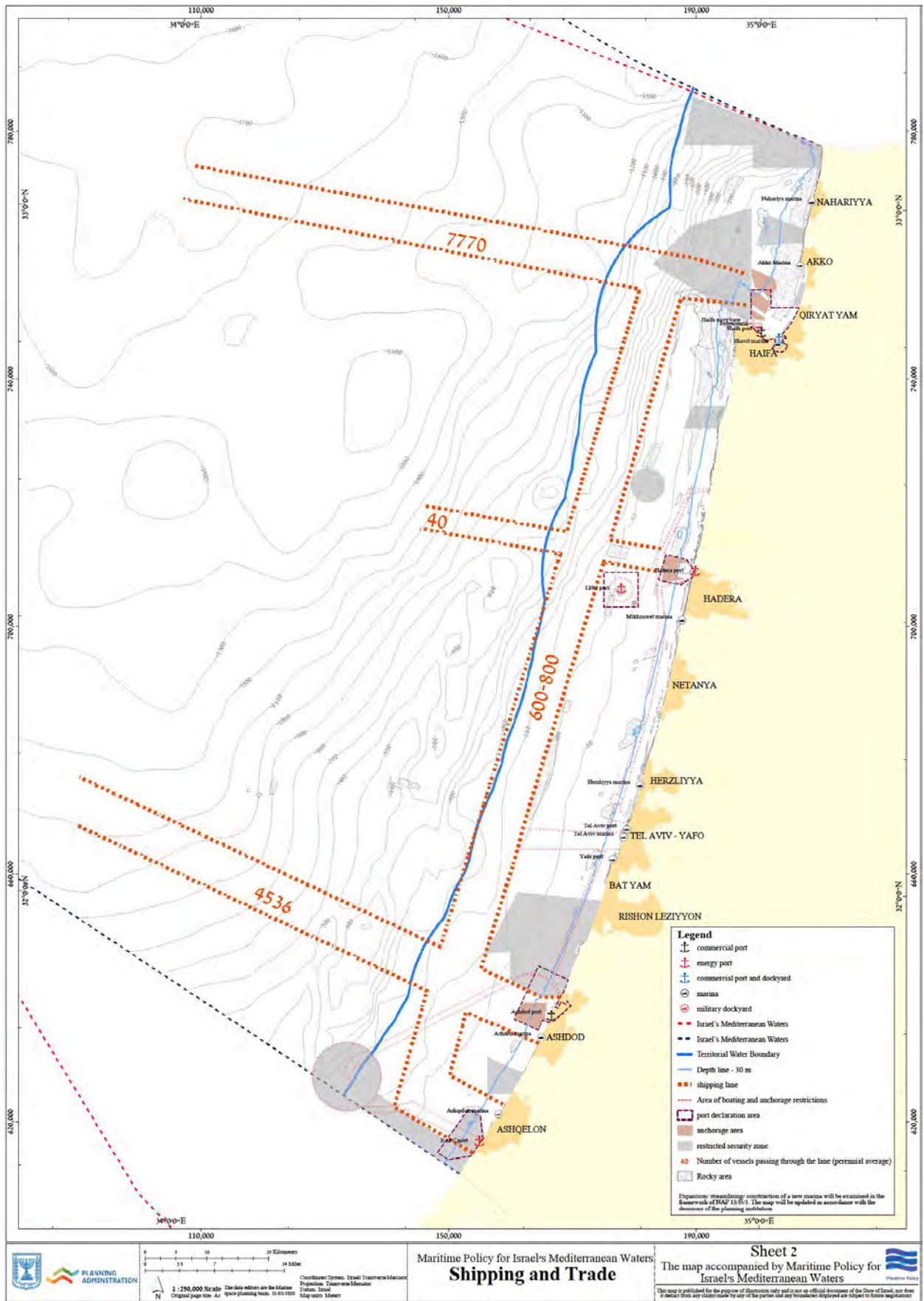
marking of fishing boats in accordance with IMO's international marking rules will be required.

- D. Shipping lanes will be adjusted periodically according to security considerations, cruise safety considerations, marine development needs and ecological considerations (such as roaming and breeding area for mammals and other flagship species).
- E. The narrowing of shipping lanes will be considered, if necessary, also in comparison to the AIS Density Map and in accordance with the declared port zone. The Administration of Shipping and Ports will examine and update shipping lanes that are not required for maritime trade activities.
- F. There will be no restrictions on maritime trade activity in shipping corridors that cross marine nature reserves.

5. Construction and expansion of commercial ports

- A. The shipping sector (including shipping along the coast) alongside security and energy will be given priority over other uses within declared port zones, shipping lanes and anchorage areas to. However, the shipping sector's flexibility to change will be examined, provided that shipping industry does not suffer a significant loss.
- B. The addition of dockings / berthing for small vessels, in ports and marinas, is needed in order to maximize economic potential and to develop the various economic sectors for maritime activities along the coast; including: fishing, aquaculture, hydrocarbons, marine works, logistics support for new economic branches and leisure activities, education and marine sports.
- C. The Administration of Shipping and Ports will look into solutions to the present obstacle facing small vessels docking in ports regarding fees.
- D. The use of existing coal jetties should be considered for additional uses, given that it is not expected that additional coal units will be established for electricity generation and the planned conversion of existing units to natural gas. (ref14)
- E. A plan for the maritime grid pier construction for natural gas and LNG needs will explore the possibility of using the pier for other needs and uses as well.
- F. Ecological engineering will be integrated into the design and construction of ports infrastructure (materials and structure).

figure 5: Shipping and Trade Map



Security



Activity Within the Maritime Space | Security

1. Overview

The purpose of the policy guidelines in this chapter is to optimize the national use of maritime resources in consideration with security needs. This will be done by creating an effective interface between security zones and security operations with the other various users of the maritime space, regulating and maximising the overlap of the diverse activities at sea.

Israel's Defence Forces (IDF) operates within both the predefined security zones, as well as the full extent of maritime space according to security needs:

1.1. Restricted Security zones

The Defense (Emergency) Regulations 1945 Law legally defines security zones as security facilities. This includes restricted zones as determined by the Security Facilities Committee or the Security Facilities Appeal Committee, defined in Chapter 6 of the law; periodically modified.

Israel's maritime security zones are spread along the coastline, occupying 16% of Israel's territorial water. The coastline is also the most highly in- demand region for civilian activities such as water sports and recreation, fishing, shipping and ports, various national infrastructure etc. The security zones and their applied restrictions are set out in "Order 100" and authorized by the Israeli Navy commander. They may be classified according to the following division:

- **Permanently restricted areas** – for protection of state borders and vital infrastructure
- **Military firing range** – for training and experimentation
- **Danger areas containing unexploded ordnance (UXO)** – on the seabed

1.2. Areas adjacent to strategic infrastructure

Natural gas rigs and their surrounding areas are defined as strategic sea infrastructure, and sailing is prohibited within a defined radius of production sites. The prohibition is set by authority of the Minister of Transport, by law, to extend regulations in times of emergency (of seafaring vessels), granting the authority to command vessels for reasons of security or essential supplies and services. The prohibition does not apply to the Israeli Defense Force (IDF), the Israeli Police, the rights holders to the rig and rig service providers. Commander of the Navy or anyone authorized by him may permit vessels to sail in the prohibited zone. In order to declare a closed zone by virtue of this Act, it is necessary to establish provisions, which are ranked as ordinary regulation. The provisions are presented for approval by the Economic Committee or the Knesset Foreign Affairs and Defense Committee and are published in the records.

1.3. Activity

Navy military activities throughout Israel's maritime space for training purposes, ongoing security operations etc.

2. Policy guidelines

2.1. Restricted security zones closed to civilian activity (restricted zones, firing range/training zones, danger areas containing unexploded ordnance (UXO))

- A. Efforts will be made to reduce size and layout of security areas at sea in consideration of security needs.
- B. In order to optimize their usage, allowing for civilian activities within defined security zones will be considered, in a manner that will preserve their function and in accordance to the restrictions and regulations as determined by security authorities.
- C. Israel security establishment will review expanding permits and establish rules and conditions for recreational boating in security zones during daylight hours. An accessible, clear, and equitable permit system will be made available to the public by the security authorities, as is appropriate in the management of a public resource.
- D. Free passage will be maintained at all times for security services in nature reserves and throughout the whole of maritime space.
- E. Development in areas close to Israel's territorial waters / maritime borders will require special security approval.
- F. Both in the maritime space in general and security zones in particular, where new or additional infrastructure installation is needed, security bodies will define the conditions and necessary measures in coordination with the relevant bodies.

2.1.1. Military firing ranges

- A. Determining whether an addition or extension of firing ranges is required, shall be in relation and consideration to the myriad of users and uses of maritime space, among others.
- B. Israel security establishment will operate a coordination mechanism for crossing firing ranges, allowing efficient use of the maritime space by other users. The information regarding those responsible for each range will be made available to the public, in order to help facilitate contact for requesting and coordinating passage, as determined in "Order 100".

2.1.2. unexploded ordnance (UXO)

A. Mapping marine unexploded ordnance (UXO)

- Israel security establishment will map previously unmapped areas of unexploded ordnance (for example Artillery Corps units firing towards the sea) and will assess the degree of danger posed by explosives in the various areas. Planning decisions regarding sea infrastructure and other works at sea will be made based on this mapping as well as all the other relevant considerations.
- Maps of unexploded ordnance will be available to planning institutions, infrastructure bodies, fishermen and divers.

B. Clearing unexploded ordnance (UXO)

- INMAA – Israel National Mine Action Authority, in coordination with the IDF, will prepare a multi-year plan to remove unexploded ordnance from maritime areas used by the public for fishing and diving (such as zones 602, 615, 608a, 601a) as well as security zones which are open to the public on weekends and national holidays (comparable to clearing plans of landmine fields), in accordance with the 2019 Demining Law.
- Plans for infrastructure buried within or laid on the surface of the seabed (piping, cables, anchors etc.), will be accompanied by an unexploded ordnance survey and obligations to carry out the necessary clearing. This will be an integral part of the planning and implementation process of the infrastructure.
- Once the clearing of unexploded ordnance is completed and responsibility has been assigned to the relevant zone, "Order 100" will be updated.

2.1.3. Israel security establishment activities and marine ecology conservation.

- A. The planning of maritime security infrastructure (coastal, above and below the sea surface) will take into account environmental as well as security needs, including the effects on the ecological system, especially sea mammals and sea turtles. The maritime security infrastructures will be erected with as much sensitivity as possible in respect of conservation of marine ecological systems (including the design and materials used).
- B. As is customary on land, the Israeli security establishment will continue to work to increase environmental awareness among its people to the protection of natural and heritage values at sea. This includes marine ecology and environmental education, active participation in coastal and marine clean-ups and monitoring wildlife, such as marine mammals and sea turtles.
- C. The existing treaty between the IDF and the Nature and Parks Authority, which regulates military activity in marine reserve areas, will be extended to the entire territorial waters, following the necessary adjustments and in agreement with both parties.

2.2. Spatial changes in the deployment of security zones

2.2.1. Considerations underlying the proposed changes

In coordination with Israeli security establishment, it has been agreed that changes that has been published in "Order 100" will be made to security zones . The new layout and changes to security zones are presented in the maps accompanying the policy document for maritime space and in the table located in Appendix 1A. The changes in security zones may be classified into four types:

- A. **The opening of restricted firing ranges for boating and water sports on weekends and Israeli holidays** – restricted firing areas that are permanently closed or closed under conditions, constitute a restriction on freedom of navigation and civilian activities for leisure and recreation purposes, which are in constant and rising demand. Their accessibility in favor of diverse civilian activities at defined periods of time when the military has no need or use for them (weekends and holidays) contributes to the efficient use of maritime space.
- B. **Adjustments of restricted zones and firing ranges** – In some situations the coast is open to the public and the adjacent maritime spaces are restricted military zones or firing range zones. Adjustment of security zones is required in cases where there is no adequate correlation between the onshore and offshore areas.
- C. **Annulment of closed areas due to unexploded ordnance** – maritime space closed due to the presence of unexploded ordnance are not restricted for sailing yet are off limits for diving and any seabed activities. These restrictions can be lifted on conditions of removal of all unexploded ordnance and defining a responsible authority for these zones.
- D. **Additions to restricted zones and firing ranges** – Restricted zones requiring expansion in order to correspond to declared port zones, for the protection of essential infrastructure or to correspond to terrestrial firing ranges. Nevertheless, the Israeli security establishment may, at any time, close off areas of sea as required. "Order 100" will be updated according to the restricted security zones map presented in the policy document.

2.2.2. Spatial changes in the layout of closed areas (see enclosed mapping)

- A. Opening of restricted firing ranges for sailing and water sports on weekends and holidays: 601 a, 24, 82, 608.
- B. Correlation of restricted zones and firing ranges borders: 608, Polinum, 30.
- C. Annulment of zones closed due to unexploded ordnance (UXO) : 602, 615 – this after they have been cleared.
- D. Additions to restricted zones and firing ranges: 608

2.2.3. Recommendations for future changes

Given the importance of opening restricted zones to the public in conjunction with maintaining security needs, implementing the recommended changes detailed in Appendix 1 B will be deliberated by the Israeli security establishment, with emphasis on increasing beach access to public.

Figure 6: Agreed changes in the security zones

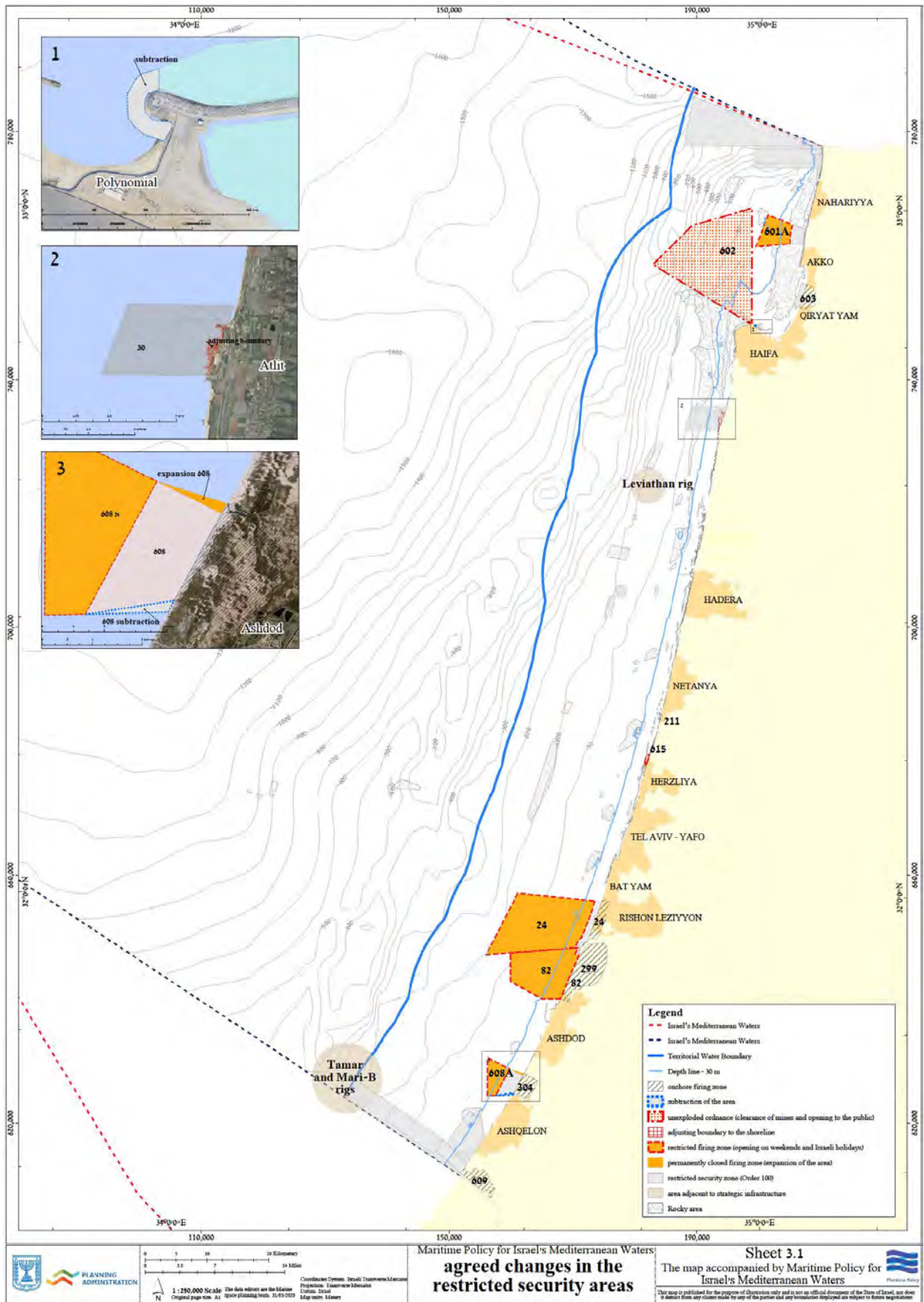
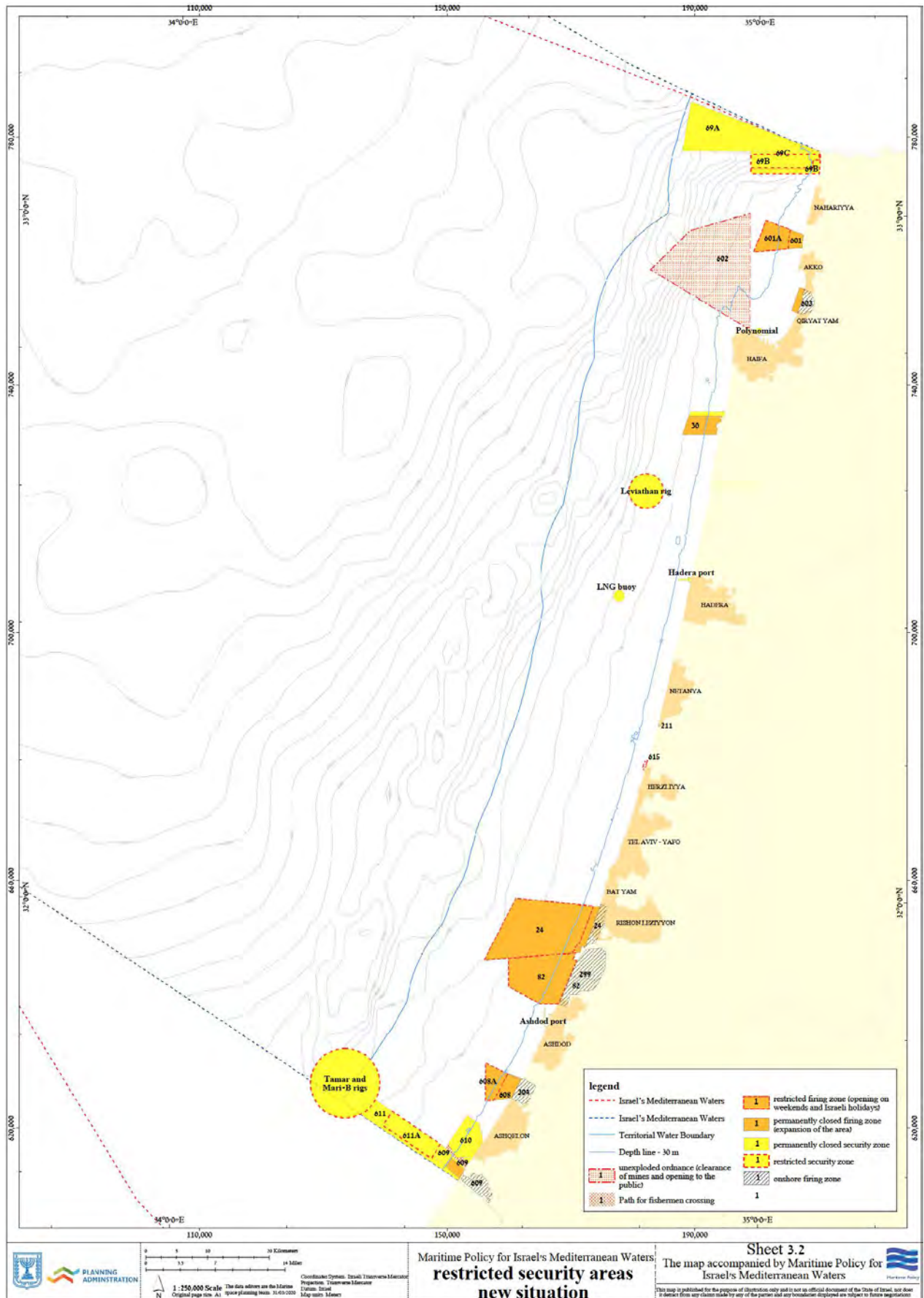


Figure 7: Security map - Closed areas at sea (new condition, after the implementation of the agreed changes)



A white sailboat with a large white sail is sailing on a blue sea under a clear sky. The sail is fully deployed and the boat is leaning slightly to the left. The water is a deep blue with white foam from the waves. The sky is a pale, clear blue.

Leisure, Recreation,
Educational and Water
Sports



Activities in Maritime Space | Leisure, Recreation, Educational and Water Sports

1. Overview

Maritime sports and educational activities, which also incorporate marine leisure and recreation activities, account for the majority of interfaces between the general public and the maritime space. Israel's maritime space is its only open border, and in the exceedingly crowded state, it provides various recreational options in an extensive open space. Since most Israelis live in the increasingly dense coastal strip, there is potential for a very intense interface with a unique and vast open space. In Israel, there is a steady growth in the interest and demand for education and water sports - reflected in the steady increase in the number of active cruisers, diving license holders, and the volume and the diversity of activities on the beaches.

In addition to the direct contribution to the leisure and recreation sectors, the experience and skills acquired through educational and water sports activities are recognized to generate the interest and consequential continued study in maritime occupations, which form the basis for establishing the vocational track in these professions and the infrastructure for blue growth. Maritime sports also bring significant achievements to Israel in international competitions and aid in developing an awareness of the marine environment.

This chapter deals with a range of activities that differ, but are also interconnected, so that addressing them separately diverts from the goal. For example, informal maritime education cannot be separated from sports associations, from competitive sports, or from popular sports (such as surfing) or from leisure and recreational activities, in which popular sport is a major component.

Furthermore, it is difficult to separate sports and recreational activities that take place out at sea, from those on the coast. A variety of activities is available to the public visiting the seashore: swimming, fishing, boating, surfing, or diving. The varied reasons for visiting the beach are often combined. However, this chapter will focus on activities that take place only in the maritime space, especially those that are further away from the coastline (boating, scuba diving) and require more extensive infrastructure than those required for offshore activities (such as swimming or stand up paddle - SUP).

A review of the volume of participation in maritime sports and recreation activities indicates a growing interest in the utilization of maritime space for these purposes.

Despite the potential, importance and scope of the increased activity, these fields are not comprehensively managed at the national level and is decentralized in terms of jurisdiction between various government ministries and local authorities. For example, maritime sports and scuba diving are under the administration of the Ministry of Culture and Sport, while the required physical infrastructure is the responsibility of the Administration of Shipping and Ports of the Ministry of Transport. Formal maritime



education jurisdiction (as mentioned, there is difficulty separating maritime sports and education) is divided between the Ministry of Education, the Ministry of Defense, and local authorities. In the absence of a comprehensive vision and centralized arrangement at a national level, marine resource utilization for the public welfare appears less than optimal.

Popular sports, leisure and recreation activities can be divided into three groups, depending on the infrastructure required:

- **Activities that do not require any physical infrastructure:** An extensive public utilizes the beaches for diverse physical activities that do not require infrastructure (apart from an accessible and clean beach).
- **Activities that require basic onshore infrastructure, without maritime infrastructure:** popular and accomplished sports activities, including various clubs for sports, that do not require special infrastructure such as surfing, windsurfing, SUP, etc. These clubs, which engage in training and exercise, operate optimally through fixed coastal infrastructure storage facilities on limited space, operation, and training.
- **Activities that require infrastructure on shore and at sea:** various types of cruise activities, diving and maritime education and competitive sport. These activities are usually carried out in an organized setting (through sports associations) and not privately. Infrastructure required for this group of activities are:
 - Anchorage berths, for small sports vessels.
 - Infrastructure associated with docking / berthing activities: classrooms, storage areas for vessels and equipment, operational areas, parking and so on.
 - The presence of non-docking access and descent points into the sea, which allows for lowering of sea vessels (small vessels privately stored on land) - requiring regulated access for vehicles, a downhill slope and a sailing corridor isolated from bathers.

2. Policy guidelines

2.1. Policy for leisure, recreation and sports activities in the marine area

- A. The Inter-ministerial Committee for the Maritime Space will formulate a national policy for the development of a diverse range of sports, leisure and recreation activities on the shores of Israel and in maritime space; from maritime education and amateur sports to competitive sports. This policy will address, among other things, the physical infrastructure required for the various activities and the tools to encourage collaborations for the efficient use of the physical infrastructure by a large number of users.



In formulating the policy, the Inter-ministerial Committee will examine, with the extensive consultation of stakeholders, the full range of topics, including:

- Mapping existing activities in the fields of maritime education and sports in Israel, the material needs required for the existing activities and setting goals for their development.
- Mapping the scope of users and types of activities for leisure and recreation purposes at beaches and at sea.
- Mapping and analyzing the possibility of separating bathing and recreational beaches from beaches where water sports infrastructure will be located.
- Identify the tools and incentives needed to encourage the maritime sports in Israel.
- Recommendations for priorities, phases and the effective utilization of marine and coastal resources and infrastructure, required for the full range of maritime sport and educational activities.
- Examine the options for consolidating onshore infrastructure for offshore maritime activities of sailing and diving.
- Examine the possibility of pooling together all the resources required for maritime education and sports activities (Ministry of Education, Ministry of Culture and Sport, sports associations, and municipal budget).
- Examine the possibility of increasing the activities of maritime education and sports in the existing marinas.
- Establish onshore storage facilities (dry storage) for vessels that are inactive or with little activity.
- Coordinate planned activities with the Nature and Parks Authority in relation to maritime sports and recreational activities in marine national parks and nature reserves.

B. After formulating the overall policy, action plans will be prepared for its implementation by any local authority located along the coast, in coordination with national bodies engaged in maritime education and sports.

2.2. Launch ramps on the beach

Essential infrastructure for promoting activities in maritime education, recreation and sports on the coast and the sea.

There is a shortage of locations that allows small vessels to be launched into the sea. Today there are launch ramps in Ashdod, Ashkelon (marina) and Poleg beach in Netanya. In the north of the country there are launch ramps for the small vessels used



for enforcement and supervision.¹³ Arranging additional launch ramps and operating them for the benefit of the general public active in maritime sports will allow:

- Significant expansion of maritime sports activities accessible to new audiences (currently present mainly on the piers).
- Small boats parked onshore (not necessarily close to the shore), could utilize offshore vessel launch ramps, thus somewhat reducing the demand for berths that are in short supply.

2.2.1. Policy guidelines

A. The formulated policy will comprehensively examine the layout of launch ramps for small vessels and related infrastructure, in order to promote maritime sports.

B. Guidelines for locating the launch ramps:

- Priority will be given for their location on damaged beaches and beaches with vehicle access and parking.
- Safety factors related to the separation required between boating and declared or active bathing areas will be considered.
- The environmental impacts of launch ramps will be examined in accordance with the policy guidelines for marine and coastal structures.
- To the fullest extent possible, launch ramps that may damage hard substrate or that require a significant breach of a natural coastal cliff for their establishment will not be installed.
- Plans for the Installation of launch ramps on sandy beaches, will be in consultation with the Nature and Parks Authority regarding sea turtle nesting sites, including the possibility of seasonal use of specific coastal sections.
- As far as possible, and taking into account operational and safety considerations, the launch ramps will serve as many users for different needs as possible and will not be limited to an exclusive user.

2.3. Scuba diving and diving sites

In Israel, there are over 300,000 qualified scuba divers, 35,000 of whom are active divers operating in 23 centers located along the Mediterranean and Red Sea coasts. The Ministry of Culture and Sports through the Sports Diving Authority regulates the diving sector. The dive industry enjoys a relatively high demand but suffers from a lack of infrastructure that, among other things, will ensure dive safety and wider accessibility to the sport.

The Sports Diving Authority will complete the preparation of a comprehensive policy for diving sites, artificial reefs, and underwater parks (which is currently in

¹³ The approved plan for Achziv beach reserve statutorily regulates launch slopes



development), in consultation with environmental factors. The Inter-ministerial Committee for the maritime space will advance the statutory regulation of the necessary policy components.

The Inter-ministerial Committee for the Maritime Space will work to secure the status of major dive sites as dive parks, in coordination with the Sports Diving Authority. In marine areas designated in the Policy Document as National Parks and Nature Reserves, this will be done in coordination with the Nature and Parks Authority. Safety restrictions regarding fishing and motor boating activities, required to maintain the welfare of the divers, will also be included.

As part of the national parks' conservation Interface programs, the interface between diving and nature conservation will be regulated in the national parks and nature reserves.

Diving boats will be allowed to launch into the water in marinas.

2.4. Berthing for small vessels

Marinas constitute an essential physical infrastructure for a variety of maritime educational activities as well as competitive and popular sports, which contribute to leisure, recreation, and tourism activities. Analysis of future trends indicates an expected shortage of berths for small vessels. The proposed policy on this topic is detailed in the Marine structures - ports and marinas Policy chapter.

- A. The national outline plan for marinas will examine the tools to increase maritime education and sports activities in order to increase maritime education and sporting activities in their field. The plan will define berthing and terrestrial areas for expansion of activity.
- B. Licensing of vessels will remain under the responsibility of the Administration of Shipping and Ports, which may authorize the Yachting Association to issue specific qualifications in their field of activity.

2.5. Regulating the operation of jet skis

Jet skis require designated segregated spaces, as their activities do not align with the activities of other small vessels and endangers bathers, divers, and swimmers. Due to the conflict of this activity with many other sports and recreational activities, the limited number of users and maritime space required for it (including launch ramps), this use should be considered as a low public priority. Infrastructure development and regulation of the use of jet skis will be set in areas that do not interfere with bathing beaches, non-motorized maritime sports, or conservation of natural assets and heritage.



2.6. Informal maritime education

Informal maritime education is currently conducted mainly through the Maritime Sports Associations and private clubs. In order to increase the scope of maritime educational activity, a comprehensive perspective is required, combined with the accompanying leisure and recreation aspects, the physical-infrastructure factors and increasing of public investment.

- A. The Inter-ministerial Committee for the Maritime Space will work to centralize and coordinate informal maritime education and sports activities, with the exception of activities in national parks.
- B. A comprehensive activities review will examine the expansion of the scope and budgets of activities of sports associations.
- C. An environmental and ecological education curriculum needs to be incorporated in sports associations and private clubs for those who engage in maritime sports, leisure tourism and marine recreation. The curriculum should focus, among other things, on the context of the marine environment, the conservation of natural assets and marine and coastal heritage.
- D. Sports associations and clubs must be harnessed for regular participation in beach clean-up operations and landfill disposal.

2.7. Formal Maritime Education

Formal maritime education, which is conducted through maritime schools and maritime education centers, form the foundation for fostering awareness of the sea and for the maritime vocational training of professional maritime personnel. Although relatively small, this sector is managed by two entities: maritime schools are run by the Governmental Maritime Education Society, and the Maritime Education Centers are operated by the Physical Education Division of the Ministry of Education.

- A. The Inter-ministerial Committee for the Maritime Space will formulate an overall vision for the maritime education and qualifications of maritime professionals necessary for the development of blue economy industries.
- B. Seamanship should be separated from physical education and developed as an independent field, as set by a team assembled to prepare a curriculum for the teaching of all the central subjects of maritime education.
- C. Appropriate content on marine natural system conservation and awareness of the marine environment will be added to the maritime education curriculum.
- D. The launching of maritime education centers in other local authorities (for example: Netanya, Hadera, Kiryat Yam and Jasser a Zarqa) should be considered.
- E. In order to draw a greater public towards the maritime professions and in light of the difficulty of recruiting students to enroll in maritime schools (partly



because two of the three existing schools are boarding schools), the conversion of non-board secondary schools into learning institutions specializing in seamanship and maritime education, and / or developing a maritime education track in regular urban schools should be considered.

- F. The Inter-ministerial Committee for the Maritime Space will cultivate professional personnel to teach the vocations related to maritime education and sports.

2.8. The Sea Trail

An example of strengthening the public's connection with maritime space is the Sea Trail, a project proposing to establish a 240 km long hiking trail, from Rosh Hanikra to Zikkim, along the Mediterranean coast. The project aims to establish a continuous and guided national walking path along the Mediterranean coast of the State of Israel which will provide the general public with greater accessibility to the sea and its beaches with an emphasis on; preserving natural and environmental assets, strengthening maritime heritage and culture and creating an affinity for boating and maritime sports activities.

The trail is planned to be established as close as possible to the water, based on existing infrastructure and connected to pre-existing coastal trails and urban promenades, while minimizing environmental impact and taking into account safety considerations in various sea conditions. The local authorities and the Nature and Parks Authority will have jurisdiction over the trail sections that will pass through their area.

Some sections of the trail already exist, and some are in advanced planning stages. A pilot section for the sea trail is being promoted on the coast of the Carmel Coastal Regional Council. Within this framework, the planning principles of the sea trail will be reviewed as well as tourism and economic elements.



Fisheries

Activities in Maritime Space | Fisheries

1. Overview

Fishing has social, health and cultural values. Fishing activities should be in balance with the conservation of the marine environment in general and with the maintenance of the fish reserve in particular. For decades, the decline in the fish stock in Israel's Mediterranean maritime space has been documented, along with a decline in fishing. The chapter on Fisheries Policy defines the regulations for the management of the fishing industry to ensure its long-term sustainability. **This policy reflects a shift from the traditional short-term approach of developing the fishing industry to maximize the fish catch, to the long-term policy of limited fishing to protect fishery resources and preserve the natural environment.**

On December 22, 2016, new fishing regulations reflecting this policy were issued, which dramatically changed the Israeli fishing industry. For the first time in 80 years, since the Mandatory Fisheries Ordinance was written, regulations were enacted that significantly restrict all Israeli fishermen in the allowed duration, area, and fish landings.¹⁴ In May 2018, the Nature and Parks Authority replaced the Ministry of Agriculture in conducting fisheries inspection and enforcement.

2. Policy guidelines

The main objectives of the policy guidelines for the management of the Mediterranean Fisheries in Israel are:

- To ensure the future continuance of the fisheries.
- To reduce the threats to the marine ecosystem resulting from fishing activities.
- To reduce conflicts between fishing and other maritime activities.

The policy is based on the key principle of Ecosystem Based Fishery Management. This approach places the fishery as part of the ecosystem and recognizes the biological, economic, and social complexities of managing fishery resources as a renewable resource. Its aim is to optimize (as opposed to maximize) fish landings and fishing ventures, whilst improving the state of the ecosystem, reducing the risk of irreparable damage, and adopting precautionary approaches in cases where uncertainty exists. In Israel, multi-species fishing is conducted, but inventory estimates have never been performed for any of its dozens of

¹⁴ The restrictions include a prohibition on coastal fishing during the fish breeding season, a prohibition on seine fishing less than 500 m offshore, a prohibition on trawling immediately after the breeding season (spawning season), new line restrictions imposed on a number of fish species, daily bait quotas for amateur fishing and more. Fishing trawlers were forbidden to operate in the northern sector of Israel (north of Dor Beach), and in the southern sector they were forbidden in 11 major bedrock areas, and in shallower areas of 40m depth north of Bat Yam and 30 m south of Bat Yam. The minimum eye size allowed for use in fishing nets and standing nets has been increased, and a move to purchase scrap trawler ships has begun in 2017 (though only five vessels have chosen to retire so far). The new restrictions constitute a serious loss to the livelihood and employment of fishermen in the short term. Imposing such significant fishing restrictions entails inquiry into fisheries compensation.

target species. In a state of uncertainty and lack of this basic information, the use of the precautionary principle means reducing the fishing effort in Israel's maritime space and in its duration.

2.1. Fisheries Ordinance and regulations updates.

The Fisheries Ordinance and regulations requires an updated in accordance to indicators, collected scientific information and policy impact monitoring results. When updating the ordinance and regulations, the following areas should be addressed:

- A. The establishment, composition, and powers of the advisory body (see subparagraph 2.2)
- B. The referencing to the variously acceptable fishing methods in Israel - examining the desired range and proportions of fishing methods in Israel
- C. The updating of species and sizes of wildlife allowed to be taken out of the sea.
- D. The accuracy of definitions of permitted fishing equipment.
- E. The determination and establishment of sealed fishing areas and the duration of fishing prohibitions.
- F. The monitoring of the status and health of fisheries and of the policy implementation.
- G. The extension of the fisheries ordinance to include Israel's exclusive economic zones.
- H. Fleet size

2.2. Establishment of an expert advisory body for the fisheries Director-General

Establishing an expert advisory body for the fisheries director-general, which will include representatives of the academy, the Ministry of Agriculture, the Nature and Parks Authority, the Ministry of Environmental Protection, the Ministry of Finance and commercial and amateur fishermen, who will be responsible, among others, for the following elements:

- A. Provide expert advice on issues such as restrictions on fishing (time and space) to enable its sustainable management.
- B. Liaise with fishermen to gather information on their activities and consult with them at various stages of decision making.
- C. Identify knowledge gaps that need to be reduced through research. For example: information about the fish landings and coastal fishing and trawling ventures, information on sensitive species.

- D. Provide guide outlines for research and monitoring that will support the decision-making process for selected target species, with emphasis on commercially important species.
- E. Perform multi-year inventory assessments and monitoring of the status of the target species in relation to fishing ventures and external influences. Accordingly, recommendations for fishing venture management will be formulated, including permitted fishing methods and equipment.
- F. Determine and adopt the indicators and criteria for assessing the effectiveness of the policy measures at sea.
- G. An economic analysis for ways of coping with falling prices, as a result of seasonal strikes and market takeovers by imported fish during the off season, will accompany the restrictions on fishing.
- H. Promote regional scientific cooperation with international bodies and neighboring countries and regional coordination of fisheries policy, in consultation with the Ministry of Foreign Affairs.
- I. Provide recommendations for updating the Fisheries Ordinance and Regulations according to the accumulated information and knowledge.
- J. Perform spatial and technological analysis of commercial coastal fishing and recreational fishing activities in Israel and provide recommendations for updating the policy document.

2.3. Building capacity to enforce fishing regulations

The basic prerequisite for effective fishery management in Israel is the existence of effective monitoring and enforcement capabilities, in time (day / night, during weekdays and holidays and between storms in winter) and in space (at sea and in port). Significant improvement in the enforcement capability of the fisheries policy in Israel commences with the signing of a cooperation agreement, between the Fisheries Division in the Ministry of Agriculture and the Nature and Parks Authority on the enforcement of fisheries regulations, where the latter received full responsibility for enforcing the fishing regulations. Accordingly, the Maritime Enforcement Unit of the Nature and Parks Authority began to enforce the fishing laws and regulations and led to a significant change in the level of enforcement.

2.4. Fisheries licensing policy updates

- A. Licensing must effectively limit the size of the commercial fleet by defining and limiting the number of active vessels and by canceling fishing licenses to reduce the excess of inactive vessels; whilst concurrently regulating the licenses of regular active fishermen.

- B. Obtaining a mandatory license that is suitable for all fishing occupations, including offshore fishing (a daily or temporary license that can be easily issued for a trial period).
- C. Prevent fishing during the breeding and recruitment season of the keystone species by any fishing method, in accordance to the recommendations of the advisory body to the fisheries director-general.

2.5. Spatial restrictions on fishing

- A. The Department of Fisheries in the Ministry of Agriculture will promote spatial and technological analysis of coastal fishing activities of commercial and recreational fishing in Israel, including favorited fishing areas, and will coordinate its incorporation into the policy document updates to Israel's maritime space in the Mediterranean.
- B. Fishing in the area of a marine nature reserve is prohibited, unless within the scope of regulations, a legislative act or permit shall be determined by the regulator in the nature reserve by virtue of the Law of National Parks, Nature Reserves and National Sites and Memorial Sites.
- C. Fishing allocation within designated areas for nature reserves, pending their declaration, shall be determined by the fisheries director-general in consultation with the Nature and Parks Authority. Priority will be given to placing spatial restrictions on fishing in areas designated in the document as exploration areas for nature reserves.
- D. At the Dor Habonim Nature Reserve, where small scale traditional fishing overlap with marine reserves, the Nature and Parks Authority and the Fisheries Division will offer appropriate solutions to continued fishing activities in balance with nature conservation restrictions; by reducing current damages and finding solutions that will ultimately remove fishing from the area.
- E. Ban on trawling on hard substrate.
- F. The fisheries director-general will determine the regulations that cover fishing; its various methods, located in rocky reefs areas, special marine areas, and streams, in consultation with the Nature and Parks Authority.
- G. Fishing from islets and their surroundings will be restricted.
- H. Trawling has been diverted from the coast and is forbidden in the north of Israel, with the aim of reducing damage to ecologically valuable areas (such as hard substrates), protecting endangered species and reducing conflicts with other fishing practices.
- I. Trawling will be forbidden in deep coral areas.
- J. Angling must be reduced on rocky reefs due to their ecological sensitivity and gradually be diverted to designated piers to be erected on existing and new marine

structures, with the permission of the dock manager. In conjunction with the development and regulation of safe fishing points on marine structures, the fishing restrictions on rocky reefs may be increased.

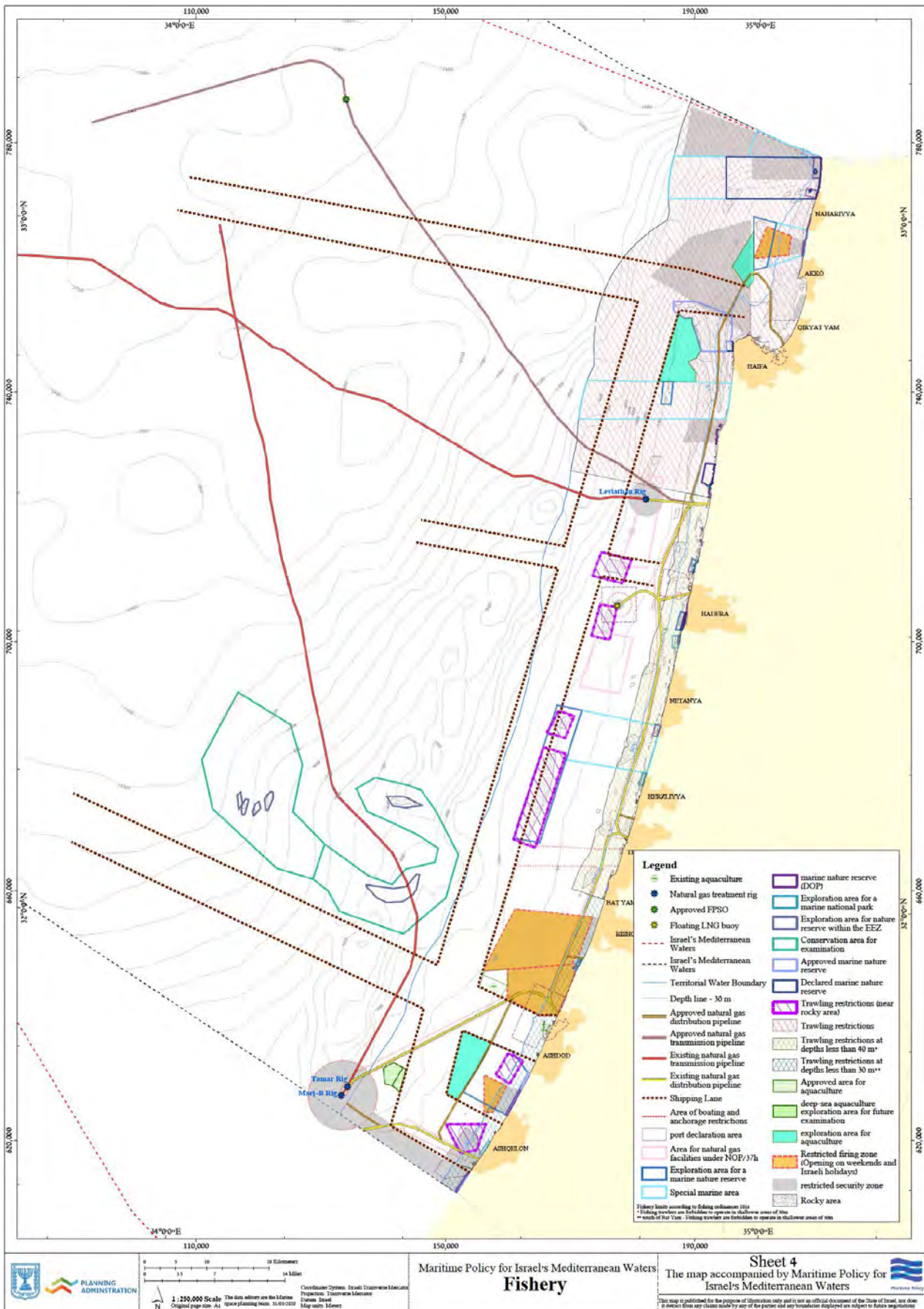
- K. The Fisheries Ordinance must also be applied to exclusive economic zones to enable the management of natural resources and enforcement.

2.6. Trawling

Trawling creates friction and conflicts with most users of the maritime space. The negative effects of this industry on the marine environment, along with the multiple side-effects of the fish landings, are in opposition to the industry's modest benefits. Considering the expected allocation of maritime space to other users (aquaculture, infrastructure, marine protected areas, leisure and recreation, etc.) and spatial limits prescribed by the latest fishing ordinances, there is an anticipated 40% reduction in the current area used by fishing trawlers.

- A. Trawling must be continuously reduced and eventually fully halted through amendments to the regulations. In conjunction, a suitable compensation package should be considered for the trawl fishermen.
- B. Further reduction of trawl fishing zones will be, initially, in areas defined in the policy document as exploration areas for nature reserves and, in the following stage, in areas designated as special marine areas.
- C. Seasonal trawling will be forbidden during the spawning season.

Figure 8: Fisheries Map





3RD SECTION | Development of Maritime Space



Hydrocarbon Production



Development of Maritime Space / Hydrocarbon Production

1. Overview

Hydrocarbon production (natural gas and oil) are of economic and national strategic importance. Marine activity in this field includes three types of components:

- **Fixed infrastructure components** – treatment and production rigs, various types of pipes and cables, well systems.
- **Activities and offshore works** – various surveys, exploration drilling, establishment of fixed infrastructure components, operation, and maintenance of production systems.
- **Ports hinterland** on-shore logistic support department serving needs for mooring and docking (see reference in chapter on marine and coastal structures)

Concurrent to the economic and environmental benefits for the State of Israel associated with the use of natural gas, there are environmental impacts attributed to the hydrocarbon exploration and production activities, in its establishment, ongoing operation and in the event of a significant malfunction or oil spill incident.

A number of reasons can cause sea water pollution by oil as a result of a significant event during the search and production of hydrocarbons. This is in addition to the risk of contamination events on a similar scale arising from marine accidents involving fuel transport vessels. Large scale oil pollution events pose a threat to the natural environment and to human activities at sea such as: sea water desalination, power generation at coastal power plants, production of food through fishing or aquaculture, and the use of marine resources by the tourism industry, marine sports and beach resorts.

In order to assess the environmental impacts of this expanding sector's activity and the future effects on local natural marine life, an environmental strategic survey has been prepared by the ministry of Energy. Consequently, a new licensing map was recently released (2019) and there is active promotion of gas and oil exploration initiatives.

2. Regulation

2.1. Overview

Hydrocarbons are produced under the Oil Act of 1952, which gives the Commissioner for Petroleum Affairs extensive powers in aspects of planning, environment, monitoring of activity and granting of exploration licenses and lease rights. Analysis of the existing situation presents four main issues:



A. Interface with other maritime users

Exploration licenses and of lease rights that follow them, are granted without an obligation to coordination with other users a sea (except security forces and ASP in certain cases). Consequently, exploration licenses were granted in large marine areas, where a wide range of activities and users from other sectors (shipping, energy, aquaculture, and fishing) is conducted.

In terms of existing Israeli law, the licensee / lease holder has exclusive rights to exploration and /or production in the area, that is - there is a restriction on the exploration rights and production rights of other entities in the same area. Safety restrictions also apply. According to international law, a safety zone of up to 500 m is permitted to be established around the rigs.

The granting of a license and consequent leasing rights to hundreds of square kilometers at sea provides the licensee and lessee exclusive status for exploration and production only, and does not imparts authority or prevents other types of activities and uses within the licensed / leased area.

Currently, the new licensing map does not include areas within territorial waters. Despite the above, questions remain about the future possibility of various activity or development by various users within licensed and leased areas.

The hydrocarbon sector's activity is one of the few human activities in the exclusive economic zone and its interface with other maritime users is almost non-existent. However, in the medium and long term, with the technological improvement and knowledge in this area, there may be future uses added that require coordination.

B. Planning procedures for establishing natural gas and oil infrastructure

Currently, executing drilling activities to search for petroleum or natural gas within territorial waters involves the approval of a district planning and building commission through a procedure of deviation from a building plan under the Planning and Building Act. The district committees lack the unique expertise and knowledge needed to approve engineering programs for exploration and production of natural gas and oil at sea. For detailed recommendations on planning, see the Arrangement, Coordination and Planning in the Maritime Space chapter.

Establishment of natural gas and oil infrastructure in the **exclusive economic zone** is approved (together with an environmental assessment) by the Commissioner for Petroleum Affairs exclusively.

C. Environmental regulation

The Commissioner for Petroleum Affairs, within the authority as instated by the Petroleum Law and Regulations, also serves as a regulator in the **exclusive economic zone** - approving



the establishment of the facilities, the environmental assessments and holds responsibility for the safety and monitoring aspects.

As of 2012, mandatory procedures for environmental analysis and its examination (by an environmental assessment) have been agreed upon by the Ministry of the Environmental Protection and the Ministry of Energy. In accordance with this procedure, the Commissioner authorizes exploration activity following the consultation and coordination with the Ministry of Environmental Protection regarding the required environmental examinations (approval of monitoring plan and the environmental assessment), and following the additional approvals required under the authority of the Ministry of Environmental Protection; in aspects including; issuing sea discharge permits, emission permits, toxins permits and emergency plans for pollution of the sea

D. Monitoring the exploration and production systems

The Oil Act and its regulations also give the Commissioner of Petroleum Affairs the exclusive authority to supervise the operation and safety of the facilities. In much of the developed world, lessons that have emerged regarding accidents, safety, and pollution events have identified the importance of separating these authorities. However, it has been found that where activities are limited, the separation of authority will be required at a later stage, when the activity intensifies. In some cases, it was found that it is important for the authorities to be under the determinant of the policy (the Minister); as in the US and as was concluded in Australia, after a major marine pollution event (Montara oil spill).

2.2. Policy guidelines for regulation of natural gas and oil at sea

A. Authorizations

- Hydrocarbons will remain under the authority of the Ministry of Energy.
- Maritime space development will be coordinated with the Israel security establishment. Any infrastructure that could affect flight safety will be approved with the Israel security establishment. The design / development of underwater piping that produces flow noise will be evaluated with the Israel security establishment.

B. Granting of search licenses and lease rights and coordination with different users

- The minimum offshore distance for granting oil rights is 7 km, as set in the strategic environmental survey. The granting of an oil right at a distance of less than 7 km from the shore will be granted after approval of a planning institution and in consultation with the strategic environmental survey steering committee.



- As other countries have additional rights to the exclusive economic zone and continental shelf (such as laying of cables and piping), an analysis is required to reduce the potential for disputes in the international arena prior to granting licenses and leases.

C. Planning and licensing for infrastructure in territorial waters

In addition to existing legislation and in accordance with the chapter ‘Arrangement, Coordination and Planning in the Maritime Space’, the planning Committee for the Protection of the Coastal Environment will have sole authority to approve a plan and grant permits in its jurisdictional area. Existing planning procedures will remain. For more information on this subject, refer to the chapter ‘Arrangement, Coordination and Planning in Maritime Space’.

D. Improving the coordination with other users and planning coordination prior to the establishment of infrastructure in the exclusive economic zone:

When approving a development plan for natural gas and oil operations in the exclusive economic zone, coordination will be carried out with a limited forum of the Committee for the Protection of the Coastal Environment. For more information, see the chapter ‘Arrangement, Coordination and Planning in Maritime Space’.

E. Planning decisions relevant to the environmental impacts of natural gas and oil infrastructure components:

The *Committee for the Protection of the Coastal Environment* will determine and sanction the approval of pipelines and facilities for the production and exploration of natural gas at sea within territorial waters, as well as, survey the environmental conditions of the operations and the means for reducing adverse environmental impacts (see the planning chapter).

The *Committee for the Protection of the Coastal Environment* (in a limited forum) will be the centralizing and coordinating body of the various uses and activities within the **exclusive economic zone** (see the ‘Arrangement, Coordination and Planning in Maritime Space’ chapter). The environmental effects of the natural gas infrastructure components will be surveyed by the Ministry of Energy in consultation with the Ministry of Environmental Protection.

Legislation will be updated as needed as the hydrocarbon sector's maritime activities expand, in order to balance the authority of Ministry of the Environmental Protection and the Ministry of Energy over the environmental impact assessment process for natural gas and oil production in the exclusive economic zone.

Security, safety, and defense will be considered when designing development systems in the maritime space.



F. Monitoring the safety of exploration and production systems

The Inter-ministerial Steering Committee for Maritime Space will appoint a professional team to review the need to update regulatory powers, in accordance with changes in scope and type of activities and will recommend changes as needed.

3. Effects of hydrocarbon activity on the natural marine environment

3.1. Assessments for a significant oil pollution incident

The Commissioner for Petroleum Affairs requires the developer to submit guarantees and insurance by means of a 'negotiable instrument' for the possible event of various incidents, including a marine pollution event. The entrepreneur is also required to prepare models of dissipation, compliance with standards and additional requirements to reduce risks.

As part of the State of Israel's preparations for marine pollution events, this topic should be regulated by legislation.

However, Israel's estimates of marine pollution events, considering the increase in the hydrocarbon sector's activity, must examine the need for updating the National Contingency Plan for Preparedness and Response to Oil Pollution Incidents. This plan is intended to provide a national resolution for preparations for and response to marine pollution events, secured in primary legislation and budget accordingly.

3.2. Reducing environmental impacts of the hydrocarbon sector activities on maritime space

Among the topics dealt with by the Environmental Strategic Survey for the exploration and production of oil and gas at sea, was the identification of areas that are environmentally sensitive to the hydrocarbon sector's activities in the maritime space and proposed rules for protecting them in relation to development activities, thus making a major contribution to existing knowledge and an important basis for decision making.

The rules were formulated and appended to requirements of the Ministry of Energy as part of a competitive process, with licensing demands and the conditions of the 'negotiable instrument'.

4. Research and information

4.1. Research activity on drilling and production rigs

When issuing a lease and a license, it is recommended that the Commissioner for Petroleum Affairs, in consultation with leading academics, considers establishing cooperation between rig operators and marine researchers. Such collaboration could open new possibilities for marine research that do not currently exist.

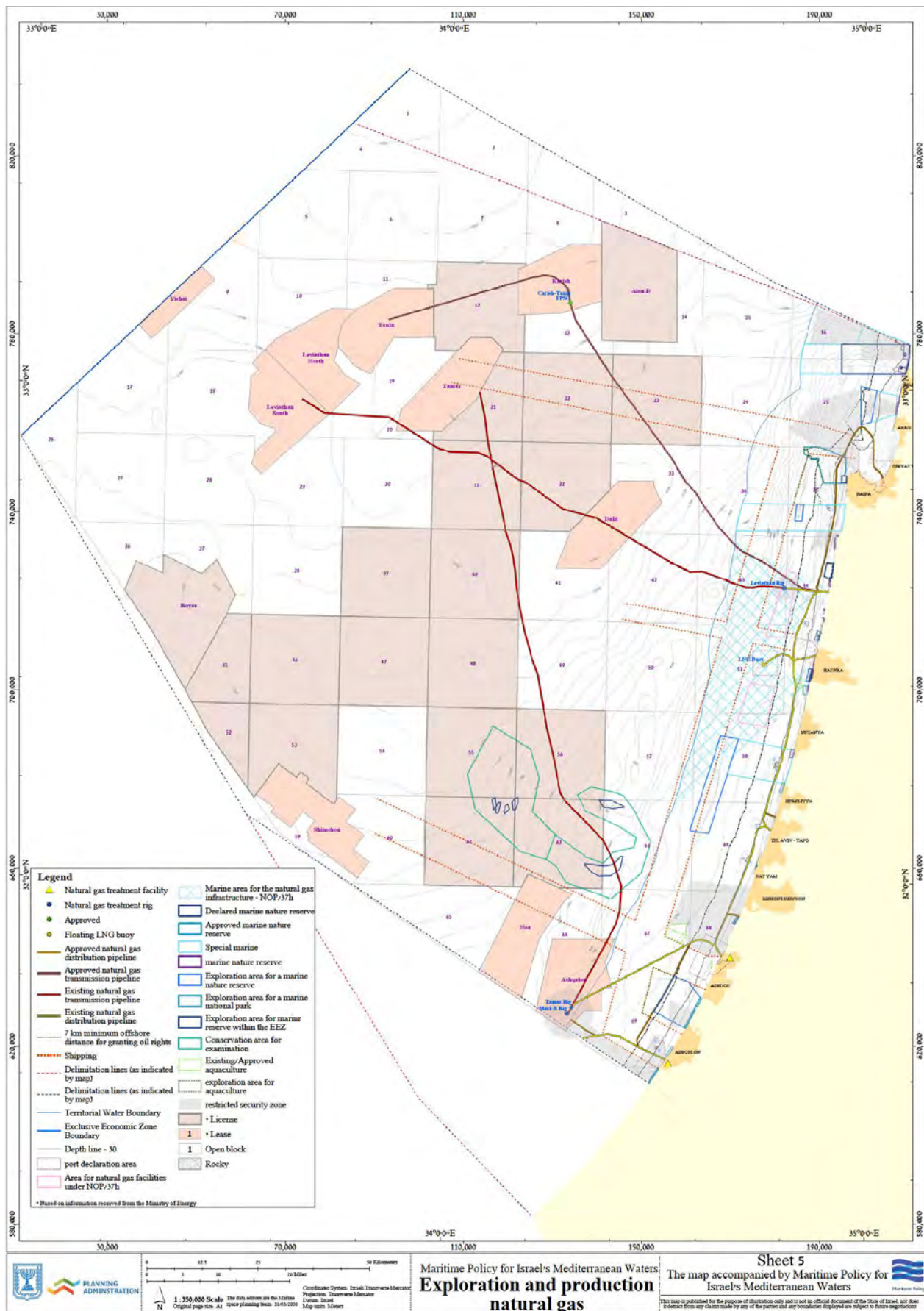


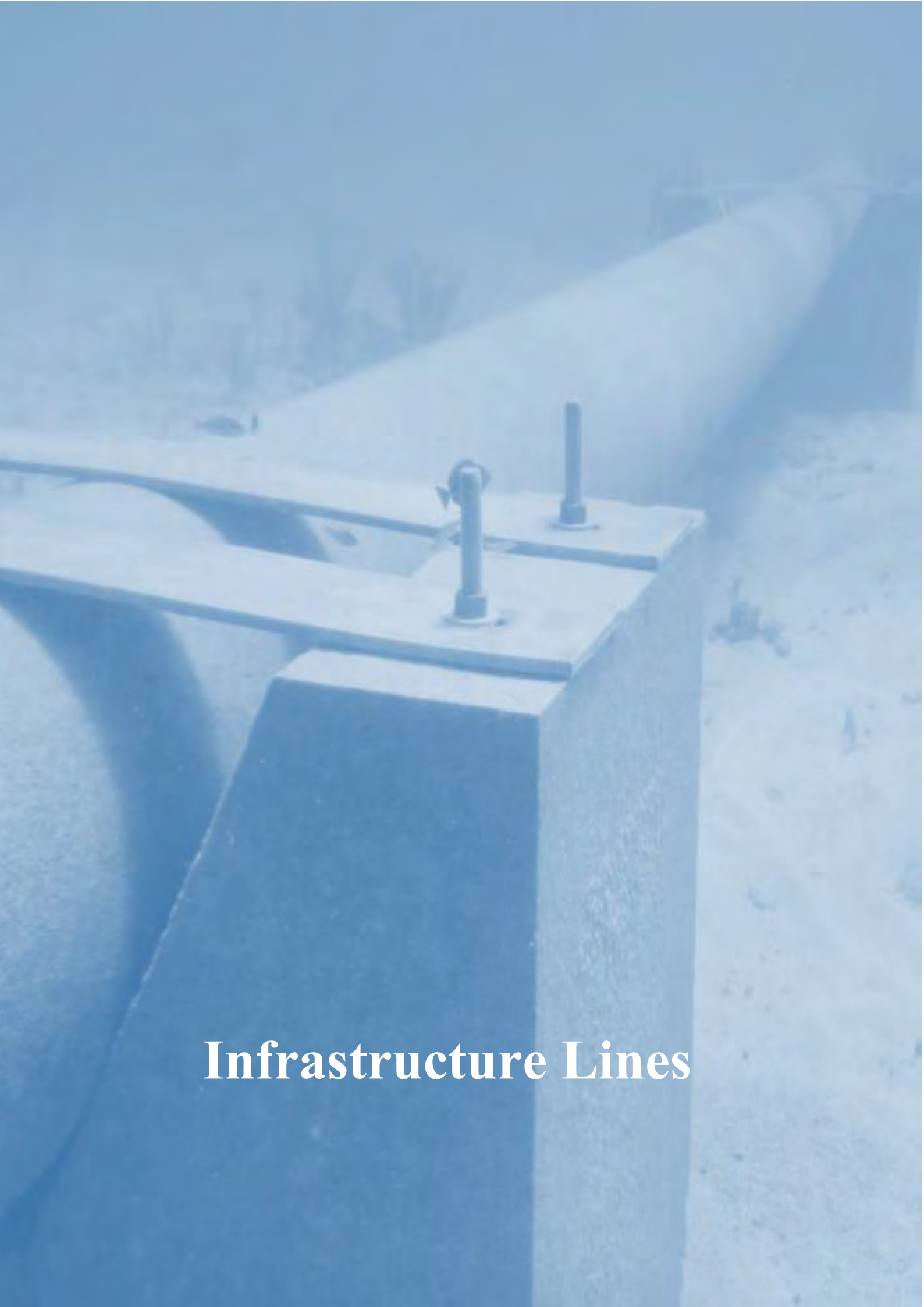
4.2. Information sharing

- A. In accordance with the Israeli Petroleum Law, the Commissioner for Petroleum Affairs will establish and publish the rules for sharing raw and processed information of surveys and data submitted to him as part of the applications for licenses and holdings; according to existing needs and restrictions.
- B. In this framework, monitoring data will also be published as part of the requirements of the licensees and holders, as well as environmental assessments and environmental impact assessments carried out as part of planning procedures and environmental management plans for marine projects (raw and processed data will be presented)
- C. Owners of marine pipelines and facilities (existing and planned) will provide the Israel Marine Data Center with a detailed description and numerical information, including after construction, of the pipelines and associated infrastructure at sea.
- D. For more information, see the Management and Access to Information chapter.



Figure 9: Hydrocarbon search and production





Infrastructure Lines



Development in Maritime Space / Infrastructure Lines

1. Overview

There are dozens of marine infrastructure lines varying in type, diameter and length in Israel's maritime space in the Mediterranean, which are an important part of the country's strategic infrastructure.

These lines can be classified into three main groups:

- A. Conduit for hydrocarbon transportation. For example: supply piping, flowlines and export pipelines for natural gas, condensate, pipes serving the supply system for natural gas, LNG transmission pipelines, fuel transmission pipelines.
- B. Marine piping of onshore facilities for suction or discharge of seawater. For example: seawater suction pipes and concentrate discharge of desalination or fishponds, saline outlet pipes, industrial connections, treated wastewater, sludge, and runoff drains.
- C. Communication lines and underwater cables. For example: national and international Internet communications cables, cables for monitoring and control of natural gas and oil wells, high voltage electricity cables (in planning).

The infrastructure lines lie on the seabed or beneath it. The purpose of infrastructure lines that float on the surface of the sea and those in the water column is to connect facilities located on the sea's surface to infrastructures located on the seabed and the beach. Despite the differences between the types of maritime pipelines and cables, there is a common denominator that allows them to be defined in a unified policy for the maritime space.

Analysis of the existing situation and mapping of the various infrastructure lines in the maritime space revealed that a clear policy is required for planning, laying, operation and abandonment / removal of the infrastructure lines and that laying them at sea, without coordination with other users, creates severe planning limitations and hinders future uses of the marine area. The following policy lines focus on four key areas:

- a. Integration, planning, and licensing cables and pipelines in the maritime space
- b. Principles for planning and layout of marine infrastructure lines
- c. Principles for the construction, operation, and abandonment / removal of infrastructure lines at sea.
- d. Regularization of the existing situation



2. Formulation of policy, planning and licensing of infrastructure lines in the maritime space

A. Overview

Development in the maritime space will be coordinated with the Israel security establishment

B. In economic waters:

- The planning of infrastructure lines in the exclusive economic zone will require coordination with a limited forum of the committee for the protection of the costal environment (see the chapter Arrangement, Coordination and Planning).
- The limited forum of the Committee for the Protection of the Coastal Environment (consultation) for planning coordination in the exclusive economic zone, which includes the Ministry of Energy will determine, as appropriate, the procedures for submitting the documents in the consultation process.

C. In territorial waters

- All marine infrastructure lines in territorial waters will require an approved maritime plan by a planning institution, according to the Planning and Building Law (including communications cables).
- The Committee for The Protection of the Coastal Environment whose powers will be expanded through an amendment to the Planning and Building Law, will establish work procedures for planning and licensing the various types of marine infrastructure in territorial water.
- Deployment of the underwater communication cables was previously carried out without planning consideration and produced a layout that restricts development in the maritime space. Legislative change that would require a preliminary planning process for communication cables, will also analyze the need to replicate existing cables should be promoted.
- The planning institution that reviews the plans for marine infrastructure lines in territorial waters will examine the need for the following documents, as appropriate and in accordance with National Outline Plan 41 (TAMA 41(:

The planning stage:

- Coordination with existing and planned infrastructure, marine structures, marine activity, and other users
- General engineering description of the requested infrastructure
- Analysis of the risks from human activity and physical conditions



- Detailed geophysical and geotechnical surveys and mapping of the area where the laying of infrastructure is planned
- A technical case study describing how the offshore and onshore operations are to be performed, the engineering characteristics of the cables/pipelines, how they will be used, and the measures taken to prevent adverse environmental impacts
- In pipelines with the potential to pollute seawater: the risks of damage to the marine infrastructure line due to natural forces, marine accidents and mechanical failures will be examined, and means will be offered to prevent and reduce the risks; including an emergency plan for the treatment of a pollution event.
- Archeological survey
- Environmental assessment
- Sub-marine piping plans that produces flow noise will be coordinated with the security forces.
- Abandonment or removal - Plans for laying marine infrastructure lines will include instruction for submitting a professional engineering-environmental opinion for the end of pipeline's life, including up-to-date mapping, information of its condition and examination of alternatives for dismantling or abandonment.

The planning institution that reviews the plans for marine infrastructure lines in territorial waters will examine the need for determining the terms and conditions for a permit, as appropriate:

- Maintenance procedures
- Monitoring plans to integrate construction and operation
- Rehabilitation plan to be implemented upon completion of the offshore installation
- Implementation and As Made plans will be submitted after the establishment of marine infrastructure lines

3. Principles of planning, construction, and abandonment of sea infrastructure lines

3.1. Overview

Experience shows that laying out of marine infrastructure that is not planned in coordination and in relation to the entirety of the marine area and its various users, creates severe planning limitations and significant damage to future usage.



It is difficult to attach marine infrastructure lines, as opposed to continental ones, as maritime projects require greater safety distances which increase as the depth of works increases.

The common resolution for the consolidation of land-based infrastructure in a corridor is not recommended as a planning approach in shallow water, for the following reasons:

- As the depth increases, greater safety distances between the lines are required, so the shape of the corridor perpendicular to the shore is that of a cone rather than a strip.
- In the safety and environmental aspects of line's survivability, there is an advantage to planning a shortest possible route between the two points it connects. The desire to attach infrastructures may extend the route of the lines.
- Planning the corridor of marine infrastructure lines near the beach requires laying them down at the same time or in coordinated stages.
- Construction of marine infrastructure lines at very close proximity to each other within the corridor increases the risk of damage to the lines, including implicated risks to the natural marine environment.

3.2. Policy guidelines for planning marine infrastructure lines

A. The Inter-ministerial Committee for Maritime Space will work, in coordination and jointly, with the certified bodies and the equipment proprietors, to formulate an integrated and long-term policy regarding marine cables and pipelines. The policy will constitute a basis for decision-making, planning, reduction of conflicts between infrastructures, and will boost efficiency of marine infrastructure development. It will include, among others:

- Reference to the entire 'lifetime' of lines and all the various types
- Mapping the planned and the existing conditions as stated in 4.2a
- Required coordination with additional maritime space users
- Principles for reducing conflicts between different infrastructures, including: rules for crossing over different lines; rules for reducing the risk of infrastructure damage as a result of nearby works; rules for copying marine infrastructure lines, etc.
- Principles for excavations, burying lines and sand overlaying
- Safety principles and operation rules
- Principles for control and monitoring of lines' existing conditions



- B. Guidelines for planning and construction for routes of marine infrastructure lines
- Effective laying of lines to minimize the disturbance to future development possibilities in the maritime space, coordinated and approved by the relevant bodies
 - Overlap with maritime spaces that do not have conflicting activities
 - Lines parallel to beaches will be plotted to be as deep as possible in order to reduce conflicts with existing and future marine infrastructure and other possible future uses
 - Proximity to security zones, will be carried out after coordination with and approval of the security forces
- C. The planning, construction, and operation of marine infrastructures, will be coordinated with the Israel security establishment to examine their impact on security activities. The security forces will be made aware of all marine infrastructure lines (not only those which cross restricted Security zones).
- D. It is necessary to avoid, as far as possible, mining or projection of sand and any activity that may alter the surface (which is not connected to line placement), near existing marine infrastructure lines.
- E. Displacement of communication cables - Within the framework of a maritime development plan, the need to displace communication cables and other underwater cables to allow development and marine activity may be examined.
- F. The deployment of underwater communication cables was carried out without planning consideration, which resulted development restrictions of the maritime space. The Committee for the Protection of the Coastal Environment will determine, as appropriate, plans for marine communication cables, including the need for displacement of existing cables.

3.3. Principles for the installation, operation, and abandonment of marine infrastructure lines.

- A. Marine infrastructure lines will be based on the best available technology (BAT) in all of the following: line specification and the installation, restoration, operation, control and monitoring technologies.
- B. The layout of marine infrastructure lines having potential to pollute, in connection with marine facilities or other lines, will ensure the ability to treat the polluting line in emergencies, and will strive not to cross other types of marine infrastructure lines or marine structures in any way that may limit pollution prevention operations.
- C. Embedding infrastructure lines in the seabed and safeguards:



- A new marine infrastructure line planned to be placed on the continent shelf (up to depth 60 m, except for an electricity cable and a communication cable), will be buried under the seabed, as required.
- Engineering solutions to cover and protect the marine infrastructure lines will be provided for situations where a buried line is required, yet the seabed conditions do not allow for the excavation and installation of a trench. The solution will be in accordance with the line's engineering characteristics, its importance to the economy, and the polluting potential of the line.
- A marine infrastructure line, which is a potential risk for sea pollution (with an emphasis on oil spills) due to danger for its physical damage (anchors, explosions, fishing activity, etc.), will be protected by appropriate means and methods.
- Where marine infrastructure lines are buried within the seabed, technology will be used to ensure the pipeline's route is covered at the end of excavation.
- Trench digging in the seabed for infrastructure line installation will be carried out in the framework of a "closed sand economy": the excavated material will be used to cover the channel, unless contaminated. In principle, additional sand from the natural system will not be utilized to cover the line.

D. Laying marine infrastructure lines on and near hard substrates with high ecological value:

- Quarrying in sandstone ridges for infrastructure line installation will be avoided as far as possible.
- Laying of marine infrastructure in close proximity to a hard substrate as abovementioned will use, as needed, means of planning (e.g. maintaining a separation distance), technical measures and measures of execution that will prevent or reduce negative effects of sediment disturbance, on the variety of species of the sandstone ridge (for example: excavation technologies which reduce disturbed sediment and timing the works to when the sea stream does not lead towards the sandstone ridge).

E. Infrastructure lines crossing through coastal and shallow waters:

- In order to maintain the sensitive and unique environment of the natural coastal area, crossing the rocky beach using cofferdam should be avoided and the use of pipe-jacking or guided horizontal drilling should be considered in beach rock coastal areas.
- Where the vertical drilling shaft will be erected on land, the location of the contractor's camp will be as far as possible east of the sandy beach, and based on analysis of land designation and use, infrastructure and



environmental and aesthetic sensitivity. It will not be established in nature reserves or national parks whenever possible.

4. Current Situation

4.1. Overview

The "engineering lifespan" of a marine infrastructure line is limited and varies according to the type of line and the standards under which it was planned and implemented. There are many marine infrastructure lines in Israel's maritime space, some active and others abandoned. Abandonment of offshore infrastructure lines, which is not based on a regulated abandonment plan, may result in sea pollution (in cases of pipelines transporting materials with potential for pollution), damage to other infrastructure lines, safety hazards, and the reduction of planning options for new offshore lines. The solutions for ending line activity are regulated abandonment of the line in place, or line removal.

4.2. Policy guidelines

The Inter-ministerial Steering Committee for Maritime Space will coordinate, in joint work and in coordination with the certified bodies and infrastructure owners, the actions required to regulate the status of existing lines, including:

- A. Mapping the existing and planned status of offshore lines as a basis for making planning decisions and preparing a work plan for handling inactive lines
 - Mapping will include all the types of lines in the maritime space and distinguish between active, inactive, and planned lines.
 - Estimating the engineering lifespan of the active lines and their physical condition
 - Abandoned lines according to their characteristics, the current available information on them, their physical condition, the potential for pollution and the infrastructure body responsible for them, whether active or inactive.
- B. The Inter-ministerial Steering Committee will work with the certified bodies that will present the policy for the regulation / treatment of abandoned / unused lines, and the required treatment. Unless a responsible body exists, the Committee will work to formulate the policy.
- C. The Inter-ministerial Steering Committee, together with the certified bodies, will formulate an order of priorities for the handling of abandoned infrastructure lines at sea, the manner of treatment required, and consolidate the development of their treatment.
- D. In accordance with the decisions of the Inter-ministerial Steering Committee and the certified bodies, the actions required of the abandoned or inactive lines owners shall be defined, including the dismantling of lines, or monitoring and control programs.



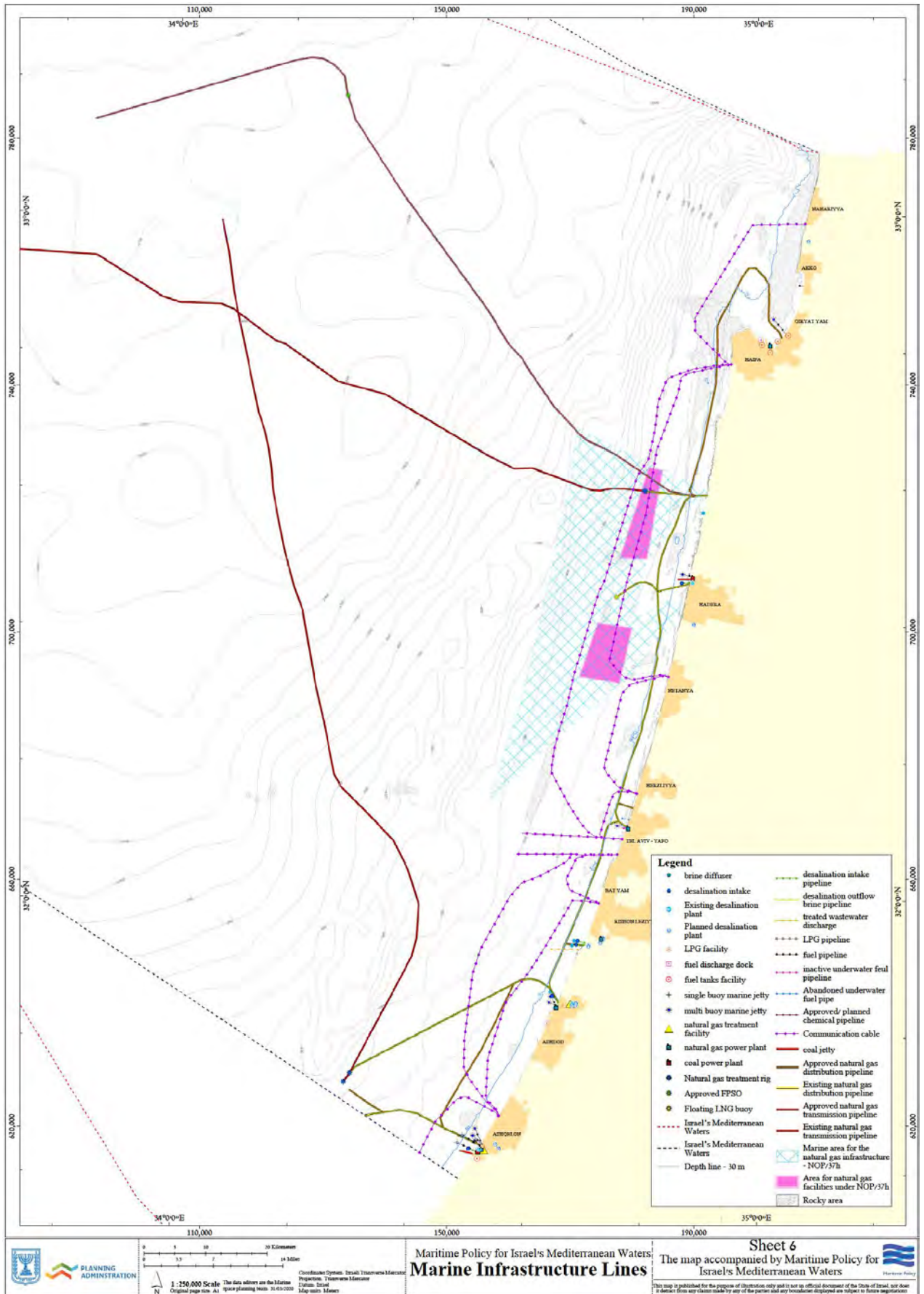
- E. In accordance with Inter-ministerial Steering Committee guidelines, infrastructure and industry bodies with inactive lines will be required to submit for approval, an appropriate engineering program for line handling, or monitoring and control.
- F. For marine lines with potential for marine pollution, the preventive measures required to treat the line in terms of marine pollution will be defined by the Ministry of Environmental Protection.
- G. An engineering plan to treat an existing marine infrastructure line that is inactive, but has the potential to pollute the marine environment, will include an environmental assessment under the guidance of the Ministry of Environmental Protection. The Ministry of Environmental Protection will submit an opinion to the Inter-ministerial Steering Committee and to the other certified bodies, regarding the appropriate alternative treatment and measures required to reduce environmental impacts.
- H. If the abandoned infrastructure lines are not associated with a responsible infrastructure or industry body, the Inter-ministerial Steering Committee will act to proceed with treatment and execute the required actions.


5. Information on marine infrastructure

Within the frame of the Israel Marine Data Center (see Chapter on Management and Access to Information), which is overseen by the Inter-ministerial Steering Committee, marine infrastructure planning information and spatial database will be presented to provide the information needed for planning bodies, and for decision making in plans and permits. The information will be updated regularly, and other stakeholders who use it will be classified for security clearance based on the type of information required.

Teams planning marine infrastructure lines will receive relevant data on the marine infrastructure and offshore and coastal structures in the area and surroundings of the planned marine infrastructure (depending on the level of security clearance).

Figure 10: Infrastructure Lines



An aerial photograph of a large offshore oil and gas platform. The platform is a complex of steel structures, including a tall derrick in the center, several processing units with storage tanks, and a helipad on the left. The platform is supported by a jacket structure. The background is a clear blue sky. The text "Marine and Coastal Structures" is overlaid in the lower center of the image.

Marine and Coastal
Structures



Development of Maritime Space | Marine and Coastal Structures

Dozens of marine and coastal structures are scattered along the shores of Israel. The purpose of this chapter is to outline policies for the establishment of offshore platforms, infrastructure and marinas and to outline policy guidelines for other onshore and offshore structures in relation to the morphological effects on sand movement associated with their establishment. The Maritime Policy document does not deal with islands for residential and urban utilization, but spatial layout may allow future establishment of these islands, if deemed necessary and if technologically possible. The chapter is divided into three parts:

- A. Marine Infrastructure Platforms
- B. Marinas
- C. Morphological aspects in the construction of marine and coastal structures: ports, breakwaters, groins.

Offshore platforms for marine infrastructure

1. Overview

The growing density on land, coupled with the increasing utilization of marine resources and the continuous improvement of engineering and marine technologies, will increase the relevance of establishing offshore platforms for infrastructure facilities in the coming decade. The establishment of offshore platforms for infrastructure will enable, among other things, the removal of national infrastructure from densely populated areas on land, lowering risks and inconveniences, and the upgrading of urban and coastal space.

2. Policy guidelines

2.1. The primary objective

The primary objective of offshore marine platforms is for the establishment of central national infrastructure facilities at sea. The platforms will be established after examining economic, environmental, planning and other considerations. The guiding principle would be to avoid transferring facilities from land to sea that cause environmental and spatial problems, except in cases where this has a significant public benefit.

The development of offshore platforms in the maritime space will be coordinated with the Israeli security establishment. The security forces will approve any facility that



could affect flight safety, and carefully examine the development of underwater piping in terms of flow noise

2.2. Technology

- A. Due to the scarcity of the sea sand resource and the environmental impact of its mining, offshore marine platforms will be built using technologies that do not necessitate the use of sand, such as floating or column-supported structures (Steel Jacket/Gravity Base Structure).
- B. Options, that include importing into Israel or mining within Israel, for acquiring the required sand needed to construct the facilities, may be considered depending on feasibility.
- C. From environmental considerations, preference will be given to offshore facility platforms which are linked to the coast by seafaring vessels, with no physical connection to the shore. This will not apply to an airport at sea.
- D. In the event that it is decided to connect the offshore platforms to the coast, preference will be given to integrate existing infrastructure - utilization or extension of existing coal piers (Hadera and Ashkelon).
- E. The feasibility of an underwater container should be considered as a partial replacement for the offshore platforms for marine infrastructure installation.

2.3. Location in the maritime space

- A. There are planning, operational, environmental, and scenic advantages in concentrating the locations of national infrastructure offshore platforms.
- B. Establishment of offshore marine infrastructure platforms will also be permitted in the maritime areas approved for the construction of natural gas facilities under the National Outline Plan / 37 / h. However, priority will be given to the natural gas operations in these areas.
- C. During the policy document revision, the required areas for platforms and natural gas facilities will be reassessed. The areas and uses will be updated in accordance to the assessment.
- D. Considerations for approving a marine platform for national infrastructure:
 - Proximity to port infrastructure, without impairing the proper functioning of the port
 - Interaction and degree of suitability for additional user activity and planned operations
 - Proximity to existing onshore and offshore infrastructure, for example: electricity, piping, natural gas
 - Economic and engineering considerations



- Ecological sensitivity of the site
- The expected impact on sea sand drifts and its implications
- Proximity to the heart of the country and access to major roads
- Possibilities of consolidating platforms and savings on logistics and construction
- Visual considerations, including the scenic advantage of concentrating facilities in one area rather than dispersing them along the coastline
- Future option to erect a land bridge to a utilized platform on an existing coal pier or adjacent to it.
- Security considerations in coordination with the security forces
- Examining the possible increased economic viability of the structure by its integration to additional infrastructure
- Infrastructure supplies from the platform to the shore, including costs and limitations

2.4. Considerations for selection of facilities that will be used on offshore platforms for infrastructure

- A. Facilities that are required to be located on offshore platforms for their operations**, such as natural gas and oil treatment and production facilities, or infrastructure facilities that need to be expanded or upgraded but are unable to do so onshore due to the risk they pose for sensitive land uses.
- B. Facilities that create an onshore security, health, or environmental risk**, for example: facilities that contain chemicals (gases and liquids) that have the potential for environmental pollution or significant risk of an accident.
- C. Facilities that impose land development restrictions in their surroundings**, and their offshore relocation will resolve the significant conflicts with coastal infrastructures of national importance, maritime and land uses and urban development - such as infrastructure or experimental security facilities preventing the development of urban areas due to risks or nuisances they generate in their surroundings.
- D. Facilities that restrict public access to the beach**, especially on urban beaches.
- E. Security considerations** - capabilities for infrastructure protection, impact on security operations and so on.



2.5. A plan for offshore platforms for national infrastructure

- A. The plan will include guidelines for conducting an environmental impact assessment or environmental assessment, and an environmental management plan. These will include an analysis of the structure's effect on marine sand movement, among others.
- B. The first offshore platform will be promoted within a national planning institution.
- C. Within a plan for establishing a marine platform for national infrastructure, the planning institution will consider the possibility of adding infrastructure for scientific research.
- D. As far as possible, an offshore platform for various operations will not be established on a seabed of high ecological value, with the exception of an airport.
- E. The design, engineering, and environmental standards of the infrastructure on an offshore platform shall be at least equivalent to those acceptable for onshore infrastructure and in accordance with the special conditions of the marine environment.



Marinas for small vessels

1. Overview

Along the shores of Israel's Mediterranean, there are seven regulated marinas supervised by the Administration of Shipping and Ports: Marina Ashkelon, the "Blue" marina in Ashdod; the Jaffa port, Tel Aviv Marina, Herzliya Marina, "Shavit" marina in Kishon and Marina Acre. The breakwaters of some of the marinas established along the coast of Israel have caused sedimentological effects (similar to those of the breakwater of the ports) that have generated significant damage to sandy beaches, and a considerable increase in the rate of coastal cliff erosion.

The marinas are mainly used as berthing for small vessels of various types such as: private yachts, for education and water sports, fishing boats, dedicated tools for marine work, regular naval security vessels, and other private vessels of various types and sizes. In addition, there are very small jetties for mooring at several other sites along the coast.

The increase rate in the number of small vessels over the past decade is about 3% to 4% per year, whereby in overseas marinas (Turkey, Greece, Cyprus, Italy and others) moor many boats (yachts) owned by Israeli citizens who are unable to find berth availability in existing marinas along the coast of Israel. Marinas in central and northern Israel have waiting lists of hundreds of vessels. The docks of Ashdod and Ashkelon are not fully occupied relative to the approved statutory status. The supply of docking (2015) on the Mediterranean coast of Israel comprises of only 2,880 berths. The National Planning and Construction Council has ordered the preparation of a national outline plan for marinas on the Mediterranean coast. This chapter does not replace the national outline plan for marinas, it aims to indicate the principles and rules that govern marinas.

2. Policy guidelines

2.1. Location, installation, and utilization of marinas

- A. The conversion of existing maritime facilities to active marinas and the utilization of existing marinas should be maximized (including the possibility of additional dry storage and / or expansion of the marinas), as the establishment of new marinas will require the allocation of new coastal sections, restricting public access, and because the coastal area is of great environmental and public value. Nevertheless, there is no obligation to meet all the berthing demands of small vessels.
- B. As new marinas are established, consideration (as appropriate) should be given to constructing the marinas in artificial coastal segments (beaches without a natural sand strip, dry sea beds, breakwaters) and to coastal sections that are not used by the public for bathing and leisure activities or have low ecological and scenic values.



C. Marina operations:

- Plans for marinas will consider how to address future needs, some of which are unknown at the time of planning, (for example: offshore shipping, sand mining, wind turbine services, operations, and maintenance).
- In addition to private vessels, marinas will provide services for the following activities:
 - Maritime transport along the coast
 - Coastal shipping for the purpose of berthing aquaculture industry vessels (docking only, not including logistics / operations), fishing and natural gas and oil drilling, marine engineering work, (marine law) enforcement, scientific research, etc.
 - Sailing vessels for education and water sports
 - Yacht tourism

D. A comprehensive planning review for marina sites in Israel's maritime space will be carried out prior to the establishment of new marinas.

E. The variety of vessels should be surveyed in the newly installed marinas, in a manner that balances between docking / berthing and terrestrial areas in the marinas allocated to public maritime sports activities (maritime education, sporting associations, etc.) and berths for private vessels. This survey should be based on an analysis of maritime education and sports at the national level in Israel (see the chapter on education and maritime sports), together with an examination of the national outline plan for marinas.

F. When determining location and characterization of marinas, security considerations should be considered in coordination with the national security forces.

2.2. Priority principles for increasing berths for small vessels according to regional service zones:

- A. **First priority** - efficient utilization of existing marinas and conversion of existing marine structures to marinas.
- B. **Second priority** - Increase the capacity in existing marinas for small vessels (by extending breakwaters, onshore storage of vessels, inland development and more).
- C. **Third priority** - establishing of new marinas.
- D. The principles of priority listed above reflect policy guidelines. As part of the survey that will be carried out in the national outline plan for marinas, other aspects will be considered, such as: engineering and environmental



applicability, costs, and the possible timeline for development in light of evolving needs and demands.

2.3. National Outline Plan for Marinas

A national outline plan for marinas for small vessels will determine their location based on spatial analysis. The analysis will examine various aspects linked to marinas: environment, marine ecology, sedimentology, urban planning, economics, marine activity of various sectors, etc. There is no obligation to meet all the docking demands of small vessels.

2.4. Detailed plan for marinas

The preparation of a detailed plan for marinas will be in accordance with the rules set out in National Outline Plan 13 / B / 3 for Marinas on the Israeli coast. The planning institution will also consider the following issues when deliberating the detailed plan:

- A. A detailed plan for modifying and adapting an existing marina or a new marina will be accompanied by an environmental impact assessment to show the expected impacts on the marine and coastal environment.
- B. The Environmental Impact Assessment for a plan of a new marina or the extension of an existing marina will also include a marine ecological survey, and as needed, a coastal ecological survey.
- C. The guidelines to reduce the impact on nearby beaches, including the implementation of corrective actions, throughout the marina's functioning time span will be determined by the plan for the marina.
- D. The plan for the marinas will include a comprehensive monitoring plan of required factors, including monitoring of shoreline changes.
- E. The plan will provide, as necessary, instructions for the transfer of accumulated sand along the breakwater, in and around the marina.
- F. The plan will provide instructions for the design and materials used in the building of breakwaters that support the ecosystem.
- G. The plan will establish the measures needed to prevent sea pollution.
- H. The plan will require maximum public access in the marina, including the seawall promenade; a solution for enabling pedestrian flow continuity along the coast; and the establishment of regulated sites for fishermen on the breakwaters; with the approval of the marina management.
- I. A plan for breakwater structures will be accompanied by an archeological survey, as needed.
- J. Additional issues in accordance with National Outline Plan 13 / B / 3 for Marinas on the Israeli coast.



2.5. Launch ramps

Alongside the national outline plan for marinas, the location, layout and arrangement of launch ramps for small vessels will be examined, and their accompanying infrastructure; with the aim to promote marine sports. Planning such sites will allow:

- Significant expansion of maritime sports and the general public's access to its activities outside of the marinas.
- Small boats parked on land, (not necessarily near the shore) and launched by trailers, can free berths in marinas and allow them to partially meet the demand for new berths.



Morphological aspects of construction, operation, and maintenance of marine and coastal structures

Marine structures - ports and marinas

1. Overview

The ports and marinas are located on a sandy seabed in the shallow part of the continental shelf (water depth up to 30 m), excluding the port (buoy) of liquefied natural gas (LNG) and the Leviathan rig, which are at a water depth of about 70 m.

Research shows, that the breakwaters of the ports (mainly the primary ones) and marinas dramatically changed surrounding wave and current patterns that existed prior to their construction. As a result, the morphology of the sandy seabed in their vicinity have changed as well as the shape of their adjacent beaches and even of shorelines located many kilometers away.

The main breakwaters of the Ashdod and Haifa ports are sand traps for the sand moved by the currents along the coast. As a result, the amount of sand able to drift to the beaches “downstream” is reduced. The breakwaters of established marinas also created (in part) a similar but smaller scale effect.

At most of the coastal marinas and ports, the main breakwater facing upstream trapped most of the sediment along its side, resulting in a significant expansion of the adjacent beach and creating a large sandbar along the breaker. In contrast, extreme sand erosion of the seabed occurred on the side of the secondary breakwater facing downstream, significantly narrowing the coastal strip.

This chapter focuses on the morphological aspects of the ports. Other aspects related to ports can be found in the policy chapter on shipping and maritime trade.

2. Policy guidelines

- A. Regular artificial transfer of seabed sand from the vicinity of these breakwaters should be ensured when required in accordance with the sand resource management policy to be formulated (see the Marine Sand Resources chapter).¹⁵
- B. Sediment excavation to maintain operating depths in ports - sand accumulated in the sailing canals, the entrance, maneuvering and docking of ports as well as in Haifa Bay, will be used for development, conservation and protection of

¹⁵ For example, the main breakwater of the ports of Ashkelon, Hadera and "Polynom" interferes with the natural sand drift that takes place along the coasts around them. As a result, a great amount of sand accumulates near these breakwaters and port openings. In order to reduce the morphological effect of these ports on and around the seabed and the nearby beaches, port owners must replenish coastal sections affected by the ports' establishment in balance with the accumulated sand at the ports' openings and along the breakwaters, in accordance with the Inter-ministerial Steering Committee for Maritime Space.



beaches (subject to examination of the sand's environmental characteristics: pollution, anaerobic environment, etc.).

- C. Mining of sand accumulated adjacent to and along marina and port breakwaters is possible in accordance with a dynamic policy plan that will include environmental guidelines and content by the Inter-ministerial Steering Committee (see the sand resource policy plan in the relevant chapter).
- D. A plan for expanding or establishing new marinas will include a thorough analysis of the morphological and sedimentological effects on the nearby seabed and on the coastal strip to the north and south of them. The area of impact to be analyzed will be determined in the environmental examination guidelines issued by the Ministry of Environmental Protection for each plan.
- E. A plan for the installation of marine structures that may affect adjacent beaches will include the structure owner's commitment to repair adverse impacts created post construction and throughout the lifespan of the structure.



Coastal structures- breakwaters and groins

Along the shores of Israel's Mediterranean coast, there are dozens of coastal structures located in the sandy shore and in the shallow waters, up to a few meters below sea level. Studies show that these structures have altered, in one way or another, the wave and current patterns that existed before they were erected, and as a result, the local morphology of the nearby coastal segments has changed. All the coastal structures can be classified into three main groups, according to their function, their distance from the coastline to the sea and their orientation with respect to the shoreline:

- A. Various types of detached breakwaters.
- B. Groins and small breakwaters protruding from the coastline to the sea.
- C. Sea walls and other seaside structures that function as wave breakers. The policy document does not deal with this type of coastal structures.

1. Detached breakwaters

1.1. Overview

To protect sandy shores from wave-crossing and the erosion of sediment that builds them, and with the aim to expand the beaches, detached breakwaters have been erected along the Israeli coast. The detached breakwater ridge reduces the wave energy, dispersion, and height. The detached breakwaters are more effective in reducing the wave energy and therefore, also their degree of shore protection than submerged breakwaters (the upper part of which is slightly submerged).

Following the construction of breakwaters, the sand accumulation and sedimentation processes begin on the coast, mainly due to the weakening of currents and a decrease of the whirling volume. This build-up results in a decline in the natural sand feed on nearby beaches, damaging them and the stability of the coastal cliff. In order to prevent adverse sedimentological effects on nearby beaches, sand can be replenished from an external source upon the completion of the breakwaters.

In recent years, plans have been approved to allow the construction of submerged breakwaters, built from geotechnical fabric sleeves (Geotube) and filled with sand. Along with the use of detached breakwaters on other beaches, these breakwaters are intended to serve as a means for temporarily protecting the lower part of the coastal cliffs.



1.2. Policy guidelines

- A. Detached breakwaters will be constructed for the following purposes:
- Protecting and expanding beaches to preserve and develop leisure and recreation activities
 - Restoration of affected beaches
 - Marine protection of the coastal cliffs
- B. A plan for coastal protection will enable the construction of breakwaters following the examination of various technological alternatives.
- C. A plan for detached breakwater will be accompanied by an environmental impact assessment to examine the hydrodynamic, sedimentological, and morphological changes that are expected to occur in the seabed around the breakwater and adjacent beaches. In addition, the impact of the detached breakwater on the coastal ecosystem in its environment will be analyzed and, if necessary, provisions will be determined for its building materials, which will support and enhance the ecosystem. The need to prepare marine models will be determined on a case-by-case basis according to the planning institution's decision.

2. Groins and small breakwaters, extending out from the shore into the sea

2.1. Overview

Groins are mainly intended to protect and expand shallow coastal areas. Regarding beaches' intensive use for recreation activities, a strip of beach protected by a system of groins creates a number of restrictions, such as the recreational use of the beach, its appearance, and the continuity of the coastline. An installed groin may lead to the development of a sandbank on its upstream sloping face and a (sometimes severe) drift along its downstream sloping face. Furthermore, strong currents develop along the groin perpendicular to the shoreline, which may endanger bathers.

2.2. Policy guidelines

- A. When required, the plan of a groin or small breakwater will be supported by an environmental impact assessment or an environmental assessment; which will include hydrodynamic and sedimentological models to examine the morphological changes expected to occur on the seabed around the groin and its shores, as well as technological alternatives to the groin or breakwater. In addition, the impact of the groin or small breakwater on the coastal ecosystem will be examined. The plan will include shoreline monitoring after construction. The need to prepare marine models will be examined on a case-by-case basis according to the planning institution's decision.



- B. Installing a groin system as a means for stabilizing or extending beaches and protecting the cliff side should be avoided. The formation of groins can be considered as component of a breakwaters system or as a single structure as a solution for a specified purpose.
- C. Whenever necessary, construction plans for a groin or a small breakwater will be accompanied by an archeological survey.
- D. The plan will provide instructions for constructing the groins, their design and building materials that support the ecosystem.



Aquaculture



Development of Maritime Space | Aquaculture

1. Overview

The demand for fresh food from the sea is on the rise in Israel and worldwide. Population growth and an increase in the standard of living, combined with the recognition that fish is an essential component of a healthy and balanced diet have been the driving force behind the growing demands. Worldwide fishing is limited due to the regeneration rate of fishery resources that is unable to meet the growing demand. In contrast, aquaculture is already supplying much of the global fish consumption, and the development of the industry may meet the growing demand.

Aquaculture utilizing fish cages in the open sea is a young farming industry providing for fish consumption in Israel; in conjunction with inland fishponds and the open water fishing industry. The vast majority of local fish production is currently secured from onshore fish ponds, which are limited in their development due to soil and environmental restrictions and high-water prices; while the bulk of the fish consumed in Israel (about 70-80%) is imported. To date, two small fish farms in Ashdod and an experimental farm in Michmoret have been established in Israel, together producing a total of 2,500 tons a year. A farm was recently established at an open sea site (12 km west of Ashdod), which began operating and growing fish at an expected volume of 1,000 to 2,000 tons per year.

Aquaculture utilizing fish cages anchored to the seabed in the open sea is an emerging technology, particularly in Israel. The main challenge is the durability of the cage systems in storms. Accumulated experience indicates economic potential even though harsh sea conditions during extreme storm events can cause severe damage to the fish cages, especially those unaffected by the breakwater's wave-dampening effects of Ashdod port breakwater. Various tested technologies have demonstrated the potential to cope in the open seas.

The economic challenge of the aquaculture industry will be to compete with other Mediterranean farms, after its protective tariff is removed. It is expected, that the aquaculture industry will be able to cope with the reduction of tariffs when production reaches tens of thousands of tons per year as a result of economy of scale, similar to the volume of production in competing Mediterranean countries. It is therefore, proposed to allow this industry to grow to the extent that these benefits can be achieved before lowering the protective tariff.

In current aquaculture practices, the required maritime space of open sea fish farms is very extensive and the possibility of multiple maritime user overlap is limited, since aquaculture regularly uses the three dimensions of maritime space (water surface, water column and seabed). Cost-effective technologies in the field exist, some have passed the experimental stage, and some are in the conceptual stage to be tested.

The environmental impacts of aquaculture farms are largely related to the fish feed fertilizers and excretion that sediment and enrich of the sea. Tests have shown that the environmental impact range of open sea farms, similar to those in Israel, is up to 500 meters from the fish farm. Other impacts include the creation of a new habitat that attract many species, including flagship species such as sharks, dolphins and tunas; and the overflow of fish feed derived from flour and fish oil, though its utilization has diminished over the years.

Israel has an extensive scope of technological research and development, ideas and innovation in aquaculture. There is significant progress in research on aspects of fish nutrition, breeding and rearing fish as an alternative to collection from the natural system, innovation and technological developments in vaccines and pharmaceuticals. However, the gap between knowledge and innovation and the low realization, so far, of aquaculture in Israel is notable. These achievements translate into the export of knowledge, fingerlings, fish-food) and technologies to many countries of the world.

The scope of existing aquaculture activities in Israel is currently focused on three components:

- The largest fish cage farm is located within Ashdod Port, operating within an exceptional framework for a 7 to 10-year period, and is not regularized in a statutory plan.
- Open-sea fish cage farm off the coast of Ashdod (total area of 14 square kilometers) - within approved plans for fish farms, which currently includes the establishment and operation of a farm with the capacity of 1,000-2,000 tons of fish per year.
- The open-sea fish farm across Michmoret, defined as an experimental site, is in the process of statutory regulation.

The Ministry of Agriculture (2015) has prepared a 20-year policy plan for aquaculture, which offers allocation of approximately 200 km² of aquaculture area.¹⁶ Polygons identified in this framework for the use of aquaculture reflect a very large space consumption given the current rate of use and are based on a forecast of tremendous growth in the future production volume of Israel. Of the proposed 200 km² identified by the Ministry of Agriculture, 30 km² have been designated as high priority for development. For operational, economic, environmental, and national security reasons, the proposed location is at a depth of between 30 m and 150 m and up to 20 km from a

¹⁶ Cite As: Ayalon Ofira , Trop Tammy , Eshet Tzipi , Liebes Idan , Zerbib Tsion Maayan , Kerem Efrat , Mozes Noam , Kakhal Yael , Tchernov Dan , Grossowicz Michal , Tendler Amos , Ross Dan . Sustainable aquaculture in the Mediterranean Sea Haifa Israel: Samuel Neaman Institute, 2015. <https://www.neaman.org.il/EN/Sustainable-aquaculture-Mediterranean-Sea>

service port. For this reason, site development in the north and south of Israel is a higher priority than in the central region, which does not meet berthing and logistics needs.

2. Policy guidelines

2.1. Promoting the Israeli aquaculture industry in the context of global and local processes

In view of current global processes, whereby food production on land may reach the limit of its capacity and fisheries will not be able to meet rising demand, aquaculture is expected to provide a growing share of the food supply to the world's population. In view of this, it is necessary to ensure that maritime space reserves are used for this purpose. On the local level, there is a steady increase in consumption of fresh fish and seafood, with local fisheries and aquaculture being able to supply less than one third of domestic demand.

Given of the developing economic potential of the industry, it should be promoted by: supporting and advancing research and development, the provisions of supporting infrastructure (docks and terrestrial hinterlands) and considering economic incentives, including easing the realty contractual requirements.

2.2. Assigning areas to aquaculture

The spatial policy for the aquaculture industry is based on gradual development and the allocation of areas according to the industry's development rate. Determining the exploration areas for aquaculture in the program relied on considerations of environmental sensitivity and reducing conflicts with other sea users' activities and marine infrastructure.

- A. The aquaculture farms constructed in the next few years will be carried out in areas defined in approved statutory plans and in the exploration areas for aquaculture defined in the policy document. A detailed plan will consider the optimal location in relation to the changes in the navigation corridors.
- B. The existing cages at Ashdod Port will be able to be regularized, and the installation of additional fish cages along the breakwaters in the new ports will be evaluated, insofar as the functioning of the port will not be impaired and with the consent of the Administration of Shipping and Ports and the Navy.
- C. Until a detailed plan for aquaculture is approved, development that could harm the progress of aquaculture in the exploration areas that are marked in the policy document will not be possible; unless decided otherwise by the Committee for the Protection of the Coastal Environment after examining the issue.
- D. Future approval of plans for aquaculture farms in the deep-sea exploration area across from Ashkelon will be examined by the Committee for the Protection of

the Coastal Environment, respective to the pace of utilization of the aquaculture exploration areas and the development of the industry.

- E. A systematic analysis will be made for the addition of aquaculture areas to those marked as exploration areas in the policy document upon the updating of the document or at another point decided by the Committee for the Protection of the Coastal Environment. The development of the industry and environmental, economic, and technological considerations will be analyzed, among others. Resolutions will be made based on the results, whereby exploration areas marked in this policy document may be removed, new areas added, and their layout modified.
- F. Maritime space development will be coordinated with the Israeli security establishment. Any infrastructure that could affect flight safety will be approved with the security forces.
- G. New technologies:
 - If found applicable, experimental fish rearing technology for rigs can be added to rig facilities.
 - Open sea seaweed growing technologies for bio-fuel, consumption and chemicals - should have additional and appropriate sea areas designated as these technologies move into the experimental phase.
- H. Aquaculture industry and the open sea cage pisciculture require logistical infrastructure, particularly the docking areas for vessels at reasonable distances from the cage farm. In view of this, dedicated piers in the trading ports and, where possible, in the energy ports should be allocated for docking and aquaculture activities. In addition, onshore logistics areas should be designated for the various needs such as: loading and unloading stations for fish feed, fingerlings, fish and equipment, and cage assembly and handling areas.

2.3. Reducing the environmental footprint of the industry and minimizing negative external environmental costs at all stages of activity and R&D

- A. Development of fish breeding technologies whose diet is based on the lowest percentage of fish flour, including continued development of substitutes for fish feed.
- B. Minimize attracting predators, especially sharks, to the cages by improving sanitation procedures and the removal of dead fish from cages, surveys, monitoring, and other measures to prevent cage perforation by sharks.
- C. Take measures to optimize fish feeding by minimizing the food materials secreted from the cages.
- D. Continued monitoring the impact of the cages on the environment.

- E. Continued examination and development of the use of integrated species aquaculture at low nutrient levels, with emphasis on algae.

2.4. Developing technologies for storm resistance

Emphasis will be placed on the development and implementation of sustainable aquaculture technologies that will prove durability in winter storms under Israeli Mediterranean conditions. The low resistance of current technologies to storms of fish cages in the Mediterranean Sea can sometimes lead to fish escapes, turning drifting farms into sea waste, and potentially damage habitats and submerged infrastructure.

Improvement of technology and materials used, and the maintenance and development procedures of fish farms that will prove long-term sustainability at sea are a prerequisite for the existence of aquaculture.

2.5. Aquaculture of native species exclusively

Aquaculture of alien species causes the introduction of additional alien species and their internal and external parasites into the marine ecosystem. Therefore, in order to diversify the product portfolio of aquaculture to the consumer while maintaining Mediterranean populations, new (native or cosmopolitan) species found naturally in the Mediterranean should be developed and adapted to aquaculture; such as the Mullet and Bluefin Tuna. Similarly, the raising of Bluefin Tuna fish must continue to be developed in order to relieve global fishing pressure on the endangered wild populations of this species.

2.6. To cease extracting mullet fingerlings from river funnels

As the production of mullet fish accelerates in onshore breeding sites, their capture in the wild streams must be stopped, allowing them to reproduce uninterruptedly, contribute to the cleansing of the streams and to regain their population in Mediterranean shoreline water.

2.7. Guidelines for the preparation of detailed plans for aquaculture farm.

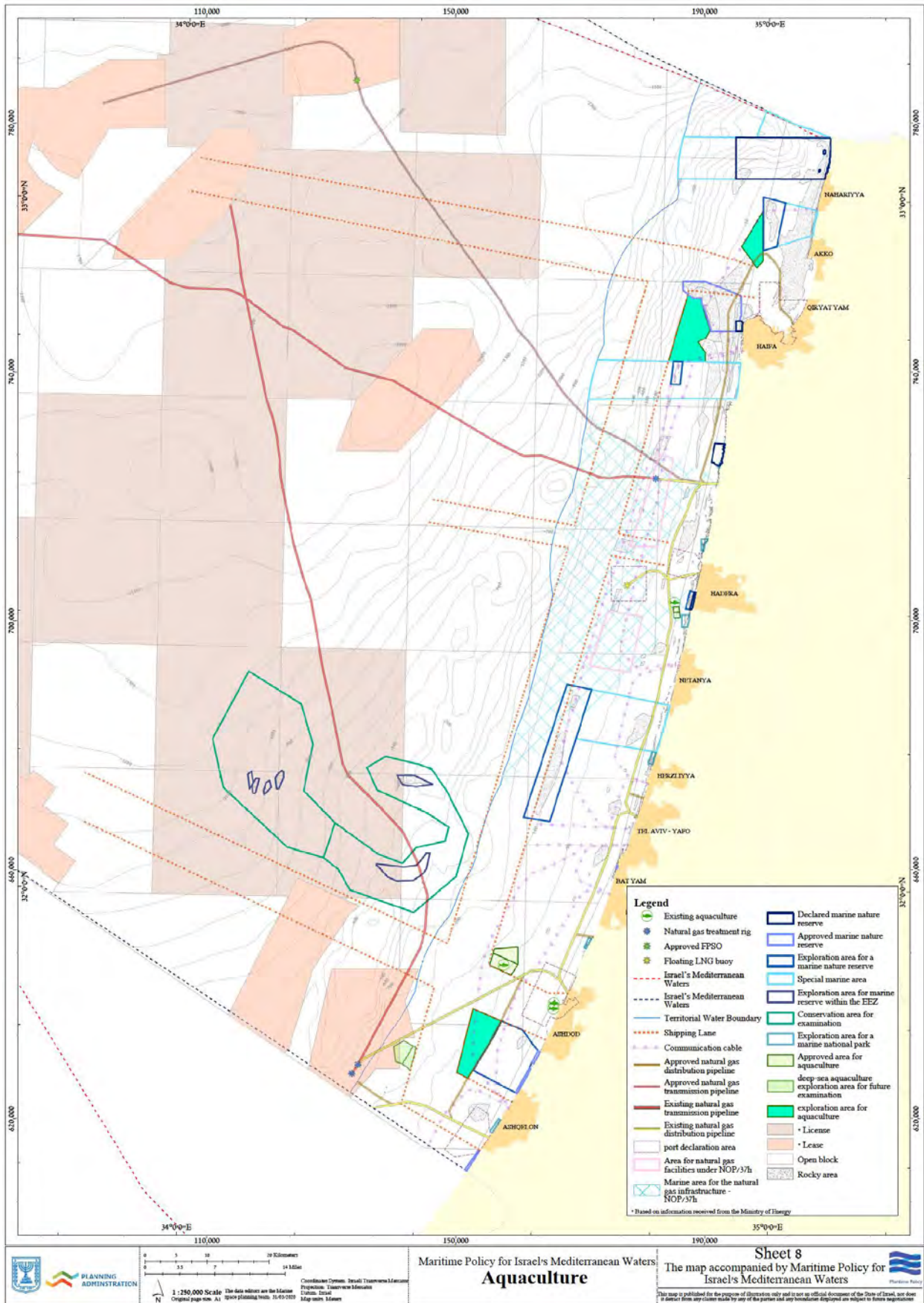
- A. Areas for aquaculture will be promoted within the framework of the plan, with consideration for the proposed technology and its applicability and the interaction with other users at sea, among others.
- B. An aquaculture plan will include a detailed survey of existing users in the area (activities and facilities) as a basis for defining the conditions required for their continued activities within the plan or for discontinuing their activities.
- C. An aquaculture plan will include an environmental impact assessment or an environmental assessment that examines the environmental impacts of its



construction and operation and defines the tools and means to mitigate adverse environmental impacts.

- D. An aquaculture plan will analyze the required interfaces with existing and planned infrastructure lines to prevent damaging them during the implementation and operation stages of the farm.
- E. An aquaculture plan will include a monitoring plan in coordination with the Ministry of the Environmental Protection.
- F. The aquaculture plan will examine additional uses that can be incorporated within its area and will define the required conditions.
- G. An aquaculture plan will define the responsibility and required actions to dismantle the farms at the end of their operation.

Figure 12: Aquaculture Map





PLANNING
ADMINISTRATION



Maritime Policy



4TH SECTION | Protecting Natural Resources and Heritage



Nature conservation



Protecting Natural Resources and Heritage | Nature Conservation

1. Overview

The policy document provides the first **comprehensive policy for nature conservation at sea**, combining policy instruments with a diverse array of marine protected areas at different protection levels and on a large scale.

The conservation of natural marine resources forms **the basis of the maritime spatial policy**. It is expressed as a combination of comprehensive policy for nature conservation at sea, and policy guidelines for the activities of all sectors in the maritime space regarding conservation of marine ecosystems and environments.

Preserving the ecosystem in the maritime space is directly related to the quality of the seawater and relies on the effectiveness of the measures taken to reduce sea pollution from various sources. The issue of sea pollution is addressed in a separate chapter in this document.

This section covers three complementary components required to conserve the natural environment:

A. Spatial definition of marine protected areas for the protection of natural resources

An acceptable and effective way of conserving habitats is through; defining protected areas intended for nature conservation at sea, professional management and complementary conservation tools that include imposing various restrictions on human activity in other areas. The Convention on Biological Diversity and its protocols require Israel to maintain a minimum scope of marine protected areas at sea.¹⁷

The spatial definition of marine areas for the protection of natural resources has been examined in aspects of: representation, size, continuity (with important and protected inland ecosystems), and interactions with other marine users.

B. Preserving species

Beyond habitat protection, conservation efforts need to be focused on specific species, whether due to being ecosystem engineers, endangered, or for other reasons. The marine habitat is multidimensional and aquatic animals have different stages of development in their lives in different areas of the sea. This increases the need for adopting specific species

¹⁷ In the Aichi Biodiversity Targets No.11 document (Consortium on Biological Diversity), which, by virtue of the biodiversity treaty signed by the State of Israel, UNEP recommends that at least 17% of the land area (including inland waterways) and 10% of coastal waters and especially those valuable for biodiversity and ecosystem services will be preserved by 2020 as well as sections that reasonably link between the protected areas.

protection policies, along with habitat conservation. A species conservation policy may also include an active conservation policy, for example to restore different populations.

C. Guidelines for reducing and preventing adverse effects on the natural environment in relation to the activity of different sectors

Threats to biodiversity and marine natural values results from the variety of human activity at sea. Therefore, in order to complete the nature conservation policy, for each of the sector which has a significant impact on the environment, guidelines are included for the prevention or reduction of the negative effects of human activity.

2. Spatial policy for marine protected areas for conservation

2.1. Overview

2.1.1. Marine protected areas in the Mediterranean

A vast majority of maritime spatial plans conducted in different countries, define marine areas with different levels of protection as part of an overall policy to preserve the marine natural environment. In the Mediterranean, there are 46 different types of protected marine areas based on different definitions and laws, expressing a wide range of levels of conservation that include diverse interfaces with different types of human activity and represent a wide range of levels of management and enforcement.

Analysis conducted in 2019 showed that there are 1,300 marine protected areas in the Mediterranean Sea covering a surface of approximately 9.68% of the Mediterranean Sea area (mostly located within sovereign waters of European countries).¹⁸ An examination of the level of protection and conservation of nature in these areas revealed that 99.5% of the protected areas in the Mediterranean Sea exhibit a low level of protection and only about 0.5% of the protected areas are of a high level of protection, which is equivalent to the level of protection of a nature reserve in Israel.

The vast majority of Mediterranean marine protected areas, which have been approved recently in large numbers by European countries, are Natura 2000 areas; with a low level of protection, partially managed with low enforcement and monitoring. In terms of the efficiency of nature conservation, habitat and species diversity, it has been found that professionally managed marine protected areas having a high level of protection are the most effective in terms of nature conservation and reach optimal performance in about 10 years.

Contrary to mitigating trends in the levels of marine conservation in Western European countries, the policy document for Israel's maritime space defines extensive distribution of high-level marine protected areas, along with a host of other protected marine areas, at

¹⁸ Gomei M., Abdulla A., Schröder C., Yadav S., Sánchez A., Rodríguez D., Abdul Malak D)2019(. Towards 2020: how Mediterranean countries are performing to protect their sea. Published in November 2019 by WWF – Worldwide Fund For Nature (Formerly World Wildlife Fund).

different levels of protection. The array of protected marine areas included in the policy document expresses a stringent approach emphasizing the efficiency of nature conservation through the utilization of large protected areas, including best practices in management, research, monitoring and enforcement, which stands out in relation to other marine policy programs.

2.1.2. The spatial concept of marine ecosystem conservation

The spatial concept of preserving the marine ecosystem in the maritime space policy document, presented on the accompanying map, includes a hierarchy of areas denoted differently in terms of preserving nature assets and in terms of the human activity. The definition of marine areas intended for nature conservation at the various levels is based on current knowledge of areas of ecological importance combined with accepted principles of nature conservation - representation, size, and continuity. The protected marine areas in the territorial water are:

1. Exploration area for a marine nature reserve (An area designated for a marine nature reserve whose exact area will be specified in a detailed plan)
2. Rocky area (hard substrate)
3. Special marine area
4. Estuary

The exclusive economic zone includes two types of protected areas at different levels of protection:

1. Exploration area for conservation within the exclusive economic zone - which aims to provide high protection of unique nature assets.
2. Conservation area for examination - an area that has the potential for discovering unique nature assets. Detailed surveys must be performed to detect nature assets prior to approving and performing development activities in this area. As important nature assets are discovered in the future, their need for conservation will be examined.

Similar to European countries in the Mediterranean, the majority of the protected marine areas included in the policy document are in territorial water for three main reasons. The spatial distribution of habitats which represent a rich variety of species concentrated in the area between the coastline and the continental shelf; The limited human activity in deep sea and the lower level of threat to the ecosystem compared to territorial waters; The large gaps in knowledge about the location and existence of important deep sea nature assets.

The total marine area protected in territorial water included in the policy document stands at 876 km², which is approximately 21.6% of Israel's territorial water area (excluding restricted fishing zones, firing ranges, etc.). Contrary to the prevalent trend in European countries of the western Mediterranean, which includes the approval of marine

areas with low-level protection of nature assets, the protected marine areas included in the maritime policy document incorporate **high-level marine protected areas** (including: exploration area for a marine nature reserve; existing marine nature reserve declared, approved and in planning process; as well as exploration areas for national parks in the sea) of **350 km²**, which constitute **8.6%** of Israel's territorial water area. An additional **8.74%** of the territorial water area is designated as a "**special marine area**" and a further **4.2%** includes **protected rocky areas (hard substrate)**. In addition, the policy document specifies **protected marine areas in the exclusive economic zone** that include exploration area for conservation in the exclusive economic zone as well as conservation area for examination, totaling approximately 590 km² (30 km² and 560 km² respectively).

As information gaps on marine natural assets are reduced, it may be possible to add different types of protected marine areas, to detract from those designated in this policy document and to change their boundaries, as part of the updating of the policy document or as part of other planning framework.

In addition to the protected marine areas, the policy document defined additional marine areas that contribute to nature conservation and include restrictions on activities of various types:

- Exploration areas for marine national parks (detailed in a separate chapter)
- Restricted areas to fishing (detailed in fishery chapter)
- Restrictions on natural gas and oil drilling (detailed in hydrocarbons chapter)
- Restricted security zones

2.1.3. Nature conservation management in marine protected areas

The efficiency of the spatial tool of marine protected areas in safeguarding habitats and biodiversity, is derived from a series of elements including the ability to professionally manage the marine protected area. Protected marine area management should be based on highly skilled manpower, scientific research, ongoing monitoring program, management of interfaces with other users as well as effective control and enforcement capability. The Inter-ministerial Steering Committee for Maritime Space will examine the possibility of protected marine areas which are not nature reserves to be managed through the Nature and Parks Authority or other body.

2.2. Marine Nature Reserve

2.2.1. Planning adaptability

Due to the low degree of planning certainty in the maritime space and the initial stage in which Israel is of planning the maritime space, there is a distinct need for planning adaptability of all marine areas for various uses and avoiding rigid definitions requiring complex processes for modifications. Currently, changes in declared nature reserves (cancellation of declarations) indicate a long and complex process that is not required for any other land use and is in addition to the usual planning process.



Due to the large scope of the proposed marine reserves and uncertainties about marine designated areas as well as the need to promote national projects, an examination of the regulatory process of reducing space from declared marine nature reserves, is needed.

2.2.2. Policy guidelines for marine nature reserves

These policies apply to exploration area for a marine nature reserve as well as marine nature reserves (unless otherwise stated). In the exploration area for nature reserves, consultations will be conducted with the Nature and Parks Authority in relation to the addition of uses and activities, with the aim of preserving the existing natural assets in the area until the plan is approved.

2.2.3. Plan for marine nature conservation in territorial waters

- In the case of territorial waters, the Nature and Parks Authority will submit to the Planning Authority a marine plan for marine nature reserves in the designated exploration areas in the policy document for maritime space. The exact boundaries of the reserves will be defined in a detailed plan.¹⁹ Upon approval of the detailed plan for a nature reserve,²⁰ the associated search area status will be revoked, and the policy document will be updated.
- The Nature and Parks Authority can submit a plan for an alternate site, which is not in an exploration area for a marine nature reserve, to the extent that it becomes clear that nature conservation plans cannot be approved in the search areas specified in the policy document.
- A marine conservation plan will include, as required, the following components. The Committee for the Protection of the Coastal Environment may be exempt from preparing some of the components, as applicable:
 - An ecological survey to describe the characteristics of the area proposed for nature conservation, to be used as a basis for determining the interface with other users and to define distinct zones within the reserve.
 - A physical description of the reserve area and the heritage assets within.
 - A detailed survey of existing users in the field (activity and facilities) as a basis for defining the conditions required for the continuation or termination of their activity in the reserve.
 - The manner in which additional future users will be integrated into the area.

¹⁹ The nature reserve area approved by the planning institution may be within or outside the search area marked by the accompanying maps of the policy

²⁰ In the case of the exclusive economic zone reserves, a planning consultation will take place with a limited forum of the Committee for the Protection of the Coastal Environment, without a planning procedure/process.



- The defined development and infrastructure components that can be established in the reserved area and the conditions required for their approval.
- An annex of the interface between the marine reserve with the adjacent coastal strip (if any).
- A Proposal for distribution of marine reserves into for the various areas including: the uses and activities in each area, the conditions for their activity, and flexible instructions for the uses and activities.
- Instructions for protecting the fauna, flora and inanimate in the reserve area.
- The conditions for issuing building permits, dumping and discharge permits to the sea.
- Provisions on the coordination required with other bodies operating at sea.

2.2.4. Infrastructure crossing the marine nature reserve area

Within the marine reserve area, the transmission of lines such as electricity, communications, fuel, natural gas and accompanying small infrastructure facilities will be permitted, subject to a plan approval by the Committee for the Protection of the Coastal Environment. The establishment of infrastructure lines, their ongoing operation and maintenance will be carried out in accordance with the following principles:

- The Committee for the Protection of the Coastal Environment will approve a marine plan for infrastructure lines in a marine nature reserve based on an examination of alternatives.
- Infrastructure lines will be moved in a way that avoids or minimizes the impact on natural assets, using the best available technology (BAT).
- When formulating a detailed plan for the passage of infrastructure lines and associated facilities within marine nature conservation area, a planning institution will consider if added instructions to the plan for the implementation phase are required, in respect for nature conservation and in consultation with the Nature and Parks Authority.
- A plan for infrastructure lines will include, among other things, instructions to minimize environmental damage during construction and instructions for ecological restoration, which will be prepared in consultation with the Nature and Parks Authority.
- Pipelines and infrastructure lines going ashore will, as far as possible, be designed with technology that minimizes environmental impacts during operations.

2.2.5. Infrastructure facilities

- Rigs for Hydrocarbons production and treatment, including associated infrastructure facilities, are not permitted in nature reserves.



- The construction of rigs for exploration and verification of natural gas and oil will be possible, in accordance with the regulations of the Petroleum Law and as stated in this document.
- Exploration drilling for natural gas and petroleum will not be carried out on and in close proximity to a hard substrate, except after examining its sensitivity.
- Operation of production drilling and the establishing of an underwater transmission system (in a strong framework) - will be possible under a detailed plan, and in accordance with the following conditions:
 - A plan that includes the passage of piping and associated facilities in a marine nature reserve that will not constitute a change in the designation of the reserve.
 - A plan that includes docking and construction of production and treatment rigs above sea level that will constitute a change to the nature conservation plan.
- Exploration area for the Shavei Zion Marine Nature Reserve:
 - The Nature and Parks Authority will submit a detailed plan to a marine nature reserve opposite Shavei Zion in the maritime area that is not under examination for the construction of a desalination plant infrastructure (in accordance with the approved National Infrastructure Plan/ 90). The exact boundaries of the reserve will be set out in a detailed plan and may also include areas in the special maritime area east of the nature reserve search area.
 - A nature conservation plan, within the proposed plan for a desalination facility, will be submitted only after determining the marine route of the desalination infrastructure.
- Exploration area to expand the Gadur Marine Nature Reserve:
 - Advancement of the plan to expand the marine reserve and determine its boundaries will only be possible after the approval of the planned desalination plant nearby.

2.2.6. Security Forces

- Any activity that overlaps with restricted security zones will be subject to continued operations by the security forces in the closed areas. The subservience shall be by virtue of Rule 125 of the Defense (Emergency) Regulations, 1945, and of the security facilities, whether within the limits of the nature reserves or bordering on their territory.
- The security forces' activities in the restricted security zones will not be restricted.
- Free passage to the security forces shall be maintained at all times.
- Any entry of cruises to areas overlapping with closed security areas shall be subject to the regular entry procedures of the responsible entities under Regulation 125.



- The existing treaty, between the military and the Nature and Parks Authority, which regulates military marine activity in nature reserves, will be expanded, in accordance to agreements with the security forces.

2.2.7. Boating, shipping, and maritime transport

There will be no restrictions on maritime transport activities in marine reserves or nature reserves within exclusive economic zones. The Nature and Parks Authority can set restrictions on marine sports for nature conservation reasons and with the consent of the Administration of Shipping and Ports.

2.2.8. Fishing

- Fishing in a marine reserve or within a nature reserve in the exclusive economic zones is prohibited, except fishing for research or conservation purposes, in accordance with the plan's instructions and the decision of the Nature and Parks Authority.
- Fishing arrangements in exploration areas for nature reserves shall be determined by the fishing official in coordination with the Nature and Parks Authority.
- The Nature and Parks Authority will clearly mark the marine reserves.

2.2.9. Water Sports

Water sports including diving (not for fishing), swimming, rowing, surfing, and boating will be permitted in accordance with the interface plan for each nature reserve.

2.2.10. Marking

Marking for nature conservation and safety needs including demarcation will be permitted. The marking must be approved by a marine engineer to prevent its disengagement or drift.

2.2.11. Research and monitoring

Research and monitoring facilities will be permitted, such as: livestock recovery and restoration cages, traps, cameras, sensors, vantage points, etc.

2.2.12. Use interface in areas adjacent to a marine nature reserve:

Marine activities or operations which have the potential for environmental impacting a nearby marine reserve or a nature reserve in the exclusive economic zone, will only be carried out after examining their environmental impacts on marine conservation.



2.3. Rocky area

2.3.1. Background

The rocky areas of the maritime space are often sensitive habitats that include a large variety of species and are divided into three types:

- **A natural submerged bedrock** (hard substrate) on the seabed that dots an area of approximately 8% of Israel's terrestrial waters (or approximately 1.2% of the entire maritime space) and often is a rich habitat hosting a large variety of species.
- **The abrasion platforms** that form special habitats that are ecologically important and are physically significant for sandstone cliff and coastal protection.
- **Small islands** - Near the northern shores of Israel, are scattered roughly openly exposed 28 islets and rocks that are at times submerged during storms. These islands are a remnant of the mostly flooded kurkar (calcareous sandstone) ridge with only its highest peaks remaining. The islets are situated tens to hundreds of meters off the Carmel coast and up to a kilometer off the Achziv and Rosh Hanikra beaches, covering a total area of 0.08 km².

The three types of rocky areas are habitats with a potential for high ecological importance and for rich species diversity. A defined system is required to balance between human activity in maritime space and the protection of the rocky areas. The spatial layout of the protected rocky areas is marked as a background layer in the policy maps based on the latest knowledge available. As new areas of hard substrate are identified in the future, the following policies will also apply.

2.3.2. Policy guidelines for a hard substrate area (outside a nature reserve)

2.3.2.1. Hard substrate

- A. In the area of the hard substrate, fishing nets would be completely prohibited.
- B. Any program, marine work, or activity that has the potential to damage the hard substrate will require mapping with accurate hard substrate boundaries, preparing an ecological survey, and consulting with the Nature and Parks Authority.
- C. A hard substrate found to have a high ecological value; the following conditions apply:
 - Underwater pipelines and cables will cross a hard substrate only in cases where no quarrying is required and significant habitat damage is not expected, or in cases where the rocky substrate is unlikely to be bypassed.
 - Pipelines and cables requiring hard substrate quarrying shall, as far as possible, be drilled horizontally at hard substrate crossing points near the shore.
 - As far as possible, no drilling or natural gas exploration, mining or sand drilling activities will be conducted in close proximity to a hard substrate with a high environmental value, in a way that would damage the ecological value of the hard substrate.



2.3.2.2. Abrasion platforms

- A. All fishing activity from the abrasion platforms will gradually cease. Due to the ecological damage caused to the sensitive habitat by fishing, where possible, safe fishing points will be established at marine structures such as breakwaters and piers, along with the development of other alternatives on coastal structures. In addition, the Nature and Parks Authority will take steps to increase fishermen's awareness of the effects of fishing on the abrasion platforms.
- B. As far as possible, development, drilling or quarrying activities on or near the abrasion platforms will be prohibited.
- C. The covering / displacement of abrasion platforms is prohibited, with the exception in cases where a planning institution has been convinced that there is no other possible alternative, and after examining all the planning and environmental considerations, including examination within an environmental assessment.
- D. New coastal runoff water outlets will be diverted as far as possible to areas far from abrasion platforms.
- E. The Nature and Parks Authority will promote regular and consistent monitoring of the *Dendropoma petraeum* (sea snails) population, together with government and academic research bodies and the national monitoring program, and will examine the possible active means to strengthen its population.

2.3.2.3. Islets

- A. The level of protection for the islets will be the same as the level of protection of the abrasion platform.
- B. The marine sublittoral zone's unique habitats will be preserved around the continental part of the islets.
- C. The fishing from and around the islets will be restricted, and polluting runoffs will be kept a safe distance from their surroundings.
- D. The islets and their marine environment will, as far as possible, be included in nature reserves.

2.4. Special Marine Zone

- A. A special maritime zone is part of the comprehensive policy of ecosystem conservation in the maritime space. The purpose of the special maritime zones is to enable the protection of additional marine areas of representative marine and coastal habitats on a large scale, while maintaining biodiversity. Development in these areas will be considered with special emphasis on the natural environment.
- B. Based on the findings of an environmental assessment, the planning committees that discusses development plans in this area will consider their impact on the area with



reference to the distinctive role of the special maritime zones in the protection of habitats, its ecological value and the function of its natural assets. Upon examining development plans in this area, the Nature and Parks Authority's viewpoint on the role of the special maritime zone, within the range of nature conservation considerations in the maritime space, will be presented to the planning institution.

- C. In a special maritime zone, the fisheries director-general shall set fishing restrictions in consultation with the Nature and Parks Authority (types of fishing, management tools, area and division of land, time distribution, etc.), with the aim of protecting nature assets in their domain.
- D. The promotion of a plan for nature reserve in a special maritime zone will be carried out after the nature reserves have been approved in the areas defined in the policy document as "exploration areas for marine nature reserves".
- E. The Nature and Parks Authority may submit a plan for nature reserve even before the approval of any nature reserve in the exploration areas for marine nature reserves.
- F. As a condition of approving plans for additional reserves in a special maritime zone, the Nature and Parks Authority will present to a planning institution, an analysis of the ecological functioning of existing nature reserves and their impact on the marine environment in other aspects.

2.5. The nature reserve in exclusive economic zone

- A. The reserve in exclusive economic zone is designed to protect unique and rare natural assets and may also include buffer zones required for this purpose.
- B. It is proposed that the Nature and Parks Authority manage the reserve in exclusive economic zones, including: monitoring, advancing scientific research, supervision and enforcement
- C. Declaration of nature reserve in exclusive economic zone - Declaration of nature reserve in exclusive economic zone is subject to the approval of a law regulating legislation in this area. Contrary to what is acceptable in territorial waters and due to low levels of certainty and knowledge in exclusive economic zone a flexible declaration mechanism is required, allowing for adaptation.
- D. Declaring a reserve in the exclusive economic zone will be subject to the security restrictions in the area.
- E. Before requesting a declaration of nature reserve in the exclusive economic zone, the Nature and Parks Authority will conduct a planning consultation process, which will be based on information and analysis presented by the Nature and Parks Authority regarding the relevant aspects, such as:
 - An ecological survey to describe the properties of the proposed area for conservation in the exclusive economic zone



- Physical description of the proposed area for the conservation
 - A detailed survey of existing users in the zone and how other future users are integrated into the area
 - Proposed distribution of reserves in the exclusive economic zone into functional zones and the different functions and activities in each zone; including the conditions for and flexibility of these uses and activities
 - Instructions for protecting the fauna, flora and inanimate
 - Coordination instructions required with other bodies operating at sea
 - Conservation management assessments
- F. Additional uses within the reserves in the exclusive economic zone: planning consultations for nature reserves in the exclusive economic zone will determine the interface and interactions with other users at sea, existing and future.

2.6. Examination area for conservation

Marine areas in the exclusive economic zone where research, surveys and tests have been carried out and found to have a high potential for preserving natural assets worthy of conservation, on the seabed and / or within the water body. To the extent that nature assets are deemed worthy for preservation, the possibility of declaring these areas as reserves in the exclusive economic zone will be explored.

Due to the challenge involved in conducting research in extensive areas in the deep water, it is not currently possible to accurately locate and characterize all the natural assets in an examination area for conservation. For this reason, for any development works, it is required to conduct a local survey and to examine the environmental impacts on natural assets.

Restrictions will be set within the examination area for conservation, on fishing and other activities based on additional research, surveys, and testing, as there is not enough current available information to set restrictions.

Prior to carrying out development activities in this area, the required surveys and environmental testing for decision making will be defined. Development operations related to the natural gas and oil sector will follow the instructions of the Commissioner for Petroleum Affairs as written in collaboration with the Ministry of the Environmental Protection.

2.7. Limitations on Fishing

- The fishing restrictions are an important tool in nature conservation policies at sea. Other areas may be closed and restricted to fisheries for non-conservation purposes (security areas, infrastructure areas) and thus also contribute to the conservation of



the natural environment. More detailed discussion can be found in the chapter on fishery policy.

- The fisheries director-general in consultation with the Nature and Parks Authority shall determine the regulations that apply to various methods of fishing in a rocky area, in a special marine area and in streams. In any case, fishing nets will not be allowed in a rocky area.
- Restrictions on fishing will include restrictions on fishing technologies or practices harmful to sea life and the environment.
- An updated list of endangered species / species recommended for protection, as declared natural assets, should be examined periodically.

2.8. River estuaries

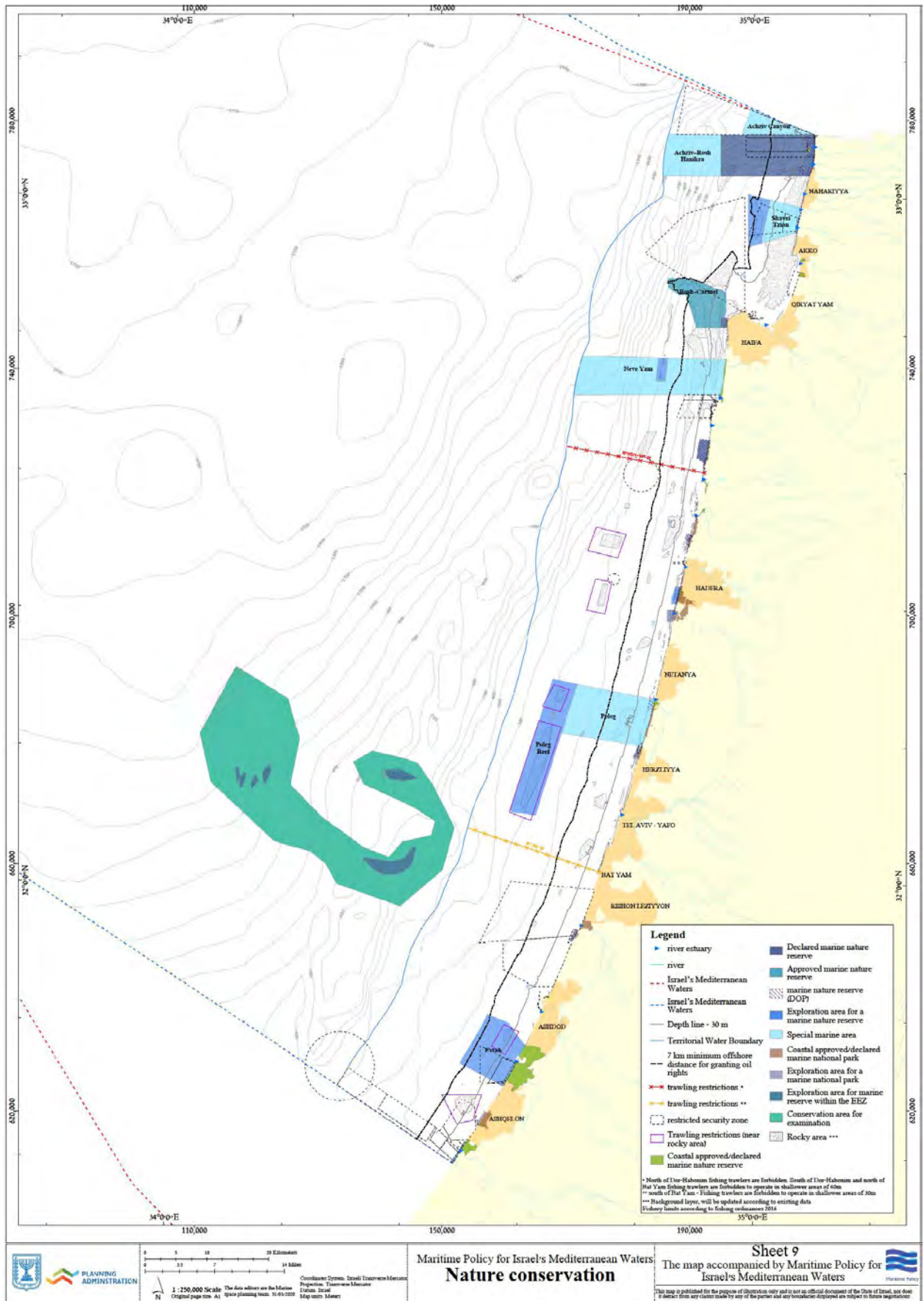
Coastal estuaries are sites of high physical and environmental complexity. The confluence of the rivers with the sea and the encounter between different habitats are of special ecological importance. Some of the coastal streams flow into the Mediterranean Sea in urban areas where their ecological significance is greatly affected by human activity, while other rivers spill into the sea through open or protected beaches.

Stream estuaries are a link between water of various qualities and salinity and therefore form a focal point of morphological, hydrological, and ecological diversity. This physical complexity creates diverse habitats that are inhabited by flora and fauna. The estuary allows rare species, such as the soft turtle and the otter, to expand their range, re-establish existing populations and repopulate places from where they had previously disappeared. The estuary is also an important habitat for fish, such as the mullet fingerlings.

2.8.1. River estuaries policy guidelines

- River estuaries with a unique ecological occurrence such as salt marshes should be preserved.
- Before deciding on development near stream estuaries, an ecological examination of their expected impact will be made with emphasis on stream estuaries in open areas.
- In estuary plans located in urban areas or adjacent to significant infrastructure, the planning institution will examine the need for ecosystem impact assessment in accordance with local characteristics.
- Upon reaching full capability in land breeding facilities of mullet fingerlings production, fishing of mullet fingerlings from the stream estuaries will be prohibited.

Figure 13: Nature conservation



3. Policy tools for active strengthening and rehabilitation

- The Nature and Parks Authority will formulate, in coordination with the various parties concerned, a comprehensive plan for the implementation of policy tools for the active strengthening and rehabilitation of habitats and species in the maritime and coastal space.
- The plan will include current activities and implement additional actions for active strengthening and rehabilitation.
- The plan will be based, in part, on experiments (pilots), an examination of current technologies, monitoring and control that will enhance and improve the planning and implementation, coordination and collaboration with various bodies, authorities and various users in the maritime space. The plan will address, among others, the following aspects:

A. Rehabilitation of damaged habitats

- The Nature and Parks Authority will establish and manage infrastructures for the treatment of injured wildlife and their subsequent release back to nature.
- Careful removal of hazards (such as plastic waste, used pipes and cables, shipwrecks and their remains) from sensitive habitats and nature reserves. The decision for removal will, as necessary and in accordance with the case, be based on an ecological survey to examine the ecosystem that has developed in the area of the hazard.
- Rehabilitation of habitats (for example, active support of the of the *Dendropoma petraeum* [sea snails] population that inhabits the abrasion platforms).

B. Active strengthening and rehabilitative actions

- The Inter-ministerial Committee will coordinate the preparation of an artificial reefs policy document with an ecological emphasis on preventing susceptible habitat damage, preventing settlement and establishment of invasive species (excluding reefs for academic research), and addressing aspects of fisheries and marine sports.
- Design and construction of artificial reefs (including restoration of damaged natural hard substrate, abrasion platforms) will be discussed by the planning institution, in consultation with the Nature and Parks Authority, the Ministry of the Environmental Protection, the Israel Antiquities Authority and the Ports and Shipping Authority. The creation of an artificial reef will be subject to the following conditions:
 - The creation of an artificial reef will be accompanied by an environmental assessment.

- Artificial reefs shall be designed and erected based on ecological considerations, with reference to leisure, recreation and water sports considerations while taking precautionary measures to prevent colonization of invading and opportunistic species.
- The artificial reef structure and its anchorage to the seabed will be tested for its engineering and will ensure the design's suitability for sea conditions.
- Restoration of hard substrate by copying a natural substrate, such as natural calcareous sandstone (in large chunks, from marine development areas) in consultation with the Nature and Parks Authority.
- Examination and research of seaweed planting and populating of rare species.
- Cultivation - planting invertebrates and vegetative plants with the ability of vegetative propagation ("cuttings") in protected areas, in line with the progress of research and knowledge on the subject.
- Transferring wildlife from an area where they are at extreme risk (due to pollution or development) into a reserve, for example - a sea turtle incubation farm.
- Reconstruction and examination of recreating the salt marshes of river estuaries.
- Integrating ecological engineering principles into the design and construction of marine structures by using materials that enhance the diversity of local species and reducing the use of materials that encourage colonization of invasive species. In addition, using complex surface elements that include a wide range of ecological niches to encourage high species diversity and the presence of species typical of the local natural local habitats.

C. Rehabilitation and strengthening of affected species

- Caring for injured and sick marine wildlife and returning them to the aquatic habitat after their recovery (such as the release of rehabilitated turtles at the Nature and Parks Authority's sea turtle center at Achziv).
- Repopulation of endangered marine wildlife, reproductive assistance, captive breeding, and release of young endangered species that can be reared and multiplied under artificial conditions will be carried out following a feasibility study to restore and ensure an environmental state that will allow recovery.

4. Principles to reduce environmental impact during marine operations and activities

4.1. Noise

Minimizing certain noise, of operation and activity, in the marine environment is essential for the protection of marine mammals, sea turtles, minnows and other biodiversity elements. Due to the high speed of sound waves in water, the impact on marine mammals and other marine creatures can reach hundreds of meters to several kilometers from the noise source.

Considering this, underwater noise operations should be avoided during sensitive seasons and in vulnerable areas as much as possible. Noise reduction measures shall be taken, such as: observation of marine mammals and susceptible species around the work site, limiting work in certain seasons, using noise reduction technologies, taking procedures such as pre-tapping when performing operations, and other actions such as per-operation monitoring.

Coordination, within the framework of information security constraints, must be made between the Nature and Parks Authority and the Navy to reduce the acoustic effects of the various military activities. Noise reduction will only be possible if it does not restrict security operations.

4.2. Artificial Lighting

A. Overview

Lighting is important for the safety of people who are active and working during the dark, but in the natural environment this has a negative effect that needs to be offset by minimizing surplus and unnecessary lighting. Light pollution disrupts the biological clock, life cycles, reproductive cycles and the navigability of many marine animals, especially as seabirds, young sea turtles and fish that are attracted to light.

B. Policy guidelines

- The Nature and Parks Authority will prepare a policy document to reduce light pollution along the coast and at sea. The document will examine the issue and define the various tools and methods to reduce the environmental impacts of artificial lighting at sea and at natural and urban beaches on the natural environment. The policy will be drafted in consultation with the authorizing bodies and will not cause any risk to safety and security.
- Sea turtles: in planning and operational considerations of the beaches, the means to prevent light pollution in the coastal hinterlands used for nesting eggs will be defined.
- Sea-facing lighting should be reduced in ports, marinas, rigs, onshore and offshore structures, and moored vessels (taking into account safety restrictions

and vessel visibility), as much as possible. The type of lighting and its intensity, spectrum and lighting direction should also be selected and utilized to minimize disturbance in respect to the marine environment, its local wildlife and the latest scientific findings on the optical sensitivity of these creatures.

4.3. Dredging, stockpiling, and dumping of sand

A. Overview

Marine operations involving sand dredging, suspension, dumping, and mining can cause sediment build-up in the water column (especially small sized grains). The sand suspension is of a temporary nature but causes water disruption and reduced visibility and sunlight penetration. These effects kill and impair the functioning of marine wildlife.²¹ The sediment sinking from the sand suspension process or from materials that have been dumped in the sea, could cover and eradicate habitats and cause loss of seabed biota in the dredging and dumping areas. Dredging in previously contaminated areas could reveal toxic substances and toxic algae buried in sediment or fertilizers and cause undesirable algal blooms. The area of vulnerability can extend up to hundreds of meters and even a few kilometers from the excavation or dumping point, depending on the intensity of activity, sediment characteristics, force and direction of the current.

B. Policy guidelines

- To the extent possible, dredging, stockpiling, and dumping operations, near or within sensitive habitats such as kurkar (calcareous sandstone) ridges and abrasion platforms and during breeding and shoaling seasons of fish and other sensitive wildlife will be avoided.
- When approving sediment mining and dumping operations, the need for continuous monitoring and tracking of toxic materials, algae and bacteria and substrate fertilizers, seawater quality, cover and sediment movement, as well as the aquatic survey on the seabed and above it, before and at the conclusion of the operation, will be considered.
- Near kurkar (calcareous sandstone) ridges with high ecological values, it is preferable to carry out operations which risk sediment suspension and kurkar outcrop cover - when the water flow does not face towards the kurkar ridge (which may cause parts of it to be covered in sand). In this range, the work will be carried out with regular monitoring of the water flow direction.
- Near sensitive areas, optimum dredging and mining technologies should be used to minimize the dispersion of fine sediments.

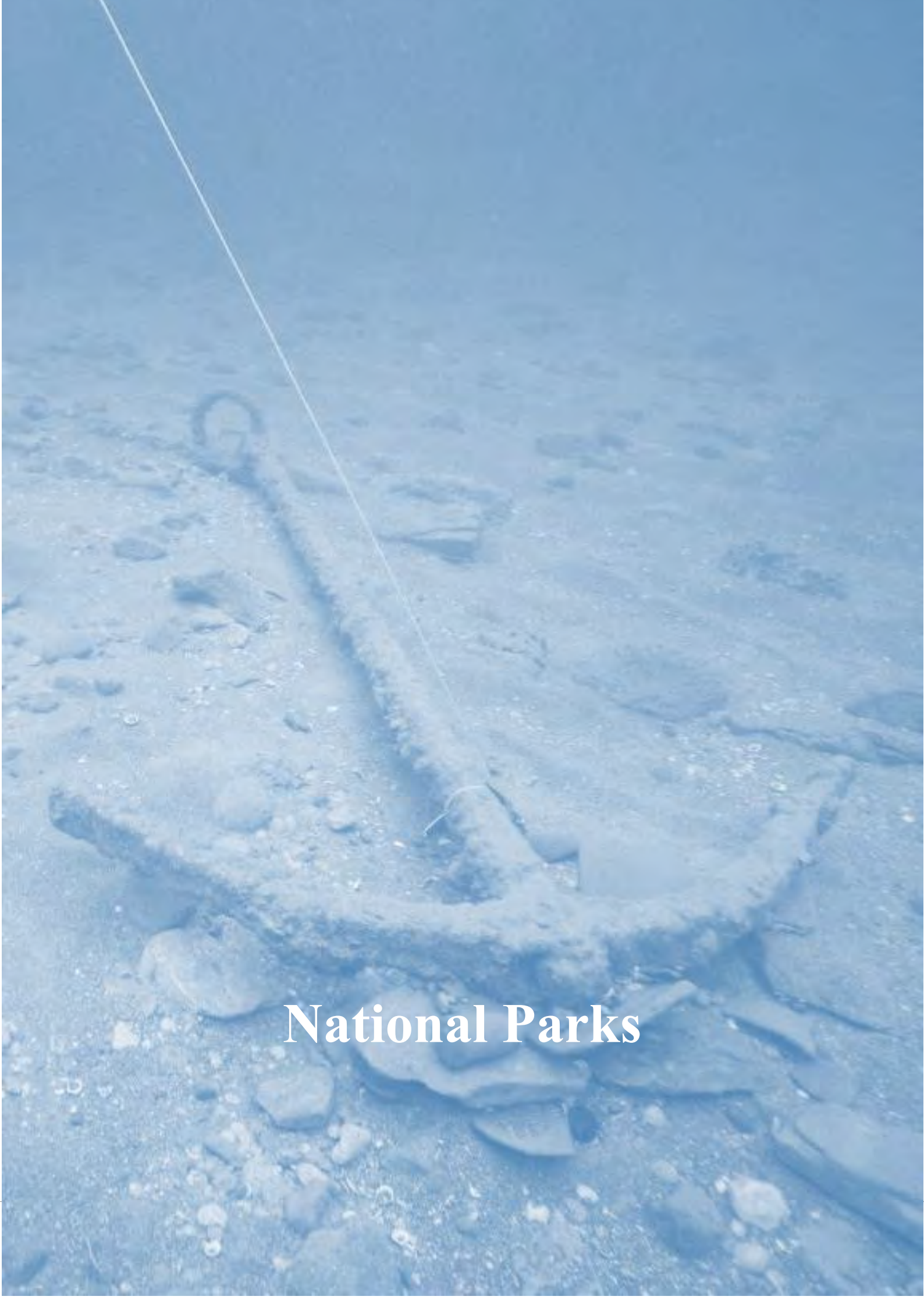
²¹ For example: disturbance and consequent damage to the photosynthesis process of marine plants and phytoplankton that depend on light penetration. Suspended sediments also kill water-fed wildlife (such as oysters) and clog fish gills.

- If importing sand from other countries or regions is considered, that may contain sand with contaminants, invasive species, or materials (such as rocks) from a land source, the quality of the material will be monitored and the need for a cleaning procedure before incorporating it into the system will be examined
- Approval of a temporary stockpile site for dredged materials will be based on detailed mapping that will define the site boundaries, present an analysis of the site and surrounding's environmental values, the monitoring components, and site rehabilitation methods, as needed.
- During operations, anchoring will be prohibited in exposed rocky areas that are habitats of ecological importance.
- When planning a seabed excavation, the environmental benefit of intermittent striping will be considered as a tool to reduce the impact on the ecosystem, to allow the populations of the undisturbed parts to repopulate the excavated areas (the "building with nature" approach).

4.4. Search and production of gas and petroleum

The Ministry of Energy will implement the recommendations of the environmental strategic survey for the search and production of petroleum and natural gas at sea regarding the promotion of research into the impact of the activities of the petroleum and natural gas sector, such as: the impact of water and air emissions during routine and emergency operations, effects of lighting originating from drilling rigs on the biota, examination of avian migratory paths and consequent effects of production rigs, impact of rigs on fouling composition and invasive species, environmental effects of seismic surveys and so on.

The Ministry of Energy and the Ministry of the Environmental Protection will work to define emissions targets and limits from hydrocarbon drilling, production, treatment and transmission facilities in accordance with the National Action Plan (NAP), Environmental Strategic Survey and up-to-date knowledge as it accumulates.



National Parks

Protecting Natural Resources and Heritage | National Parks

1. Overview

Coastal and marine national parks are required to fulfill a number of roles:

Protecting antiquity and heritage sites and their preservation: Most of the important antiquities sites in the coastal environment are located in the areas of national parks or inland nature reserves which integrate conservation (heritage and nature) with the absorption of visitors and recreational needs, such as, Achziv, Atlit, Dor, Caesarea, Apollonia and Ashkelon. These sites include ancient coastal cities, ancient ports, marine structures, and other ancient relics of national and international importance.

The main national parks of the ancient coastal cities include an impressive array of coastal antiquities protected and managed by the Nature and Parks Authority. Archaeological surveys indicate that the spatial distribution of important archaeological finds does not only concentrate on land, as scientific findings of importance and great public value also exist in the shallow waters. In most of the important sites therefore, especially in the ancient coastal cities, the sites are integrated land and sea complexes that are of importance for preserving heritage and antiquities, and which have the potential to create quality and rich leisure and recreational activities. Despite the above, only the land portions of the sites are secured as ‘national parks’ while most of the marine areas housing antiquities are outside of approved or declared national parks.

Leisure, recreation, and sports such as scuba diving, boating, visiting, and hiking (on the shoreline): these activities depend, among other things, on the antiquities and heritage values present at a site. For example, the ancient port of Caesarea is a popular destination for divers. The demand for these activities has been increasing in recent years.

Protection of the marine environment and natural values: this concern is also important in national parks for two main reasons:

- The proper management of leisure and recreation activities based on the values of nature, landscape and the environment is of importance.
- The Nature and Parks Authority, that aims to preserve nature, is the governing body and enforcer of the national parks.

2. Policy guidelines

The policies below apply to national parks and exploration areas for a national park (unless otherwise stated). Until detailed plans for national park are approved, permissible activity can take place within the exploration area for national park, provided that it will not disturb or impair future use of the national park and in consultation with the Nature and Parks Authority.

2.1. Defining Exploration Areas for Marine National Parks

The mapping accompanying the policy document identifies six exploration areas for marine national parks. All territories are located in a direct and continuous sequence to a protected area on land, a national park or a nature reserve, in order to create a continuum between the coastal and maritime areas. This sequence will enable effective preservation management of antiquities, heritage, nature, and landscape, together with a significant increase in the potential of recreational and marine sport activities in the backdrop of important antiquities sites.

2.2. Approval of detailed plans and declaration of national parks at sea

- A. The Nature and Parks Authority, in coordination with the Israel Antiquities Authority, will submit detailed plans to determine national parks at sea within the areas marked in the mapping accompanying the policy document as exploration areas for a marine national park.
- B. The exact boundaries of national parks will be defined in a detailed plan.²²
- C. Once approved, the exploration area will be canceled, and the accompanying map will be updated to the policy document.
- D. As other important archaeological finds suitable for inclusion in a national park are discovered, the Nature and Parks Authority will be able to submit plans for additional national parks at sea.
- E. The plans will address the three main functions of the national parks:
 - 1) Preservation and restoration of ancient and heritage sites and their exposure to the public
 - 2) Recreational and sports activities
 - 3) Preserving nature and landscape values
 - 4) Detailed plan for national parks, Will be prepared in coordination with the Israel Antiquities Authority and the Ministry of Sports and will include, where necessary, reference to the following aspects:
 - Current status survey
 - Survey of antiquities and heritage values in the area of the planned national park.
 - A survey of the uses and users of the proposed national park.
 - Characterization of the national parks' interface with the beach and its nature, landscape, and heritage values.

²² The National Park area approved by the planning institution may be within or outside the exploration area marked by the policy mapping.



- Ecological survey, insofar as there is ecological value in the area proposed as a national park.
- National park instructions and interfaces.
 - Guidelines and instructions for preserving and restoring antiquities and heritage values of the national park.
 - Guidelines and instructions for preserving the flora and fauna of the national park.
 - Instructions and guidelines for the interface of leisure, recreational and maritime activities, that allow for the enjoyment of heritage and nature values, without harming them. For example - instructions and interface for diving, marking dive routes.
 - The interface with the adjacent coastal strip, taking into account, among others, the shore area required to serve recreational, leisure and sporting activities (launch ramps to the sea, equipment storage, buoys for diving boats, etc.).
 - Guidelines on integrating infrastructure into the national park area.
 - Conditions for issuing building, discharge, and dumping permits.
 - Proposal for national park zoning, the functions of each zone, including conditions for their activity.
 - Instructions regarding the coordination required with other organizations operating at sea.
 - Examining the possibility of incorporating artificial reefs into the national park, in accordance with the regulations outlined in the Nature Conservation chapter.

2.3. Water Sports

- A. Sport, leisure and recreational activities are significant uses of national parks.
- B. An underwater archaeological park will be approved in cooperation with the Israel Antiquities Authority.
- C. Diving, including scuba diving and off-boat diving, will be permitted.
- D. Conditions for these activities will be set within a detailed plan for each national park, including setting restrictions on the use of motor vessels for operational, research, diving safety and other requirements.

2.4. Fishing

- A. Trawl fishing will be prohibited, in order to prevent damage to the nature, antiquities and heritage values.
- B. The program or guidelines for operating a national park will set the terms and conditions for other fishing methods.

2.5. Passage of infrastructure lines and associated facilities through marine national parks

The vulnerability of national parks to seabed disturbances requires caution in passing infrastructure lines within them, given the antiquities position at the seabed and the sensitivity of the natural environment. However, due to their limited area and proximity to the coast, the future need to pass infrastructure through national parks will be low.

In marine national parks, the passing of infrastructure lines and related facilities, such as electricity, communications, fuel and gas, will be permitted, insofar as these do not significantly affect nature, antiquarian and heritage values, and in accordance with the following principles:

- A. Infrastructure lines and associated facilities, to the greatest extent possible, will not pass through marine national parks in order to avoid damaging antiquities and heritage values.
- B. The passing of infrastructure lines and associated facilities within a national park will be carried out after alternative passage routes outside the national park areas have been examined and based on an environmental assessment that includes an examination of the antiquities.
- C. The passage of infrastructure lines and related facilities will be done using the best available technology (BAT) to reduce the impact on nature, landscape and heritage values and on-site visitation experiences.
- D. The planning and passage of the infrastructure lines and associated small facilities within the marine national park area will be carried out in coordination with National Parks Authority and the Israel Antiquities Authority.
- E. The plan for infrastructure lines and related facilities will include, among other things, instructions for minimizing the damage during construction and instructions for rehabilitation upon its completion, which will be prepared in consultation with the National Parks Authority and the Israel Antiquities Authority.

2.6. Infrastructure facilities

The establishment of infrastructure facilities that do not serve the needs of the national park are prohibited, and will be permitted only in exceptional cases, owing to the limited scope of national parks, their high number and concentration of antiquities and heritage sites, and the range of sports and recreational activities planned for their areas.

2.7. Marking

Markers will be approved in national parks for the guiding needs of divers and vacationers, safeguarding and protecting antiquities and nature values, including demarcation.

2.8. Security forces

Free passage to the security forces will be maintained at all times.



Antiquities and Heritage



Protecting Natural Resources and Heritage | Antiquities and Heritage

1. Overview

Israel's maritime space is rich in heritage and antiquity left behind by ancient civilizations. Ancient sites include: ancient coastal cities, marinas, ports, shipwrecks and prehistoric villages which have been swallowed by the sea. Heritage sites include lighthouses, ports, port and beach facilities, and aircraft and ship remains dating after 1700 which are not defined as antiquities.²³ These resources are in a sense the cultural assets of humanity and the State of Israel. They form part of the history of the Land of Israel and have cultural, scientific, economic and touristic value. Antiquities are a finite resource, non-renewable and cannot be replicated, once they are lost – they are lost forever. There are dozens of sites on the shallow seabed which have not yet been discovered or explored, in which lie abundant information about the marine and coastal culture of the Land of Israel and of humanity. According to UNESCO's definition, "all the remains and evidence of human activity located on the seabed have cultural, historical and archaeological characteristics."

The Israel Antiquities Authority's role is to handle all antiquities, including underwater antiquities in Israel.

Natural processes and human intervention in the coastal system have resulted in considerable and ongoing destruction of the ancient coastal cities. This is also the fate of underwater ancient sites, such as shipwrecks, which have been stored under the sands for thousands of years and have now been exposed due to the changes that have occurred as a result of technological developments in surveying, deep sea exploration and human intervention.

Most of the coastal antiquities' sites and those in territorial water are proclaimed by the Antiquities Law, which requires prior approval by the Israel Antiquities Authority before any construction or seabed disturbance.

Israel's marine cultural resources database has been prepared by the Israel Antiquities Authority and includes:

- A. Declared antiquities sites under the Antiquities Act as published in the state's public record.²⁴
- B. Geographical database of marine and coastal antiquities sites located in the Israel Antiquities Authority.

²³ See step A of the policy document for details - analyzing the existing status

²⁴ According to section 28 of the Antiquities Law. Declaration of ancient sites is under the exclusive authority of the Israel Antiquities Authority, by virtue of the Antiquities Law and the Antiquities Authority Law. The Israel Antiquities Authority is the only body empowered by law to handle all antiquities matters, including underwater antiquities and to determine/declare them as stated in the Antiquities Law 1978 and the Antiquities Authority Law 1989



- C. An integrated database, which includes declared antiquities sites and major heritage sites. This database was prepared within the framework of the Maritime Policy for Israel's Mediterranean Waters and expresses significant accuracy in relation to declared antiquities sites, which have been the basis for spatial planning information until now. This database will be available to planners and authorities, within the national database to be established, and will form the basis for planning and decision making. Until the establishment of the national database, a mapping of sites will be published by the Planning Administration (see accompanying mapping for the policy document).

Marine and coastal cultural resources, including antiquities and heritage, are presented in the mapping accompanying the policy document.

2. Policy guidelines

2.1. General Aspects

- A. The Israel Antiquities Authority will work to augment information bases, managing and updating them regularly.
- B. The extensive and complete database of marine and coastal antiquities sites, which includes all known complexes and sites today, will be limited in its distribution in order to prevent robbery of antiquities. Specific parts of the database can be provided to enforcement, research and planning bodies, individually as needed, with a commitment not to distribute them. Publication of the data within the framework of research / planning will be limited and without the precise location of ancient shipwrecked ships, where there is a major risk of looting.
- C. The Israel Antiquities Authority, in cooperation with the relevant parties and stakeholders, will act to strengthen and emphasize the obligation and need for all maritime space users to report discoveries of archaeological findings at sea.
- D. The Israel Antiquities Authority will enhance the enforcement and preservation capabilities of marine cultural resources while exploring the possibility of collaborating with various entities to ensure the protection of antiquities at sea and onshore.
- E. The Israel Antiquities Authority will identify the needs for professional manpower that can engage in the management of cultural and heritage resources, laws, regulations, enforcement, rescue surveys, and conservation of marine antiquities.
- F. As a matter of principle, the construction of marine structures should be avoided, as well as the laying of pipelines in proximities that could jeopardize important antiquities. When remains are discovered in an area designated for drilling, construction or pipe laying operations, finding the best solution that will allow the preservation of antiquities should be strived for. Priority will be given to changing pipeline routes or changing the location of marine facilities, while maintaining an adequate margin of safety. The safety ranges from the antiquity's sites will be



examined individually according to the type and nature of the site and according to the Israel Antiquities Authority rules.

- G. The Israel Antiquities Authority will work to promote and improve work capacities, surveys for locating and saving marine cultural resources and enforcement.

2.2. Proclaimed (declared) antiquity sites.

- A. The Israel Antiquities Authority will, from time to time, update the list of declared antiquities sites on the coast and at sea, which will include examining the need to reduce the area of the proclamation, to cancel the declaration of sites from which the antiquities were removed and to discover new sites. All in accordance with the existing databases and the accumulated scientific knowledge.²⁵
- B. The Israel Antiquities Authority will determine value ranks for the declared antiquities sites and formulate policies for their conservation and management. This data will form the basis for planning and decision making.

2.3. Antiquities and Heritage Complexes

The antiquities and heritage complexes, which are marked in the mapping accompanying in the policy document, outline the boundaries of the declared antiquities sites, which usually extend over a wider area. These complexes contain collections of individual sites or single discoveries. The mapped sites will be more precisely defined as research of these sites progresses and will be recorded in the policy document as it is updated. The Israel Antiquities Authority will accordingly update the areas of the declared antiquities sites (reduction or extension)

- A. Development work that will cause them to be violated should not be carried out in areas with a large concentration of antiquities and heritage complexes. Only uses with direct connection to the sea should be permitted in areas which serve the public.
- B. In areas where there are antiquities and heritage complexes, efforts will be made to preserve the natural coastal route and landscape views.
- C. Archaeological excavation works shall be carried out in such a way as to prevent or minimize the environmental impact on the nature and landscape and include, as necessary, restoration of the site at the end of the works.

²⁵ The Antiquities Act, 1978 and the Interpretation Law, 1981, indicate that authority to declare an antiquities site under section 28 of the Antiquities Law also includes the power to cancel a declaration. Article 15 of the Interpretation Law states that "the authority to impose regulations or to give an administrative directive - also means the authority to amend, amend, suspend or revoke the way regulations or regulations have been enacted." Therefore, there is no need for legislative change to cancel such a declaration



2.4. Singular antiquities sites (not in a declared antiquities site and / or antiquities and heritage complexes)

The following policies will apply to antiquities sites (which are not within a declared site or in antiquities and heritage complexes):

- A. Strive to preserve the remains within the site, according to the importance of the findings, while they are covered or exposed, and conserve the site environs.
- B. At the appropriate sites, at national parks and nature reserves, as determined by the Israel Antiquities Authority, The Inter-ministerial Steering Committee for Maritime Space and the Nature and Parks Authority, conservation and reconstruction work must be undertaken to prepare them for public reception, as underwater parks for divers or as points of interest at the beach.

2.5. Heritage values of historical value, which are not ancient

Along the coast and the sea, there are heritage sites that are not ancient (created after 1700), such as lighthouses, piers, vessels, and aircraft. In the absence of protection for these sites, they are exposed to destruction by the sea and theft.

The Inter-ministerial Steering Committee for Maritime Space, in cooperation with the relevant parties, will work to promote a plan for documenting and treating historical heritage sites at sea that are not ancient.

2.6. Ancient coastal settlements

The ancient coastal settlements consist of marine and onshore components. The ancient coastal settlements are affected by sea weathering, which causes massive destruction and collapse of parts of the sites (e.g. Tel Ashkelon, Tel Apollonia). In ancient coastal cities with seawalls built on rocky infrastructure bases, the sea walls and parts of the city suffer destruction from sea waves (e.g. Acre, Atlit). Coastal settlements are usually located in designated archaeological sites. In addition to the policies that apply to declared archaeological sites, the following for ancient coastal settlements will apply:

- A. The Israel Antiquities Authority will work to promote the preparation of a comprehensive work plan for the conservation, protection and rescue of Israel's ancient coastal settlements, together with the relevant agencies: Israel's Nature and Parks Authority, the Ministry of Tourism through the Mediterranean Coastal Cliffs Preservation Government Company and others. The plan will include, among other things; definition of required emergency operations, sources of funding, rescue excavations, conservation work, site protection by various engineering means, managing surface runoff, maintenance of the sea walls, strengthening foundations and monitoring. The program will be based on the risk assessment and the detailed



plan prepared by the Israel Antiquities Authority within the framework of the policy document for the coastal cliffs.²⁶

- B. In ancient coastal cities where there is an ancient port, damaging the outline of the ancient port should be avoided. The deepening and maintenance of ports located at a declared antiquities site will be carried out in accordance with the directives and conditions of the administrations of the Israel Antiquities Authority and under the supervision of the Israel Antiquities Authority.
- C. As other important archaeological finds emerge, the Nature and Parks Authority will be able to submit plans for additional national parks at sea, or to expand existing ones.
- D. At sites where the local authority is responsible for preserving and maintaining the sites (such as Shikmona, Acre, the Crusader cemetery in Atlit, Ashdod Sea), the local authority will work together with the Israel Antiquities Authority for the conservation and upkeep of the coastal and marine sections.

2.7. Flooded ancient settlements

There is a theoretical prospect of prehistoric remains in waters up to 120 m, an area which at the height of the last ice age was on land. However, in the shallow areas (at depths of up to 20 m) there is a greater chance of finding prehistoric remains. The remains in a prehistoric settlement flooded by the sea are subject to destruction and marine erosion.

- A. Salvage excavations should be performed to document ancient remains that are expected to be destroyed as a result of erosion and storms.
- B. Exposed sites on the shore and in shallow waters must be covered by sand to save them from destruction.
- C. Atlit Sea site shall be conserved, avoiding any construction in the northern Gulf of Atlit and Neve Yam Bay.
- D. Construction and development should be avoided as well as drying up sites where flooded prehistoric settlements surely exist. If development activity is planned in areas where flooded ancient settlements can be found, the Israel Antiquities Authority will review the requirements, including: preliminary testing, including underwater dive surveys, test pits, ground penetrating sonar, and core samples.

2.8. Antiques and other relics within the boundaries of modern ports

Some of the marinas and active ports in Israel were built on the remains of ancient ports and marinas. Deepening and maintenance operations using heavy tools can expose or damage existing ports remains

²⁶ Cliff collapse on the coasts of Israel, ways of coping, and the economic, public and environmental implications, Prime Minister's Office, 2010



- A. Archeological supervision and inspection during the development or maintenance of marinas and ports in areas where there are antiquities must be ensured. Development in the site will be done in accordance with the directives and conditions of the Israel Antiquities Authority's administration, in the earliest possible coordination.
- B. The Israel Antiquities Authority will determine the need to examine excavated material from the port.²⁷
- C. Local authorities, together with the Israel Antiquities Authority, the ports companies and The Council for Conservation of Heritage Sites in Israel, will identify and map historic sites and facilities within marina and port areas such as lighthouses and piers, and integrate them into the uses and activities of the port / marina.

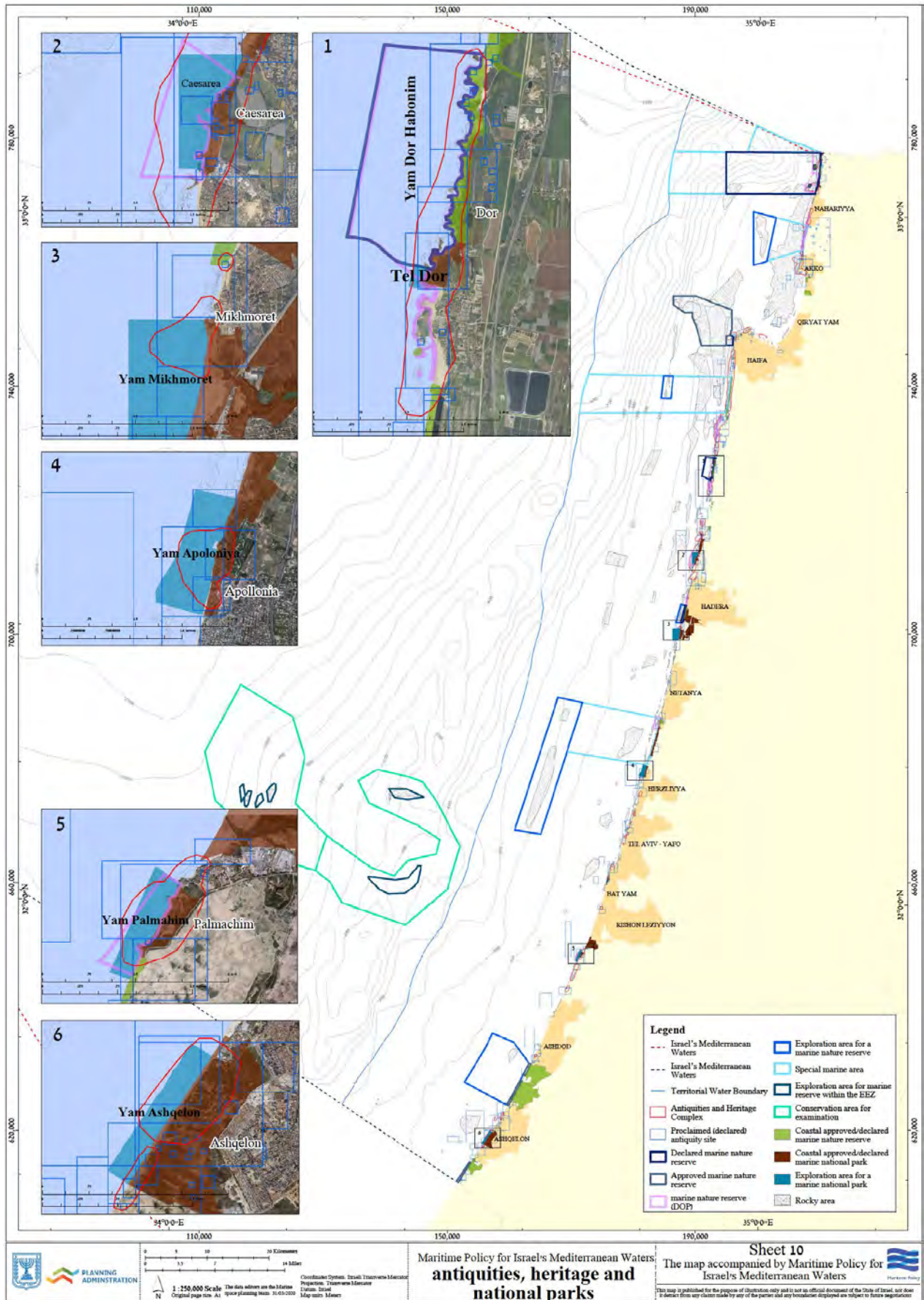
2.9. Ancient shipwrecks and cargo

The information available today about ancient sites and cultural heritage in the depths of the sea of territorial water and beyond is extremely meager, as this area has not been thoroughly explored. The locations of hundreds of shipwrecks and cargo ships are known along the coast of Israel, the majority near the coast and some in the deep sea at hundreds and thousands of meters. In some cases, especially shipwrecks that were devastated in relatively sheltered areas near the coast, much of the ships' wooden body survived.

- A. In the shallow sea, up to a depth of 15 m - the Israel Antiquities Authority will prepare a plan for locating and discovering the remains of drowned ships, and will establish a policy regarding their continued treatment: site preservation, archaeological excavation, removal, etc.
- B. As part of legislation, ways to protect shipwreck sites outside of territorial water must be explored from private and commercial entities locating and unearthing the remains of ancient ships.
- C. Archaeological excavation should be avoided in the deep sea, and the vessels discovered in the surveys should be left in place due to the cost and complexity of conducting excavations in the deep sea and sparse findings in this area. Preliminary surveys must be carried out according to the Israel Antiquities Authority's guidelines, before carrying out infrastructure projects. After discovering a ship on the deep continental shelf, there is no need to excavate it and it is sufficient to take samples and examine the need to divert the route of the venture.

²⁷ As was done during the deepening of Acre Port

Figure 14: Antiquities and Heritage, National Parks





Sand resource

Protecting Natural Resources and Heritage | Sand Resource

1. Overview

Most of the Mediterranean coasts of Israel and the adjacent seabed are built mainly of fine-grained quartz sand, which is an essential natural resource for preserving the marine and coastal environment, as well as all the public activity in these areas. Sand is in short supply in most Mediterranean countries, including Israel.

The marine sediment in Israel, as well as the onshore sediment, has been used intensively over the last hundred years. This activity caused the shoreline to retreat to the east and has narrowed the sandy strip to tens of meters on some beaches. Some of the beaches, where intensive sand mining took place, have remained narrow and have not been rehabilitated for many years, while others are currently still exposed.

Since the mid-1960s, marine sand has been used primarily to dry sea areas in ports and marinas.

The Policy Document for Coastal Water, published in 1999, recommendation to prohibit marine sediment mining at shallow depths of 30m or less and was approved by the National Council for Planning and Construction. In practice, most of the excavations of marine sand and its dumping along the shores of Israel, took place at water depths shallower than 20 m.

Other uses of marine sand include beach nourishment for the purpose of restoring and expanding them, protection of the coastal cliff, as well as marine pipe-line coverage. These uses are characterized by the transportation of sediment from one place to another within the maritime and costal area.

Currently, there is a major shortage of marine sediment in relation to the needs (coastal protection) and an increase in the use of this vital resource is expected.

Analysis of the existing situation shows that currently, there are several government ministries which are responsible for handling the various aspects of the sand resource, but lacks a singular body to manage the marine sand resource and deal with all its related issues, with emphasis on: environment, economy, industry and construction. The purpose of the policy for managing the marine sand resource in this chapter is to maximize the benefits of utilizing the marine sand resource while emphasizing the preservation of the marine and coastal environment and the harmful implications as a result of the sediment extraction.

2. Policy Background - The marine sand resource

2.1. Properties of marine sand and its spatial layout

The amount of sand in the upper strata of the seabed in Israel's shallow continental shelf (from the shoreline to a water depth of approximately 30 m) is estimated at approximately 4 billion cubic meters. Of this amount, approximately 1.5 billion cubic meters are in the area which extends between water depths of 15 m and 30 m. The thickness

of the sediment in this area varies from place to place, and the average depth is approximately 2 m.²⁸ An additional amount of sediment is found at water depths greater than 30 m, but it is covered or mixed with layers of thin sediments (sandy-tin and clay-tin) that are not suitable for filling marine structures and for rehabilitation and expansion of beaches. The sand filtration process (appropriate in terms of its size) from the thin sediments, is very complex and expensive, and currently mining under these conditions is not economically viable

The coastal strip adjacent to the shore, the sandy beach profile and its extension into the sea, up to a water depth of 30 m, are divided into 3 zones - the surf zone (shallow water up to depth of 6.5 m), the extended surf zone (water depth up to 15 m) and the wind-induced zone (water depth 10-30 m).²⁹ Sand mining operations in the typical and widened surge areas can cause significant negative morphological effects on the coastal zone.

The size of the sediment grain stratified on the bottom of the shallow continental shelf is (relatively) coarser as you approach the shoreline.

The highest quality sand in terms of grain size and its suitability for beach nourishment and restoration is usually found in the closest strip to the beach (in most places at shallower depths than 5 m). However, this strip is extremely sensitive due to its dynamism, and every excavation operation may severely damage adjacent coastal morphology.

Marine structures (such as ports and marinas) and coastal structures (such as groin and detached breakwaters) cause significant morphological changes in the shape of the nearby beaches and the seabed. The degree of impact depends on the size of the structure and its distance from the original coastline into the sea.

Seaside walls and coastal infrastructure cause waves to almost fully reflect away, and the development of strong currents that sweep the sand away at their facade. This results in erosion of the sandy strip.

Sediment regularly sinks **in the shipping lanes and entryways of the ports, marinas, and cooling pools**. As a result, sandy creeks develop in these areas that interfere with and even endanger the vessels. The amount of sediment sinking and accumulating every year at each port and dock is not fixed. Due to cost / benefit considerations, not all the amount accumulated is excavated every year, so there are gaps between the sediment excavation

²⁸ This rough assessment is mainly based on works and research carried out in the 1990s, as part of the feasibility study of establishing artificial islands off the coast of Israel

²⁹ The typical/characteristic surf zone usually extends up to 500 m from the shore (shallow water depth of 6.5 m). The area is characterized by a very dynamic coastal profile that varies **according to wave characteristics which enter the coast of Israel each year ($H_s \geq 5\text{m}$)**.

B. Extended surf zone - during an extreme wave storm that returns more than once a year, the surf zone extends to greater than 500m from the shore, and can even extend up to 800m from the shore (shallow water depth of 10m) in a storm whose significant wave height exceeds 7 m ($H_s \leq 7\text{m}$) and returns at least once every 20 years. In extreme and especially rare wave storms that occur at a frequency of once every 50 to 100 years, the surf zone can even extend to a distance of 1.2 km from the shore (water depth of 15 m).

C. The wind-induced zone extends to the entire shallow continental shelf (a distance of 2.5 to 3 km from the shore). Part of the shallow water overlaps with the shallow zone and is mainly affected by the shore-borne waves, and the part which is in deeper water (water depth 30-10 m) is characterized by a relatively stable ground profile that varies according to the intensity of wind-driven currents.

and dumping permits given by the authorities, to the actions that are actually taken. It can be seen that the amount of sand excavated each year in Israel, on average, is over 200,000 cubic meters and mostly from port areas. This sand is mostly high quality, and in terms of grain size is suitable for replenishing beaches.

On the exterior of the main breakwaters of the ports and marinas, large amounts of sediment have sunken and accumulated. This sediment is for the most part good quality, and in terms of grain size is suitable for beach replenishment. However, there are no national-level plans for using this sand, nor is there a management system to guide its shipping to the beaches which were affected as a result of the erection of these marine structures.

2.2. Future uses of marine sand

It is difficult to assess future needs. However, in line with the information available at the present time, a number of major users of marine sand sources are expected, which can be divided into two main groups:

- Uses that divert sand from the marine system (e.g., for filling platforms / docks).
- Uses that move sand from place to place within the marine and coastal system (e.g., beach nourishment and expansion for the protection of cliffs and restoring drifting coastal strips).

2.3. Cost aspects of utilizing the marine sand resource

The prices of dredging, mining and marine sand utilization vary according to the type and scope of the project, and are influenced by these factors:

- A. Amount of sand excavated - the larger the amount of excavated, the lower the cost per cubic meter.
- B. Depth of mining - mining that is conducted at greater sea depths, is more complex and requires a larger ship equipped with more advanced technological means.
- C. Transport distance of sand from the excavation site to the dumping site at sea - the greater the distance between the excavation site and the dumping site, the greater the cost of transporting it as part of the entire project.
- D. The dumping / replenishing method - there are several dumping / dispersing methods for sand excavated at sea tailored to the unique characteristics of each project, which affect their costs.
- E. The thickness of sediment and replenishment location.

2.4. Technological limitations to effective utilization of sand

In Israel, marine sand is dredged by various types of offshore operations, including: depth maintenance at ports, marinas and at cooling water pools of the national electricity company. The dredging technology (dredger ship) used today in marinas in Israel does not allow efficient utilization of the resource for the benefit of coastal sand replenishment as the vessels cannot cast the sand close to the shore. The same is true of marine pipeline projects, which require double action of excavation and sand casting.

2.5. Sustainable Sources of Marine Sand

The following sources are highly suitable for sand dredging due to the expected low environmental impacts of sand mining:

- A. Maintenance of operating depths in ports - sand accumulated in the sailing canals, the entrance, maneuvering and docking areas in ports (subject to examination of the environmental characteristics of the sediment - pollution, anaerobic environment, etc.) as well as in Haifa Bay (in polygons approved for dredging to create the bay port).
- B. Maintenance of operating depths in marinas and water-cooling pools for power plants.
- C. Sand that accumulated close to and along the breakwaters of ports and marinas.
- D. Sand from land sources - excess from (sandy) excavations created as a result of land development works, in the coastal area and beyond, for example as a result of construction and development in the coastal hinterland.

3. Policies guidelines for managing the marine sand resource

Clear policies and a framework for the sea-sand resource management must be adopted. Overall management of the resource according to the guidelines in this chapter will enable more efficient utilization of marine sand for various needs, including: rehabilitation and expansion of eroded beaches and other public purposes, along with environmental damage reduction.

3.1. Marine sand resource management

- A. The Inter-ministerial Steering Committee, through the Planning Administration, will define the marine sand resource management mechanism - professionally and efficiently, from a broad national perspective of the issue and in accordance with a clear policy.
- B. The – the Committee for the Protection of the Coastal Environment will discuss and approve plans for sediment mining and set the conditions for the operations which will be exempt from permits.

C. The Inter-ministerial Steering Committee will work in coordination with the relevant entities, including the Natural Resources Administration of the Ministry of Energy:

- Formulate an overall policy for managing the marine sand resource.
- Define an effective, sustainable, and long-term management mechanism for the marine sand resource with a national scope while considering the multiplex of interests, needs and considerations.
- Setting priorities for the use of marine sand while maintaining the marine and coastal environment.
- Approval of sediment dredging, transporting, and casting operations through a professional committee.
- Promoting research, mapping, and gathering detailed information about the stratified marine sand resource on Israel's continental shelf, and finding sites from which sand can be mined for various uses.
- Perform systematic and continuous environmental monitoring of the marine sand resource, which will provide an information base for closely tracking the morphological and sedimentological effects of mining and dumping, both on shore and at sea.
- Monitoring and researching the morphological and sedimentological changes on the continental shelf of Israel.
- Examination of substitutes for marine sand (for example: quarry sand and recycled sand) and sand sources outside Israel.
- Examining the legal and proprietary aspects of the use of the marine sand resource, including promoting legislation, as required, to manage the sand resource in a long-term national perspective, for the benefit of the general public.
- Preparing a plan for areas to temporarily store sand at sea, while striving to reduce the cost of sand transport for coastal rehabilitation.
- Examining state-of-the-art technologies and engineering equipment that will reduce the cost of sand mining and dumping, both at sea and onshore.
- Promoting controlled trials to test the effectiveness of various coastal defense measures.

3.2. Sand mining policy

- A. Due to environmental impacts of sand mining and its dumping at sea (impact on beaches, on fauna and marine vegetation), marine sand mining along the coast of Israel will be carried out at water depths greater than 15 m.
- B. Sand can also be mined at water depths less than 15 m under the following conditions: sand dredging for maintenance of marine structures, transportation of sand that has accumulated along marine structures, and maintenance work on beaches which have been widened.

- C. Notwithstanding the provisions of sections A and B, in exceptional cases permits will be allowed with the approval of the Committee for the Protection of the Coastal Environment, after examination of the entire range of considerations.
- D. The procedure for selecting a sand-mining site at sea or a mining program will be accompanied by an environmental impact assessment or environmental assessment, unless the Committee for the Protection of the Coastal Environment has been granted an exemption from the preparation of this document.
- E. An environmental impact assessment and statutory plan will not be required for transportation of sand accumulated within and along offshore structures for beach nourishment.
- F. Marine or coastal sand cannot be mined for onshore development that is unrelated to the coastal and marine environment.
- G. Sand mining in areas designated for marine reserves or national parks is prohibited.
- H. Sand mining and dumping should be avoided as far as possible within the vicinity of hard substrate of high ecological value. The exact range will be determined by individual examination conducted prior to mining.
- I. Any sand mining or dumping near hard substrates of high ecological value will be required to submit a work plan to the Ministry of the Environmental Protection, including a monitoring plan and drift mitigation measures.
- J. As a rule, sand mining from the dry coastal strip is prohibited. Transporting sand in small quantities by the municipal authority is permitted, subjected to guidelines issued by the Ministry of the Environmental Protection and the Inter-ministerial Steering Committee.
- K. Retrieving sand originally transferred for beach nourishment but has drifted into the adjacent shallow waters is permitted.
- L. Sand mining and dumping will be done in coordination with the Israel Antiquities Authority.
- M. Sand mining that endangers marine infrastructure lines will not be permitted.
- N. From an environmental perspective, marine sand mining and dredging will utilize the best available technology (BAT).

3.3. Considerations in allocating and utilizing the marine sand resource

- A. Marine sand will be used for purposes of public importance only, such as: protection of the coastal cliff, rehabilitation and expansion of beaches for recreation and tourism, rehabilitation of sandy habitats, and reclamation for marine structures belonging to the government (e.g. ports).
- B. Priority will be given to effective beach nourishments, whereby sand is maintained in the system for the long term without the need for repeated short-term sand



nourishment. In mining operations for the purpose of laying marine piping, sand mined for laying the marine piping will also be used to cover it when in place / buried.

- C. Priority will be given to the use of sustainable sediment sources such as sand that has accumulated in existing marine structures or sand derived from excavation surplus from onshore development work.

3.4. Guidelines for marine sand use

- A. A plan for the establishment or the expansion of marine and coastal structures will include a thorough examination of the morphological and sedimentological effects on the seabed nearby and along the coastal strip adjacent to them, to the north and south. The area of impact to be examined will be determined by the environmental examination guidelines for each project.
- B. Mandatory conditions will be established for those who submit the plan for the establishment of marine structures that may affect adjacent beaches, to monitor and remedy adverse impacts produced after its construction and throughout the life cycle of the structure.
- C. Dumping of imported sand will be permitted after an examination of the quality of the sand in terms of granulometric, chemical and biological aspects and suitability to the environmental characteristics of the dumping site.

An aerial photograph of an industrial facility, likely a refinery or chemical plant, situated along a large body of water. The facility features numerous white storage tanks, complex piping, and two prominent tall, cylindrical smokestacks. The water in the foreground is a deep blue, and the sky is overcast. The overall scene suggests a significant industrial presence near a coastal or estuarine area.

Preventing and Coping with Marine Pollution

Protecting Natural Resources and Heritage | Preventing and Coping with Marine Pollution

1. Overview

Sea pollution is defined as direct or indirect infiltration of liquid or solid matter and / or energy by humans into the marine environment, causing harmful effects to the marine ecosystem and to human activity in the marine environment.

Good quality seawater is a prerequisite for the diversity of human activities in the maritime space, and for the existence of a stable and healthy ecosystem. Seawater pollution can pose a threat to seawater desalination, to fishing or marine aquaculture, as well as the ability to utilize marine resources in tourism and for sports and recreational activities at sea and on shore. Contaminants are assimilated into the food chain at sea, accumulate in the sea fish and eventually reach the marine alpha predators as well as humans.

Maintaining seawater quality and preventing pollution from various sources is a fundamental principle in the policy document for the maritime space of Israel, as well as in other countries worldwide.

The physical geography of the Mediterranean Sea (being a closed sea), its ecological sensitivity and intensive human activity that include: about one-third of the world shipping movement, the world's largest tourist center with hundreds of millions of tourists a year, and the intense activity of the hydrocarbons sector, make the consequences of pollution especially severe; thus, reinforcing the obligation to reduce the pollution of the Mediterranean seawater.

The array of marine pollution is a major driver of change in the marine ecosystem. Under the definition of sea pollution, other pollution factors such as acoustic (noise), light pollution, biological pollution (such as the introduction of species into the sea from ballast water of ships, viruses and pathogenic bacteria of terrestrial origin), warming and acidification of the sea, sand drifting, and other potentially harmful activities to the environment can be included. This chapter does not refer to the broad definition of these types of pollution, but to the direct or indirect discharge of materials into the sea from marine or terrestrial sources. The treatment of light and noise pollution is included in the chapter on nature conservation.

1.1. The main sources of land pollution are

- Land and marine sources of runoff, brine, cooling water or effluent (each source has different impacts on the marine environment).
- Coastal rivers and streams that flow into the sea carry various contaminants from the land, including various urban, agricultural, and industrial pollutants.
- Solid waste mainly derived from human activities on the coasts.

- Ports and marinas.
- Malfunctions and events related to the spillage of various materials on land.
- Inland sources of air pollution carried over as atmospheric pollution.

1.2 The main sources of pollution originating from human activity at sea are:

- Marine vessels
- Marine infrastructure
- Malfunctions and spills of material at sea
- Marine waste sites

Most of the pollution from anthropogenic sources originates on land. In Israel, there is an updated National Adaptation Plan to reduce pollution from land sources (NAP 2016), which is part of an overall framework of Mediterranean countries assembled by the UN. The Ministry of Environmental Protection is responsible for the implementation of the plan, as well as legislation and enforcement of regulations related to sea pollution. The guiding policy for this program is the reduction of contamination to the sea from terrestrial sources by actively reducing it until it can be proven that it cannot be further reduced or until it is immeasurable.

Complementary legislation and regulations to prevent pollution of the sea from land and marine sources exist in Israel and provide the framework for extensive enforcement, management, fines, levies, and supervision activities. Recommended standards for the Mediterranean Sea water in Israel was published by the Ministry of the Environmental Protection in 2002 but did not receive legal status. The National Action Plan (NAP) formulated in 2016 updates and enhances this document, and it should be approved and budgeted.

Israel has not yet adopted a clear definition of Mediterranean water quality or marine ecosystem health.

2. Policy guidelines

2.1. Establishing a standard for the seawater quality of the Mediterranean Sea and measures for the health of the marine ecosystem

- A. The Ministry of Environmental Protection, in collaboration with the Ministry of Health, the Israel Oceanographic and Limnological Research and the Nature and Parks Authority, will work to promote an up-to-date standard for the quality of the seawater that ensures protection of the marine environment with respect to public health. The standards will be consolidated in legislation.



- B. The Ministry of Environmental Protection, in collaboration with Nature and Parks Authority and Israel Oceanographic and Limnological Research, will work to define the indices for the health of the marine ecosystem.

2.2. Update of legislation, environmental standards, and coordination

- A. The legislation and regulations will be implemented in accordance with the updated strategy of the Barcelona Convention, to reduce the burden of pollution on the marine environment, and in accordance with the State of Israel's commitment to international treaties.
- B. As part of the Ecosystem Approach (EcAp), the defined Good Environmental Status (GES) goals will be relevant and tailored to Israel's offshore and onshore environment and implementation schedules.
- C. The Ministry of the Environmental Protection will examine the need to update the permit levies for discharging / dumping at sea.
- D. The Inter-ministerial Steering Committee for Maritime Space will work to coordinate the actions taken by the various state offices to prevent pollution of the sea and the coastal environment: environmental protection, health, energy (water desalination), transport, security, agriculture, domestic as well as local and regional authorities.

2.3. Pollution from drainage runoff

Approximately 160 runoff drains are scattered along the Mediterranean coast of Israel and flow with surface runoff and summer drainage (excess water that flows into the drainage system as a result of irrigation water, emptying swimming pools and more) from various sources into the sea. The seawater pollution from summer drainage has an effective technological solution - the establishment of summer drainage pumping stations at the drainage outlet on the coast. However, this solution is only applied at about ten drains. The urban drainage system that flows into the sea with the first rains also discharges debris and contaminants that accumulate in the drainage system during the dry season. Solid waste pollution has a partially efficient solution - placing waste traps and cleaning the municipal drainage channels before the rainy season begins. This solution is hardly implemented.

2.3.1. Coastal drainage policy guidelines

- A. As far as possible, the opening of new drainage outlets along the coast should be reduced.
- B. Measures will be taken to reduce the flow of summer drainage into the sea, such as: the establishment of summer drainage pumping stations and means for solid waste collection in all drains along the coast.



- C. An obligatory cleaning procedure will be implemented prior to the rainy season by the local authorities of the municipal and local drainage system, to reduce the extent of pollution in the first rain events.
- D. Each detailed project along the shoreline that will include new drains into the sea will include an examination of the effects on the quality of the seawater and the solutions required to prevent sea pollution.
- E. Local and regional authorities as well as water and sewerage corporations will ensure separation of the drainage and sewerage systems.
- F. The Ministry of Environmental Protection will analyze and quantify the extent and nature of the pollution emitted from the drains and will establish priorities for the treatment of drains. The order of priority will be based, inter alia:
 - The size of the drain, the flow, and the area of the drainage basin
 - The quality of the runoff that characterizes the drain
 - Land uses and designations of the drainage basin
 - Sensitivity of the marine ecosystem in the drainage outlet area

2.4. Polluted areas (Hot Spots)

Three contaminated sites stand out from the data in the National Adaptation Plan (NAP): the Shafdan WWTP outlet (currently has ceased flowing wastewater), the EIL plant in Acre, and Agan Chemicals in Ashdod.

2.5. Site-specific sources of pollution

The most significant site-specific sources of pollution in the Mediterranean, currently active in Israel in terms of changing the chemistry and biology of seawater, are the estuaries and marine discharges. From these sources, emphasis is to be placed on toxic and bio-accumulative pollutants categories such as mercury, organo-halogens, tin, and organic phosphorus. The state must continue the policy of reducing discharges and reducing the concentration of effluent pollution flowing from the land into the sea by:

- Maintenance and upgrading of wastewater treatment facilities to a tertiary level that allows unrestricted irrigation and gradual cessation of effluent discharge from wastewater treatment plants, such as is being carried out in the Herzliya wastewater treatment plant.
- Adopting discharge reducing technologies by all polluting bodies, and decrease pollution loads in coastal streams.
- Monitoring to quantify the pollution that flows to the sea from: the coastal streams, the subsurface, and drainage basins where there is significant pollution.
- In the long-term view of continued population growth and energy and water consumption in Israel, the effects of cooling water and power plant effluent (brine) emissions from the

desalination plants should continue to be monitored and technologies that reduce the impact of emissions on the marine environment should be adopted.

2.6. Expansion of goals, activities, and sources of income of the Marine Pollution Prevention Fund

The fund will consider expanding its goals, activity, and sources of income for dealing with additional types of pollution and for dealing with the various aspects of marine pollution. As part of the expansion of the activities, the Ministry of the Environmental Protection will review: increased inspections, monitoring and enforcement to reduce marine pollution, take actions to restore the marine environment, protect the marine ecosystem and increase preparedness for exceptional pollution events. As part of the activity expansion, the following should be intensified: significant reduction in pollution caused by surface runoff, enhancement of coastal cleaning operations and increase public awareness regarding the damage from solid waste pollution by coastal users.

2.7. Sea pollution from Petroleum

Sea pollution by petroleum represents is one of the most significant risks to the marine and coastal ecosystem and to various infrastructure activities such as desalination plants and power stations, and may harm the coastal tourism industry, sports, and marine activities. The shipping sector poses the most risk due to tankers, fuel connections and chemicals and even from merchant ships' fuels. In recent years, there is added risk from exploration, production, and transmission of hydrocarbons from the sea.

Infrastructures such as treatment rigs and hydrocarbon pipelines will utilize the best available technologies to prevent and reduce petroleum based marine pollution.

In 2014, the Ministry of the Environmental Protection drafted a National Contingency Plan for Preparedness and Response to Oil Pollution Incidents, in accordance with the government's decision. In view of the various developments in the field of hydrocarbon exploration and production and the changes in transportation of fuels, the Ministry of the Environmental Protection will review the appropriateness of the national contingency plan for preparedness and response to petroleum pollution incidents and will update it accordingly.

As part of the State of Israel's preparations for contamination events, the issue should be regulated by legislation and budget the preparations accordingly.

2.8. Solid coastal and marine waste

The solid waste on the beaches, and especially plastic waste, is one of the most serious problems in the field of marine environmental protection. Since the major source of coastal debris (about 60%) is coastal vacationers, the policy focuses on four areas:

- Education
- Effective enforcement

- Monitoring
- Cleaning operations

The Ministry of the Environmental Protection, in cooperation with the local authorities, will formulate a comprehensive policy strategy, including legislation, for the prevention of marine pollution from solid waste. The ministry will implement a national plan to reduce marine and coastal pollution from solid waste, including strategies to reduce the source of plastic use.

The Ministry of Environmental Protection will conduct regular environmental education activities on a broad scale to raise awareness of the issue among students, vacationers, bathers, divers, fishermen, ship owners and Navy personnel.

Maritime sites should be mapped showing waste that has been dumped or disposed from infrastructure bodies, the security forces and by others, where necessary. It is appropriate that the Ministry of the Environmental Protection, as the body responsible for marine waste disposal permits, coordinates the matter, subject to the authorities and means to regulate the issue.

The marine waste sites Epsilon and Alpha will be managed by the Ministry of Environmental Protection in all environmental aspects, including monitoring and activities within the framework of granting marine waste disposal permits.

The Committee for the Protection of the Coastal Environment and the Inter-ministerial Steering Committee will be updated on the activities and decisions of the committee regarding permits for marine waste disposal; so, they will have overall perspective regarding the activities that take place in the maritime space.

2.9. Abandoned Infrastructure

The Inter-ministerial Steering Committee for Maritime Space, in co-operation with the authorizing bodies, will work to treat abandoned marine infrastructure with pollution potential, in a way that avoids the risk of pollution of the marine environment. In the interim period, until the establishment of the Inter-ministerial Committee, the Ministry of the Environmental Protection will carry out the necessary coordination. A detailed reference is given in the Maritime Infrastructure Lines chapter.

2.10. Nutrients

The Ministry of the Environmental Protection, in coordination with research and conservation bodies, will set a good environmental ecosystem (GES) parameters definition in terms of nutrient levels and will set reference values and target values relevant to southeastern Mediterranean waters (currently the standards of other countries are applied in the open sea).

2.11. Regional Cooperation

Gaza Strip effluent is discharged into the sea upstream of the Israeli coast and is a source of pollution to the southern beaches. In many cases, solid waste that reaches the Israeli beaches also comes from coastal landfills in Lebanon. International bodies, in cooperation with the State of Israel, will look at ways to encourage appropriate treatment of the Gaza Strip's wastewater pollution and pollution prevention.



PLANNING
ADMINISTRATION



Maritime Policy

5TH SECTION | Comprehensive Spatial Maps for Maritime Space



Comprehensive Spatial Maps for Maritime Space | Maritime Space Maps

The fifth section in the policy document presents the aggregate spatial policy of all sectors operating in the maritime space and produces a complete spatial picture, thereby completing the policy guidelines defined in the first four volumes of the policy document.

The fifth section includes two sets of maps at different resolution levels:

- **A comprehensive spatial policy map** that presents a detailed compilation of all the activities, facilities and users of the maritime space, which constitute a spatial dimension at sea. This map is the general spatial expression of the thematic maps of the policy expressed in the other volumes, showing the main components of different areas, lines, boundaries and symbols.
- **Thematic maps** in 1: 250,000 km detailing the spatial aspects of various sectors and issues at sea. The level of detail in these is higher than that on the compilation map.

The maps in the fifth section do not have the binding status of a national outline plan. They express, complete, and explain the spatial aspects of the policy. Regarding the border lines with Egypt and the Gaza Strip, the lines are only schematic and have not been approved by a political or judicial authority. These maps mentioned above are not to be used for any other purpose other than internal use and may not be to any other party (including other government ministries) in whole or in part without prior written permission from the Survey of Israel office.³⁰

High resolution maps (PDF) are available for download on the Planning Administration website.

³⁰ The baseline from which all the maritime areas off the coast of Israel that appear on the maps are measured is approximate. The method by which the baseline will be calculated is in the stages of approval, formulation and legislation.



Map Name	Scale
A comprehensive spatial policy map, territorial water	1:250,000
A comprehensive spatial policy map, entire maritime space	1:350,000
Maritime space map	1:350,000
Exploration and production map - natural gas and oil	1:250,000
Marine transportation and trade map	1:250,000
Map of marine and coastal structures	1:250,000
Map of marine infrastructure lines	1:250,000
Nature conservation and ecosystem map	1:250,000
Fishery map	1:250,000
Aquaculture map	1:250,000
Map of antiquities, heritage and national parks	1:250,000
Map of restricted security zones - new situation	1:250,000
Map detailing agreed changes in the restricted security areas	1:250,000
Map of restricted security zones for future examination	1:250,000



figure 15: Comprehensive Spatial Map - Israel's Mediterranean Waters

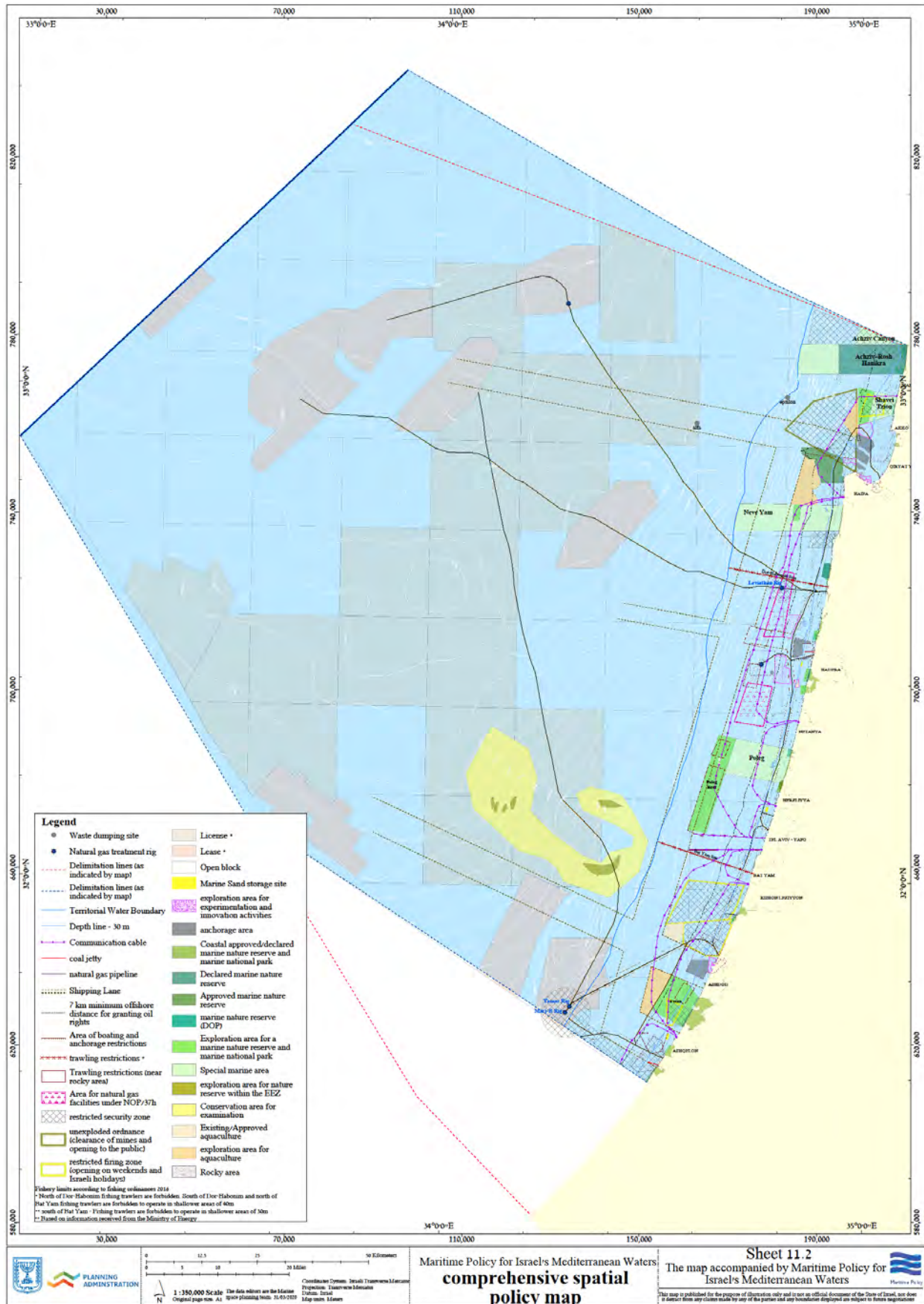
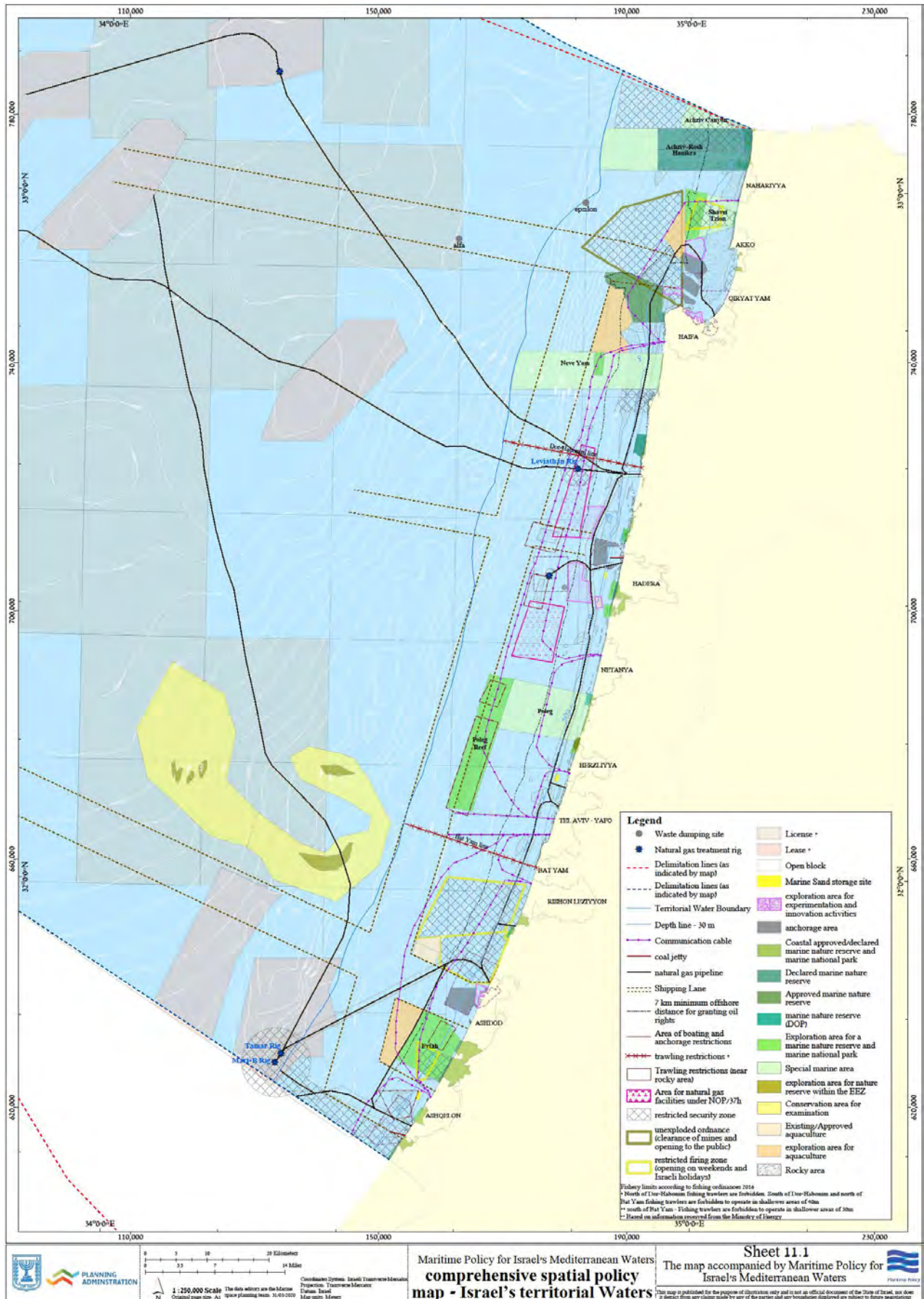
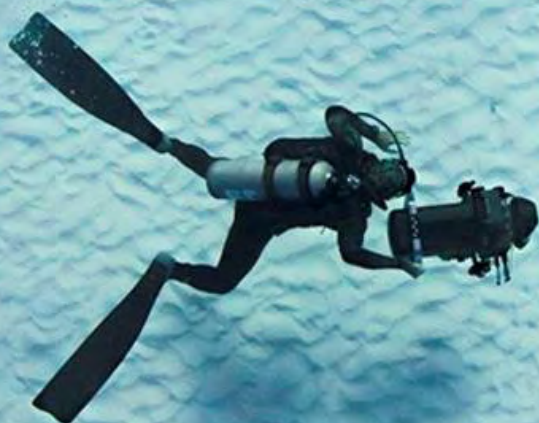


Figure 16: Comprehensive Spatial Map - Israel's territorial Waters





APPENDIX

APPENDIX 1 - RESTRICTED SECURITY ZONES

Appendix 1A - Details of the changes in the system of restricted security zones

This table is an integral part of the policy document guidelines, notwithstanding what is stated regarding the validity of the appendices in the document.

According to current "Order 100"		Change with agreement of Security Establishment		
Original zone number/name according to Order 100	Original purpose/designation according to Order 100	New zone number/name	Change	Summary
601A	Restricted firing zone pending a 7-day notice. There is a danger of unexploded ammunition in the area	601A	Opening on weekends and Israeli holidays	Public use, sports and education activities as well as sailing along the coast, will be allowed on weekends and Israeli holidays as long as the military does not use the area. Public use, sports and maritime education activities will be limited to activities that do not make contact with the seabed or shoreline to avoid hazard of mines. Entry into the area will be coordinated in advance with the security establishment. In addition, a multi-year plan for the removal of mines will be implemented by the Israeli National Mine Action Authority in coordination with the IDF in areas used by the public for fishing and diving, in parallel to plans for mine clearance on land.
Polynomial (polynom)	Permanently restricted security zone	Reduced Polynomial	Opening of zone	Correction of a technical error resulting from the practice of drawing a border 100 m from the



				breakwater and defining it as a restricted area (the area between the breakwaters measured as azimuth 090-270). The opening of a small section of the restricted area, without compromising security, in a manner that will allow for sports and bathing activities on the beach.
30	Permanently restricted security zone	30 Reduced	Adjusting the boundary of the marine area to the shoreline	The restricted marine area overlaps with land area; the boundary change is for accuracy and in adjustment to the shoreline
24	Permanently restricted security zone	24 Partial opening	Opening on weekends and Israeli holidays	Area 24 is a large area in the center of the country. In practice, merchant ships pass through the area on their way to the port of Ashdod. Opening on weekends and Israeli holidays in order to allow coastal sailing from Ashdod to the marinas of the center of the country and the north. Activities within a range of 1000 meters or more from the shoreline that do not make contact with the seabed or shoreline will be allowed, due to possible live mines. Entry into the area will be coordinated with the IDF.

82	Permanently restricted security zone	82 Partial opening	Opening on weekends and Israeli holidays	Area 82 is a large area and in the center of the country. In practice, merchant ships pass through the area on their way to the port of Ashdod. Opening on weekends and Israeli holidays in order to allow coastal sailing from Ashdod to the marinas of the center of the country and the north. Activities that do not make contact with the seabed or shoreline will be allowed, due to possible live mines. Entry into the area will be coordinated in advance with the IDF.
608	Permanently restricted security zone	608 Reduced	Opening of zone	Opening of the southern part of the zone in order to modify the restricted firing zone at the sea (608) to coincide with the firing zone (304) on land. The closure order will be revoked after the clearance of any unexploded ordnance by the Israeli National Mine Action Authority in coordination with the IDF and after a jurisdiction arrangement over the opened zone.
608	Permanently restricted security zone	608 Expanded	Permanently restricted security zone	Expansion to the north of the zone for the purpose of modifying the restricted firing zone in the sea (608) to coincide with the firing zone (304) on land.
608	Permanently restricted security zone	608 Partial opening	Opening on weekends and Israeli holidays	In accordance with the findings of the examination of characteristics of the use of the land firing zone (304), the western part of the marine firing zone will be open for sailing on weekends and holidays. Activities that do not make contact with the seabed or shoreline will be allowed, due

				to possible live mines. Entry into the area will be coordinated in advance with the IDF.
615	Mine hazard area, fishing, diving or any other activity involving contact with the seabed is prohibited	615 Mine clearance and discharged zone	clearance of mines is required and the opening of the zone	The zone will be removed from "Order 100" upon the completion of mine clearance by Israeli National Mine Action Authority in coordination with the IDF and after a jurisdiction arrangement over the opened zone.
602	Mine hazard area, fishing, diving or any other activity involving contact with the seabed is prohibited	602	clearance of mines is required and the opening of the zone	The zone will be removed from "Order 100" upon the completion of mine clearance by Israeli National Mine Action Authority in coordination with the IDF and after a jurisdiction arrangement over the opened zone. A restricted area of a range of 100 m from the Navy training base will be maintained.
601A	Restricted firing area zone pending a 7-day notice. There is a danger of unexploded ammunition in the area	601A	clearance of mines is required and the opening of the zone	The area will be open on weekends and holidays: activities that do not make contact with the seabed or shoreline will be allowed, due to possible live mines. Entry into the area will be coordinated in advance with the IDF. The zone will be removed from "Order 100" upon the completion of mine clearance by Israeli National Mine Action Authority in coordination with the IDF and after a jurisdiction arrangement over the opened zone.

Appendix 1B - Details of recommendations for future changes in restricted security zones

Considering the importance of opening additional areas to the public while ensuring security needs, the defense establishment will consider in the future, and subject to security needs, the implementation of the following changes in the restricted security zones:

- **Areas to be released** from restricted security zones in "Order 100" and to be open to the public without restrictions: 69, 30, 609, 610, 613.
- **Areas for partial opening** on weekends and Israeli holidays: C69, 30.
- **Areas with boundary changes or expansion** for purposes of increasing accuracy and correlation to the shoreline and restricted zones on land: 609.
- **Areas whose boundaries need to be changed for the purpose of alignment between coastal areas open to the public and restricted areas / firing zones at sea:** 609 opposite the onshore firing range (fire area 309).

1. Details of the spatial changes proposed for examination:

1.1. Northern Cluster

- The goal is to balance the needs of state security with the public's ability to enjoy the unique area and landscape of the Israeli islands coast of the Mediterranean. In this area, the popular public sport activities of scuba diving and kayaking are developing along one of the beautiful beaches with the possibility of reaching the partially submerged northern caves.
- In the event of any change in the security situation, the Navy will, as customary, be able to close an area temporarily in accordance with security needs.
- In Area 69B, release of the islands from the restricted zone must be examined by using clear identifying means for the public. The naval mooring will remain in the restricted zone and will clearly indicate to the public that it is forbidden to move north of it.
- In Area 69C, consideration should be given to allow future free activity of sports and maritime education in the adjacent strip along the coast until the Kibbutz Rosh Hanikra and the marine caves (Grottos). Currently, the public is able to use this attractive strip only through kibbutz Rosh Hanikra, which is unsuitable for managing a public resource.
- In Area 603, it is proposed to allow public use and sports and maritime education activities on weekends and Israeli holidays, since at these times the army does not use the land and marine firing zones.

1.2. Haifa - Atlit cluster

1.2.1. Atlit

The northern part of the restricted zone at sea does not overlap with the base's area on land - when citizens partake in water sports activities at the open public beach they are in fact

breaking the law as soon as the boat or surfboard is lowered into the water. It is necessary to reduce the northern part of the restricted zone at sea in a manner that is compatible with the conditions on land. In addition, it is possible, without compromising security, to cut down the entire northern part of the restricted marine zone - to the salt island line and west of it.

Area 30 is a large, permanently restricted firing zone in the center of the country. The implication of the permanent closure, including on weekends and holidays when the area is not in use, is that cruising and water sports events along the country's shores are required to make a large detour to the west. Due to the size of the area and its westward extension, it can take several hours to bypass. It seems that it is possible to keep part of the area permanently closed, but to allow passage through its western part on weekends and Israeli holidays which will allow sailing vessels and others to significantly reduce the bypass route. In the future, maintaining a range of one mile from the shoreline (on weekends and Israeli holidays) as a permanently restricted zone should be considered in order to ensure "non-approach" to the base

1.3. South Cluster

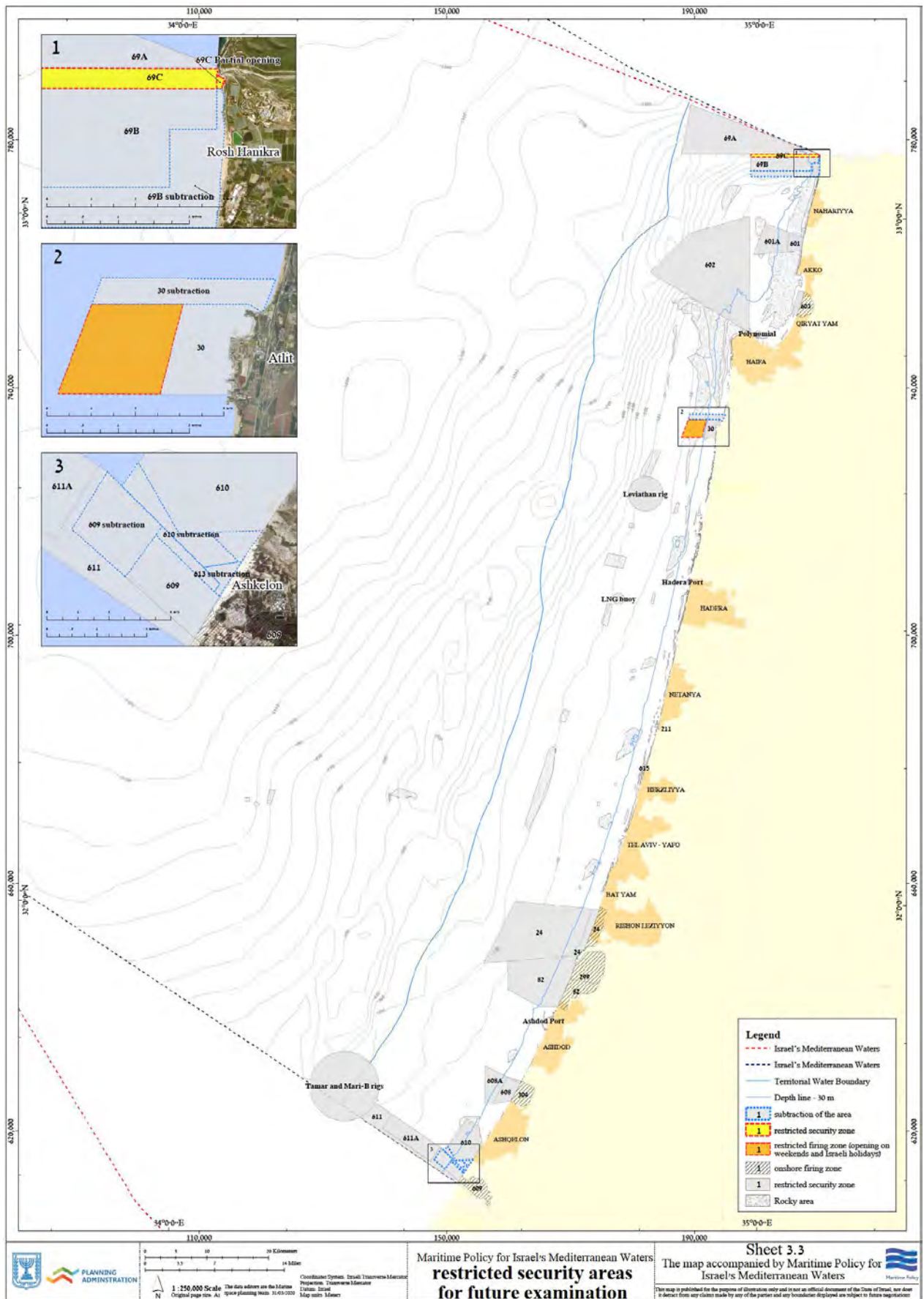
1.3.1. Ashkelon - Gaza

The purpose of the proposed changes for examination in the future is to open a maritime area to the public from Zikim Beach with a wide passage out to sea. Although there is no doubt about the sensitivity of the area and the threat of new development, the suitability of the security area for the needs of the Europe Asia Pipeline Company (EPPC) activities and the firing ranges must be examined.

- In the future, the reduction of restricted area 609 will be examined in accordance with the onshore firing range and local examination of activity on land.
- A future examination of the reduction of Area 613 is proposed, which originated in a political agreement for the evacuation of Dugit residents during the disengagement from Gaza.
- Area 610 (Europe Asia Pipeline Company port area) - its suitability for the port's operational needs should be examined in the future.



Figure 17: Changes in security zones for future examination





APPENDIX 2 - ENVIRONMENTAL CONVENTIONS OF WHICH ISRAEL IS A MEMBER

The table below presents the main conventions on the marine environment in a concise and focused manner. The detailed review of treaties is presented in Part A of the policy document, in the legal chapter, as is the subject of internal legislation.

Number	Convention	Status	Is there internal legislation
1	1976 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean	Ratified(1) ³¹	
Convention Protocol	1.1 1976 Protocol for the Prevention of Pollution in the Mediterranean Sea by Dumping from Ships and Aircraft	Ratified. It should be noted that the protocol has been amended, but the amendment has not yet entered into force. Amendment: 1995 Protocol for the Prevention and Elimination of Pollution in the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea	Yes
	1.2 2002 Protocol Concerning Cooperation in Preventing Pollution from Ships, and in Cases of Emergency, Combating Pollution of the Mediterranean Sea	Ratified. It should also be noted that Israel signed and ratified a protocol from 1976 (which is in force): 1976 Protocol Concerning Cooperation in	The operational tool in this field today is the National Contingency Plan for Preparedness and Response to Oil Pollution Incidents, which was adopted by a government

³¹ 1994 Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil



			combating pollution of the Mediterranean Sea by Oil and other Harmful Substances in Cases of Emergency.	decision in June 2008, yet to be legislated.
	1.3	2008 Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities	Ratified. Replaced an old protocol from 1980, which Israel signed in 1980 and ratified in 1991: 1980 Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources	Yes
	1.4	1982 Protocol concerning Mediterranean Specially Protected Areas	Ratified. There is an updated protocol, which Israel signed in 1995 but did not ratify: 1995 Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean	Yes
	1.5	2008 Protocol on Integrated Coastal Zone Management in the Mediterranean	Ratified.	Yes
2		1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora, as amended	Ratified.	Yes
3		1946 Convention for the Regulation of Whaling	Ratified.	Yes

4	Convention on Biological Diversity	Ratified. The Convention has two protocols to which Israel is not a party: * Cartagena Protocol Deals with engineered living organisms that may adversely affect biodiversity. * Nagoya Protocol	Yes
5	Convention on the Conservation of Migratory Species of Wild Animals	Ratified. To date, Israel has acceded to two agreements operating under the Convention, AEWA and EUROBATS, and its accession to other agreements are being examined, including an agreement for the conservation of marine mammals in the Mediterranean and the Black Sea.	Yes
6	1973/1978 International Convention for the Prevention of Pollution from Ships (MARPOL)	Ratified ³² (2)	
Convention Annexes	6.1 Annex I Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983)	Ratified.	Yes

³² Israel has not yet ratified Annex 4: Annex IV Prevention of Pollution by Sewage (entered into force 27 September 2003) and Annex 6: Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)

	6.2	Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force 2 October 1983)	Ratified.	Yes
	6.3	Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992)	Ratified.	Yes
	6.4	Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988)	Ratified.	Yes
7		1992 International Convention on Civil Liability for Oil Pollution Damage (CLC)	Ratified.	Yes
8		1992 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage	Ratified.	Yes
9		1990 International Convention on Oil Pollution Preparedness, Response and Cooperation (ORPC)	Ratified.	The implementation of the Convention is through the National Contingency Plan for Preparedness and Response to Oil Pollution Incidents, which is yet to be legislated. It is also presented in the Barcelona Convention through contact with The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) Malta and in the framework of a regional emergency plan drawn up with Egypt and Cyprus for the treatment and removal of major pollution incidents in the Eastern Mediterranean.



For clarity, the following is a general clarification of the term's "signature" and "confirmation":

Signature - This is usually a signature subject to ratification. An agreement is signed by the authorized representative on behalf of the state (in the State of Israel - the Minister of Foreign Affairs or a person authorized by the minister), and it signifies the 'Authentication' of the wording of the convention. The legal implication is that the State must refrain from acting contrary to the spirit of the Convention.

Ratification - is an act in which a state expresses its intention to be bound by the treaty at the international level. The international validity of the certificate is done by submitting certificates with the competent body (Depositary) or exchanging certificates between the member states in the case of a bilateral treaty. In the State of Israel, prior to the act of ratification at the international level, an internal procedure is conducted through a government decision.

According to the legal system used in the State of Israel, in addition to the act of ratifying a convention in the international arena, in order to restore rights or obligations in domestic law by virtue of a ratified convention, the provisions of the Convention must be secured in domestic law through appropriate regulation.³³

³³ It should be noted that conventions that carry rules that are part of customary international law are declarative and, according to the ruling, they are part of domestic law even without legal doctrine.

APPENDIX 3 - PARALLEL PROCEDURES

Prior to and in preparation for the policy document, a number of supplementary and tangential documents were prepared, some of whose recommendations were adopted in the policy document and some of whose findings served as a basis for formulating policy in the document. These documents include; the Strategic Environmental Survey for the Search and Production of Petroleum and Natural gas at Sea (Ministry of Energy), Policy Document for Marine Reserves (Nature and Parks Authority), Policy Document for Aquaculture (Ministry of Agriculture) and the Israel Marine Plan (Technion). It should also be noted that in parallel with the policy document, a bill on maritime areas was formulated to arrange the application of Israeli law in the various maritime zones.

1. Israel Marine Plan, led by Prof. Shamai Asif, Technion

The preparation of a Marine Plan for Israel began at the end of 2013, and was completed and presented to the public in November 2015. The work is an initiative of the Center for Urban and Regional Studies at the Faculty of Architecture and Urban Planning at Haifa. The plan offers a comprehensive policy for protecting Israel's maritime space and balancing needs the different stakeholders involved. This is achieved though offering a vision, goals and policy measures in various areas, as well as proposing policy principles for managing the maritime space. The Israel Marine Plan is intended to integrate, accompany, and support parallel moves of planning, legislation, research and study of the sea in the State of Israel in the present and in the future.

The vision provides the comprehensive framework according to which the principles of the plan and its goals were formulated: "The marine area will be an integral part of Israeli space and an essential component of its future economic well-being, environmental resilience and social and cultural development, for the benefit of its residents, guests and future generations. This will be achieved through the implementation of integrative governance that is ecologically balanced and participatory, the sustainable use of marine resources, the enhancement of the marine landscape and heritage, the promotion of marine research and knowledge, and through the realization of international responsibilities and cooperation."

To achieve the vision, 12 goals were set:

- Improve governance of the maritime space
- Advance scientific knowledge and develop accessible information about the maritime space
- Protect, conserve and rehabilitate the marine environment
- Develop energy resources in the maritime space in a wise and cautious manner
- Develop shipping, ports and sailing in a cautious and sustainable manner
- Develop sustainable interfaces of fishing and aquaculture
- Use the maritime space as an alternative for land uses in a cautious and sustainable manner

- Incorporate security considerations in the planning and balanced management of the maritime space
- Prepare for the impact of climate change on the marine and coastal spaces
- Establish the status of the sea as a public entity, and develop sustainable uses for the public benefit
- Discover, conserve and enhance the heritage and cultural treasures in the maritime space
- Develop the role of the sea as a bridge and an opportunity for international cooperation

The Israel Maritime Space Policy Document identifies goals and issues that require intervention similar to the Israel Marine Plan, including a detailed and high-resolution geographic database. It also offers operational policies, detailed guidelines, and overall spatial policy for each sector.

2. Environmental Strategic Survey for the exploration and production of oil and natural gas at sea, led by the Ministry of Energy

This work was prepared at the request of the Director of Natural Resources at the Ministry of Energy as part of the policy of granting rights to natural gas and oil exploration at sea. The Strategic Survey is one of the pillars for examining this policy and covers the entire maritime space of the State of Israel in order to serve as a tool for formulating a policy for the sustainable development of resources. In addition, the Strategic Survey is intended to provide a database that will allow its findings to be considered in the decision-making process for resource development, taking into account all environmental, economic and social considerations.

The survey was conducted during 2015-2016 by a broad planning team and accompanied by a broad steering committee, which includes government ministries, public bodies, environmental organizations, industry representatives and stakeholders relevant to the work topic.

The survey includes habitat mapping and a proposal for indices of ecological damage in the context of engineering operations of oil exploration and production in Israel's maritime space. A review of the existing environmental situation was conducted by the institute of Israel Oceanographic and Limnological Research.

In the last phase of the work, the recommendations formulated on the basis of the insights and information gaps identified in previous stages in the various fields were compiled; timing and location of the granting of rights, ecology, risks, economics and technologies for exploration and production. In addition, recommendations were formulated for monitoring the implementation of these recommendations, monitoring the marine environment, drawing on lessons learned and recommendations for preparing the next Strategic Survey.

Israel's Maritime Policy Document relies on habitat and habitat sensitivity mapping conducted in the Environmental Strategic Survey (although sensitivity mapping referred to gas and oil activity). The planning procedures were carried out in coordination between the working teams, which included the participation of the Planning Authority in the steering committee of the Strategic Survey and the participation of the Ministry of Energy and Israel Oceanographic and Limnological Research in the steering committee of the policy document. The policy document implements the Strategic Survey recommendations in the field of ecology, hazards and technology, in order to enable the activity of exploration and production of natural gas and oil at sea, while reducing the environmental impacts of this activity, maintaining proper functioning and preventing, as far as possible, infringement upon the natural environment. It is important to note, that the Maritime Policy Document examines the full range of development and activity impacts in the maritime space in a broad and comprehensive perspective, while the Strategic Survey focuses on the effects of the natural gas and oil production activities at sea.

3. The Marine Areas Bill (2017)

The bill is intended to define the marine areas near the shores of the State of Israel that include coastal waters, inland waters, the adjacent area and the exclusive economic zone, as well as secure the rights and powers of the State of Israel in these areas, taking into account international law. The law has 5 objectives:

- The realization of the sovereignty of the State of Israel in coastal waters and territorial waters;
- Increasing the ability to prevent and detect offenses and violations of law within the marine territory of the State of Israel and imposing its own punitive and enforcement measures;
- Exercising the sovereign rights of the State of Israel in the exclusive economic zone and on the continental shelf;
- Ensuring the development and utilization of the exclusive economic zone and the continental shelf, including the natural resources contained therein;
- Increased protection of the marine and coastal environment and protected natural values.

The mechanism outlined by the bill with respect to the exclusive economic zone consists essentially of a quasi-planning arrangement. In accordance with the bill, the government will approve a long-term policy document that will include, among other things, these principles; objectives and priorities for the activities and uses in the exclusive economic zone; their scope and interrelationships; means and ways to meet the aforementioned principles, objectives and priorities; including supervision and monitoring of their implementation; as well as guidelines for government ministers, public bodies and public officials with relation to their authority in the exclusive economic zone.

4. Maritime Strategic Evaluation for Israel 2016

This work was published in 2017 and prepared by the Maritime Policy & Strategy Research Center, Haifa. The aim of the work is to publish an annual maritime strategic assessment focusing on the Eastern Mediterranean Sea and the Red Sea, but also including examining global developments and trends in the maritime field that may have an impact on the Eastern Mediterranean in general, and Israel in particular. In the absence of an approved maritime policy and strategy, the Maritime Policy & Strategy Research Center has determined that it will formulate a number of assumptions in the field of Israel national goals and policies, and these will form the basis for writing an annual assessment report on this issue. Thus, in matters where the Center has identified a lack of policy, or one that is out of date, the report includes recommendations on issues that require policy formulation or updating.

Israel's Maritime Space Policy Document addresses some of the areas identified by the report's authors as lacking national goals and policies, chief among them, an integrated and comprehensive, Marine Spatial Planning. In addition, the policy document defines a response in a number of specific areas, including the development and utilization of energy resources at sea while conserving the environment, developing a professional human capacity to deal with Israel's new maritime challenges, the interface of defense establishment and maritime space, and advancing and regulating maritime law.

5. The establishment of an Israel Marine Data Center, led by the Planning Administration, in collaboration with the Ministry of Environmental Protection and the Ministry of Energy

The overarching goal of the Israel Marine Data Center is to centralize and organize the information regarding the maritime space in all existing areas of knowledge and make it accessible to all parties interested in the maritime space. Other objectives of the center are to create a common, accessible, up-to-date and multi-themed platform for data on the maritime space; to establish mechanisms for transferring data between the various parties; to create tools for the partners, professionals, entrepreneurs and the general public; and to create transparency and availability of data for various entities operating in the marine environment.

The policy document for Israel's maritime space proposes to establish a national database for the Mediterranean Sea, based, among other things, on the established database as it is developed and expanded. It aims to promote and streamline the state's use of marine resources, reduce conflicts between the various users, and promote understanding and marine research. The mapping work and the geographic data layers have been integrated into the existing database. In addition, the policy document defines the actions required to collect data, access it, and manage and maintain it on a continuous basis, while complying with international standards.

6. A Master Plan for Aquaculture (2015)

The plan was prepared by the Ministry of Agriculture for a period of 20 years and offers the allocation of approximately 200 km² of agricultural areas in the sea. The polygons identified in this framework for aquaculture uses, represent the demand for a very large area given the current volume of use and are based on a forecast of a dramatic increase in the volume of future production in Israel. Of the proposed 200 km² areas identified by the Ministry of Agriculture, 30 km² were defined as having a high priority for development. For reasons of operation, economy, environment, security and national safety, the proposed location for the farm is at a depth of 30 to 150 m and at a distance of up to 20 km from a service port. For this reason, site development in the north and south of the country is a higher priority than in the center, which has insufficient response to docking and logistics needs.

Israel's Maritime Space Policy Document proposes a spatial policy for the aquaculture industry based on the gradual development and allocation of land in accordance with the pace of the industry's development. These include exploration areas for the establishment of open-sea farms and the possibility of developing the logistical infrastructure required for the development of the industry. Determining the exploration areas for aquaculture in the program relied on considerations of environmental sensitivity and mitigation of conflicts with other activities at sea and with marine infrastructure. Further allocation of exploration areas for aquaculture to those proposed in the Maritime Space Policy Document, will be examined in the framework of updating the policy for Israel's maritime space, with a comprehensive view, based on the industry's development, environmental, economic, and technological considerations, among other things.

7. Marine Nature Reserves for the Mediterranean Sea, marine nature reserves as a tool for environmental protection and diversity in the Mediterranean Sea (2012)

The policy document prepared by the Nature and Parks Authority to protect marine ecosystems and the diversity of biological species in the marine environment. The policy includes a plan to declare marine nature reserves in the spirit of the Barcelona Convention Protocol for the Protection of the Mediterranean Sea, for the conservation of protected areas specifically and the biodiversity of the Mediterranean Sea. According to the Barcelona Convention, the role of marine reserves is to protect areas that include representative types of coastal and marine ecosystems; natural environments that are at risk of disappearing or whose area is naturally small; natural environments essential for the survival, reproduction and rehabilitation of endangered species, and of endangered or endemic species of flora and fauna - sites of special importance because of scientific, aesthetic, cultural or educational interest in them. The main guiding principles in the design of marine reserves lead to the declaration of large reserves that enable the protection of an entire ecosystem as well as large marine animals needing wide habitats. Additional guiding considerations include

inter-reserve connectivity and protection of relatively larger parts of rare habitats as compared to common habitats. In total, the policy proposes the declaration and operation of marine nature reserves at 20% of total territorial water of Israel in the Mediterranean Sea. Since the publication of the document, plans have been approved for the Rosh Hanikra-Akhziv Marine Reserve (the reserve was even officially declared) and the Rosh HaCarmel Sea Nature Reserve.

Israel's Maritime Space Policy Document proposes a comprehensive policy of protected marine areas at various levels of protection, along with a long list of policies for marine ecosystem and nature conservation. The document designates exploration areas for detailed examination (as part of statutory planning procedures) for nature conservation, during which plans for marine nature reserves will be submitted. The spatial policy for nature conservation in the maritime space, proposed in the policy document, includes a hierarchy of protected areas; from exploration areas for nature reserves, protected hard substrate areas, unique marine areas, estuaries and marine national parks, to restrictions on uses such as fishing, exploration and production of natural gas and oil. Along with the spatial policy, the document also includes a policy to reduce damage to the environment during marine works. Thus, for the first time, the policy document proposes a comprehensive policy for nature conservation at sea, which combines policy tools with a comprehensive array of various protected areas, with different levels of protection, and at a large scale.

