

Humanity's best hope to save a coral reef

Gulf of Aqaba/Northern Red Sea

An application for

UNESCO Natural World Heritage Site

Coral reefs, host to millions of marine species, are under stress and dying from the effects of global climate change, primarily rising water temperature caused by an increased atmospheric CO₂-level, and local stress such as pollution, overfishing, and physical destruction. On the current trajectory of climate warming, only about 10 % of coral reefs are expected to survive past 2050.

Beginning in 2013 a series of studies performed in the [Fine Laboratory](#) at the Interuniversity Institute for Marine Sciences in Eilat Israel, together with regional and international collaborators, members of the [Transnational Red Sea Center](#), discovered that corals in the Gulf of Aqaba (Red Sea) are extremely resistant to rising water temperature, compared with corals anywhere else in the world. *This major coral reef ecosystem has the best chances of survival until the end of this century and beyond.*

This creates a unique opportunity and a real hope for the survival of at least one major coral reef ecosystem, which might serve as a source of corals for other reef environments in the future. However, this hope rests on the necessity and ability to protect the Red Sea reefs from future sources of local environmental stress and pollution.

Reefs recognize no political borders but political unrest in our region often impede regional-scale collaboration and conservation efforts, putting the livelihood and future of millions of people in the Red Sea at risk.

Creating a **UNESCO Natural World Heritage** site in the entire Gulf of Aqaba (Jordan, Israel, Egypt and Saudi-Arabia) has the potential to stimulate the required regional-scale collaboration between scientists, policymakers, and a broad range of stakeholders, and ensure sustainable development of coastal areas. International involvement and coordination are critical to the success of such an initiative in our politically volatile/unstable region.

In fact, since the long road to achieving the lucrative World Heritage status demands communication and coordination between Israel, Jordan, Egypt and Saudi Arabia, we are presented with an opportunity not only for **critical environmental protection for generations to come**, but for **unprecedented regional collaboration**, overarching painful, age-old conflicts, and possibly opening the door to their future unravelling.

In Feb 2022, a meeting held in Paris with UNESCO's Director General, Audrey Azulay, commenced a course of action to bring together scientists, diplomats, and stakeholders in the Gulf of Aqaba countries to jointly prepare an application for a UNESCO World Heritage Site.

The fateful meeting between Prof. Maoz Fine and internationally acclaimed artist and activist [Noa](#) (Achinoam Nini), brought forth not only the idea of commencing the long journey of attaining UNESCO World Heritage status for GoA, but strengthening the initiative by creating a **unique artistic project**, that will open the hearts and minds of all and create public awareness, resonance and enthusiasm in regard to the stunning, endangered coral reefs we seek to preserve.

The artistic project, entitled "I SEA YOU", is planned to be an audiovisual fantasy, in collaboration with award winning visual artists, with the aim of inspiring the public to action by touching the heart, thus enhancing and supporting the challenging effort of attaining UNESCO Natural World Heritage status for the GoA.

Open Science in a geopolitically challenging region

To monitor the health of the precious reefs and the UNESCO world heritage site, we developed a coral monitoring system network that collects valuable real-time data of several environmental parameters and coral physiological performance. This open-access database will enable researchers from the region and around the world to collaborate and to advance the understanding of effects of environment on coral function and wellbeing. In fact, this system is the World's first real-time, open-science, continuous coral monitoring.

The first Coral Monitoring Station (CMS I) was successfully deployed in Eilat in August 2021 and is already providing valuable data <https://iui-eilat.ac.il/Info/PamDashboard.aspx>.

The second station (CMS II) will be deployed in Aqaba Jordan and a third one will be deployed further south in Sudan. The network of monitoring stations will generate a unique data set and build bridges among people in the region.

An artificial intelligence- based analysis of the data generated by the coral monitoring network and a supporting application will provide scientists, managers and the public with realtime alerts, when coral health show signs of stress.

Prof. Fine and Noa now seek support and sponsorship for the scientific and artistic elements of their inspiring project.

[The team](#)

Achinoam Nini (Noa) is a singer, songwriter, poet, composer, speaker and activist. In addition to her prolific musical activity, Noa is considered Israel's most prominent cultural advocate of dialogue and co-existence, her "Voice of Peace". Noa's deep love for nature and the ocean made her seek peace not only among people but also peace with the environment. She is now on a quest to save the last coral reef standing in the Red Sea.



Maoz Fine is a Professor of Marine Ecology at the Hebrew University of Jerusalem and the Interuniversity Institute (IUI) of Marine Science in Eilat (Red Sea), Israel. Prof. Fine's research is focused on coral reef biology and ecology and, more specifically, coral reef ecosystems under environmental change. His studies on coral reefs of the Red Sea led to discovery of a coral reef refuge in the Gulf of Aqaba. Fine is also co-founder of the Transnational Red Sea Center and is involved in cross-border science in the region.



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