Call for Research Proposals: Creating Biological Baselines and Monitoring Protocols for Marine Reserves in the Israeli Mediterranean Sea.

Background

Marine Protected Areas (MPAs) have been shown to be an effective tool for the protection of marine ecosystems which are globally deteriorating. Effective management is a critical component in the successes of these MPA's. In the Israeli Mediterranean there are currently seven small marine reserves, mostly limited to near shore areas. The Israel Nature and Parks Authority (INPA) aims to establish a network of large marine reserves in at least 20% of the Israeli Mediterranean. Scientific knowledge of the fauna and flora within MPAs is essential as baseline data against which to gauge future changes. Moreover, long term scientific monitoring is essential for the assessment of MPA effectiveness and the design of appropriate management measures. Specifically, temporal changes in MPA ecology may be indicative of threats such as fishing, pollution, invasive species and climate change. Monitoring schemes should be able to detect these potential threats. However, scientific gaps still remain in our understanding of the fauna and flora of each marine reserve.

Goal

We aim at an intensive sampling program that will cover multiple taxa and will be used to produce high quality baseline data, that can be extended to future monitoring protocols for assessing the biological state of present and future MPAs.

Details

We look for multi-institutional research groups that will include a wide range of disciplines. The proposal should evaluate the relevant threats within each habitat and location and propose a sampling design that would be able to best detect changes in the biological state of MPAs. **The sampling should focus on select taxa able to indicate exposure to specified threat**. Such threats might include drilling and mining; pipes and underwater infrastructure; fishing; marine aquaculture; pollution (chemical; thermal ect.), invasive species, and climate change.

Each proposal should be submitted by a single PI that will be responsible for the group coordination, overviewing the sampling, data management and scientific reports.

Sampling locations

Focus should be given to the following locations: **Evtach; Hof Hasharon; Atlit; Rosh Hanikra**, and should aim to cover major habitats within each. However, **excluded** by this call are habitats and taxa already covered by various other monitoring programs (e.g., national monitoring undertaken by the IOLR and the BIOBLITZ under the Israel Nature and Parks Authority).

A short description and map of existing and proposed MPAs is attached.

Grant Structure and Duration

The grant duration will be up to 2 years. **Winning proposals will be granted up to a total of 1,080,000 NIS, with an extension of 600,000 NIS (a total of 1,680,000**) expected but not secured. Thus, proposed budgets should include both budget alternatives. Extension will depend on a required progress report and results.

Review Process

An international scientific steering committee will be appointed by Yad Hanadiv Fund in partnership with the Israel nature and Parks Authority (INPA). Its task will be to prioritize and oversee the review processes, monitor the progress of the selected proposals and guide the implementation of the results within local marine reserves. The evaluation of the proposals may be carried out, *inter alia*, by international experts invited by the scientific steering committee.

Evaluation criteria:

1. Clear demonstration of sampling rational, including:
    a. Clear estimate of threats (current and future) for each habitat and location
    b. Clear demonstration of the relevance of the taxa sampled to these threats
    c. Sampling duration, intensity, and temporal coverage (e.g. seasonal, diel)
    d. Range of taxa sampled (preference will be given to proposals that cover taxa from multiple trophic and functional groups)
    e. Ability to extend the sampling into long-term monitoring
2. Involvement of multiple institutions
3. Inclusion of the requested marine reserves and habitats.
4. A clear data management plan
5. The scientific output relative to the budget. Thus, proposals that demonstrate shared resources among PIs (e.g., boat time) will have an advantage. Matching, if exist, should be stated.

In the case that none of the proposals fit the call criteria, no proposal will be funded.

Specific guidelines:

Cover page should include:

- Title
- Author names and affiliations
- Contact details

Abstract:

Up to 500 words summarizing the research proposal.

Up to ten-page description of the proposed research:

1. **Short Introduction providing rationale for proposal and its specific objectives and hypotheses**
2. **Rationale for the sampling design**, with specific reference to the way sampling may be used to detect and respond to specific threats and the advantages of targeting the specific taxa. We will not fund proposals that aim to sample multiple taxonomic groups without sufficient justification.

3. **Detailed sampling methodology**. We expect clear discussion of the specific sections within the sampling theme that can be extended into a long term monitoring program and the sampling that will serve to produce a one-time biological inventory of specific MPAs. In addition, clear differences and synergy between this sampling and other monitoring projects currently taking place with the Israeli Mediterranean coast should be highlighted. Finally, a distinction should be made between sampling that will take place under both budget alternatives and sampling that will only be feasible if the full (1,680,000NIS) budget is available (see details under "Budget").
4. **Description of the research team** and their ability to execute the proposed research.
5. **Specific deliverables**, with direct relation to the objectives described, along with clear millstones to assess success.
6. **Data management plan**.
7. **Timeline**.
8. **Detailed budget** (including 10% overhead). When available, matching options must be indicated. Justification should be included for major budget items. Proposal should include two budget alternatives (see details under "Budget").
9. **Detailed structure of the planned report, including expected charts, and expected level of taxonomic identification.**

Additional material:

1. Reference list
2. Up to 4 pages of figures and tables

Budget:

- Up to 1,080,000 NIS, for up to 2 years.
- An extension of 600,000 NIS (a total of 1,680,000) is expected but not secured. Thus, proposed budgets should include both budget alternatives.

Proposals should be written in a 11-12 pt font; 1.5-line spacing; normal margins (2.54cm). Footnotes should be avoided.

Timetable

Proposals submission deadline: **30 August 2018, 08:00 Israel time**

Other Conditions

The applicants must agree to publicly share their proposals and waive any claims to confidentiality of the information contained therein and allow access to gathered data. All data should be deposited in a public domain.

The principle investigator of the funded proposals will be required to present the progress, findings and results of the research to the scientific steering committee at the end of each year in a joint meeting. An extended final report must be submitted at the end of the grant term.

The committee has the authority to determine whether research progress is satisfactory, to request a new work plan and timetable or to choose not to renew the funding between years.

Contact for Submission

Proposals should be sent by e-mail to the following address: **science4mpa@isees.org.il**

The proposal should be attached as a single PDF file.

List and short description of the relevant Marine reserves and habitats:

Evtach – The area stretching across from the cities Ashdod (in the north) and Ashkelon (in the south), west of the shoreline. This area is dominated by soft substrate habitats: sand (down to ca. ~ 35 m bottom depth) and silt and clay (deeper). The proposed reserve includes also a unique habitat of kurkar outcrop on its northern border at 30 meters depth (Nizanim 30m). The soft substrate habitats are continuous (from shallow water down to the deep sea) and their boundaries are fuzzy (due to gradual change in sediment composition and characteristics). Yet, a division was carried out as part of the SEA[1] by IOLR (see SEA, 2016 chapter C) and several habitats were specified and 4 of them are present at Evtach (see figure X and Table 1).

Table 1. Habitats according to SAS

# Habitat	Name
04	Shelf 4 100-200
03	Shelf 3 60-100 m
06	Shelf 2S
08	Shelf 1S
25	Nitzanim 30 m

Hof Hasharon- The area is characterized by a sandy shoreline with a fragmented belt of beach rock stretching at the shoreline (from Apollonia to Poleg). The area western of the shoreline, down to 30 m bottom depth, is dominated by soft substrate with the presence of sporadic kurkar outcrops protruding from the soft substrate. Further west, soft substrate is present, divided into 2 habitats (parallel to the shoreline, according to the SEA). At 100 meters bottom depth a Kurkar outcrop (2 km^2) forms a complex rocky habitat, dominated by sponges (“mesophotic sponge ground”, described by Idan et. al., 2017). Further west the polygon includes soft substrate habitat between 100-200 meters depth and part of the continental slope.

[1] Strategic Environmental Assesment

# Habitat	Name
46	Beach rock
30	Poleg 30 m
08	Shelf 1S
14	Herzliya 100 m
03	Shelf 3 60-100 m
04	Shelf 4 100-200
06	Shelf 2S
02	Slope

Atlit-Western of the shoreline and down to ~35 meters depth, there is a mixture of soft substrate and rocky habitats: around 3-4 m depth, patches of Kurkar rocks are present across from kibutz Hahotrim and Kfar Galim. Further west, the soft substrate is interrupted by the presence of relatively wide rocky reef at ~20 meters depth comprised of two habitats (#58 and #45). Further west, narrow stretch of soft substrate borders additional rocky reef at 30 meters (#35) which traverses the polygon at both north and south ends. Further west, three stretches of soft substrates habitats occur, while at 100 meters depth, two kurkar outcrops are present: the northern one, across from Hahotrim and the southern one, across from Atlit are dominated by sponges (“mesophotic sponge ground”). Further west, the continental shelf (soft substrate) stretches until it reaches the continental slope (“Dor Disturbance").

# Habitat	**Name**
45	HaTishbi terrace
58	Carmel Reef
35	Hof Carmel 30 m
06	Shelf 2S
08	Shelf 1S
03	Shelf 3 60-100 m
04	Shelf 4 100-200
20	Hahotrim 100 m
47	Atlit 100 m
02	Slope

Rosh Hanikra- The area includes a variety of unique habitats situated west of the border of the existing coastal nature reserve (40 meters and deeper). On the southern part of the polygon the substrate is rocky in nature and named "Akhziv 40 meters". Further west the substrate is soft and represents the northern end of the continental shelf of Israel (60-100 meters bottom depth). The narrow continental shelf area is disrupted by the presence of the underwater canyon of Akhziv (#22 the only underwater canyon within the territorial waters of Israel 40-850 meters depth). On the south west corner of the polygon another rocky habitat is present and named "Akhziv 100m". North of the rocky reef the narrow continental shelf is characterized by the presence of soft sediment and it stretches until it reaches the continental slope.

# Habitat	Name
22	Akhziv Canyon
02	Slope
03	Shelf 3 60-100 m
04	Shelf 4 100-200
07	Shelf 2N
38	Akhziv 40 m
61	Akhziv 100 m

References:

Idan, T. et. al., 2017. Shedding light on an East-Mediterranean mesophotic sponge ground community and the regional sponge fauna. Mediterranean Marine Science, 84-106. DOI: http://dx.doi.org/10.12681/mms.13853

Ministry of National Infrastructure, Energy and Water resources, 2016. Offshore oil and Gas exploration and production strategic environmental Assessment, SEA.

[Call for Proposals- MPAs sampling, deadline 30.8.2019]