MEET THE Eilat Coral Reef

ASSAF ZEBULONI

HEBREW NAME: שונית האלמוגים באילת *SHONIT HA-ALMOGIM B'EILAT*

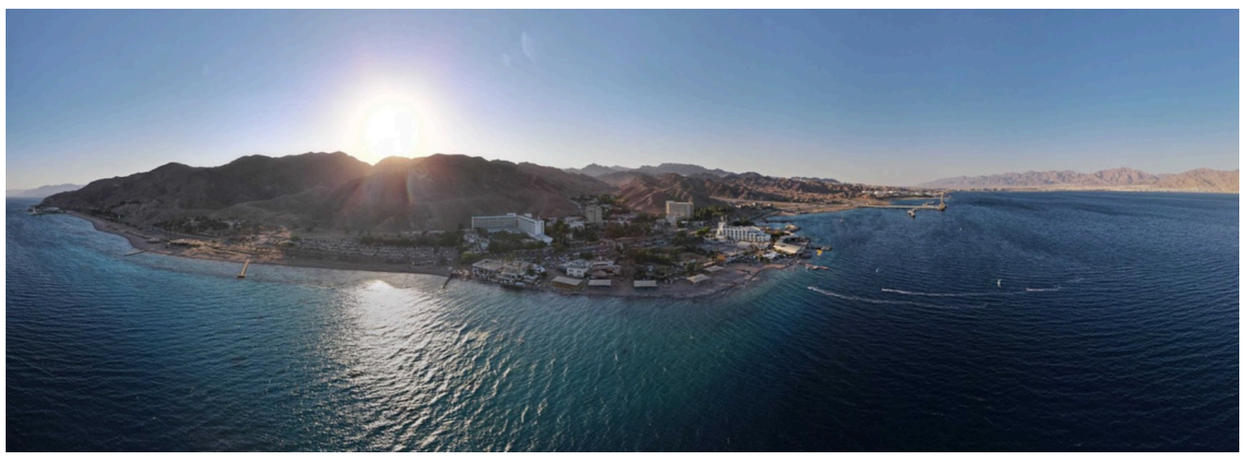
שונית *(shonit)* means reef, האלמוגים *(HaAlmogim)* means the corals, and באילת *(b'Eilat)* means in Eilat.

THE SECRET SAUCE OF THE RED SEA

The Gulf of Eilat lies at the northern tip of the Red Sea and shares its salty, warm, clear waters, making it a perfect place for coral reefs to grow

HOW IT HELPS BOTH NATURE AND PEOPLE

The reef protects the coast by blocking waves, keeps the water clean by filtering it, and is a home for many sea creatures. It also supports the people in Eilat by providing many tourism-related jobs.



GULF OF EILAT, ORAL REVIVO

A DESERT REEF?

The coral reef in Eilat is one of the northernmost on Earth —and it thrives in the desert thanks to some special conditions!

BEATING THE HEAT

After the last ice age, melting glaciers sent the ocean back into the Red Sea, bringing coral babies through a very warm, narrow passage, so only the toughest, most heat-tolerant corals made it to Eilat. That's why Eilat's corals are super strong and can better survive global warming compared to other reefs.

STATUS: IN SERIOUS DANGER

Coral reefs have declined by more than 50% in the last few decades, and one-third of reef-building corals are at risk of extinction.

Eilat Coral Reef

WHAT *IS* A CORAL REEF?

Corals may look like rocks or plants, but they're actually animals! A coral reef is an underwater biological structure made up of skeleton-building organisms called polyps. Surrounding the reef is a rich ecological system of animals.

EACH POLYP CAN PERFORM EVERY LIFE FUNCTION

EATING

The polyp is a predatory animal that eats plankton (drifting organisms carried by currents). Since the coral doesn't move, polyps extend their hunting tentacles at night to sting and paralyze the plankton, which are then brought to the mouth. Even though they can catch food, about 90% of their energy actually comes from tiny algae called zooxanthellae that live inside them and share sugars made from photosynthesis.

REPRODUCTION

A few nights each year, corals release reproductive cells into the water. Male and female cells meet and form an embryo. The embryo might get eaten, land in the sand and die, or attach to a hard surface and become a polyp. The polyp then starts asexual reproduction and grows into a colony. Corals grow about 1 cm per year.

BREATHING

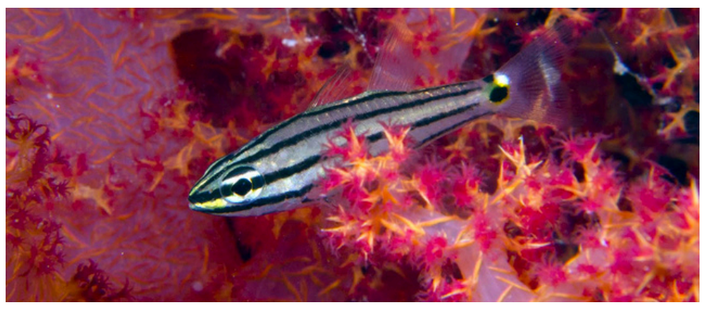
Like all animals, the polyp breathes oxygen. Microscopic algae live in its tissue and perform photosynthesis, creating oxygen and sugars. The algae get a place to live, and the coral gets energy.

EXCRETION

Polyps excrete carbon dioxide. This can turn into acid in the water and damage the coral skeleton, but the algae use the CO_2, helping to protect the coral.

CORAL CITY

Imagine the coral as a giant building, and each tiny polyp is like an apartment in that building. When all the apartments (polyps) come together, they form a whole city, and this is what makes up the entire coral reef.



FISH IN THE CORAL REEF, DR. SHAI ORON

WHO LIVES ON THE REEF?

When corals die, their skeletons remain, creating the reef structure. Around it, a whole ecosystem grows.

70% of animals here are also found in the Indian Ocean. 30% are unique to the Gulf of Eilat!

The coral reef in the Gulf of Eilat is home to some of the most diverse tropical fish in the world (including clownfish like Nemo and blue tangs like Dory!) You'll also find octopuses, squid, jellyfish, crabs, lobsters, sea stars, sea urchins, sea cucumbers, sea slugs, and rare species like sea turtles and whale sharks.

Eilat Coral Reef

WHAT'S KILLING ISRAEL'S CORAL?

GLOBAL WARMING

Coral reefs are very sensitive to temperature. When the ocean gets too warm, corals become stressed and expel the tiny algae (zooxanthellae) that live in their tissues. These algae give corals food and color, so without them, corals turn white—a process called coral bleaching. Global warming causes more frequent heatwaves, giving coral reefs less time to recover. That's why 50% of reefs are already gone, and scientists say up to 90% could disappear in the next 20 years.

CLOWNFISH IN THE CORAL REEF, SPNI

LOCAL ENVIRONMENTAL CHALLENGES

Israel has only 12 km of Gulf coastline, so human activity has a big impact. The major threats they pose are:

- Light Pollution: Artificial light confuses coral spawning and affects marine life behavior.
- Plastic and Microplastic Pollution: Plastic harms animals and blocks sunlight that corals need.
- Unregulated Fishing: Damages reef structures and removes key species from the ecosystem.
- Fuel Transport and Biological Contamination: Oil spills and invasive species threaten coral health.
- Poor Urban Planning: Construction and runoff increase pollution and sediment in the water.

GOOD NEWS

But the corals in the Gulf of Eilat have shown incredible strength. Even during the extreme heat of summer 2024, while some shallow corals bleached, most recovered —a rare event worldwide.

SO, HOW DO WE BRING CORAL REEFS BACK TO ISRAEL'S COAST?

Eilat Coral Reef

HOW SPNI IS HELPING BRING THEM BACK

THE BLUE HALF

The Blue Half is SPNI's national program to protect Israel's marine environment. Did you know that Israel's sea territory is as large as its land? Since 2012, SPNI's Blue Half program has been working to protect marine ecosystems across Israel's coastal waters. From the shores of Eilat to the depths of the Mediterranean, this project is helping make sure Israel's "blue half" gets the same care and attention as the land.

THE GULF OF HOPE PROJECT

This is a project within SPNI's Blue Half, focused on protecting the Gulf of Eilat. This project works to reduce environmental damage, push for stronger laws to protect the sea, make scientific research easier for the public to understand, and influence policies that support marine and coral reef conservation.

EILAT CORAL REEF, DR. SHAI ORON

RESEARCH AND PROTECTION EFFORTS

SPNI's Blue Half conducts **deep-sea surveys** to explore and protect underwater canyons and works to conserve coral reefs, seagrass beds, shorelines, and deep-sea areas as **one connected ecosystem**. In partnership with the Eilat Municipality and Nature Israel, the program also **reduces nighttime beach lighting** to minimize harm to corals and marine wildlife.

SEAWATCH APP, SPNI

PUBLIC ENGAGEMENT

To connect people with marine conservation, SPNI created a **Virtual Visitor Center** that makes scientific research easy to access. A mobile app called the **SeaWatch app** also allows the public to report marine issues, giving scientists real-time information to help protect the sea.

Eilat Coral Reef

AN ACTIVITY FOR YOU

The coral reef in Eilat is special, and it needs our help. To protect it, we need science, teamwork, and smart choices. Print out or draw pictures of the reef components to build your balanced coral reef, then pull challenge and solution cards to see how your reef is affected and if it can survive.

Reef Components	Challenges	Solutions
Corals: The reef's foundation. Shelter and food for fish.	**Global Warming:** Corals bleach and may die.	**Marine Protected Areas:** Limit damage and let nature recover.
Seagrass: Habitat for small fish, adds oxygen.	**Plastic Pollution:** Hurts fish, chokes coral.	**Environmental Laws:** Ban harmful activity near reefs.
Small Fish: Hide in coral and seagrass. Food for big fish.	**Overfishing:** Removes large fish, upsets balance.	**Plastic Reduction:** Less waste in the sea.
Large Fish: Predators that keep balance.	**Light Pollution:** Affects marine animals' cycles.	**Regional Cooperation:** Countries working together to protect reefs.
Sea Cucumber: Filters sand, helps keep the reef clean.	**Coastal Development:** Destroys important habitat.	**Responsible Tourism:** Visiting without harming.
Sea Urchin: Eats algae so coral doesn't get smothered.	**Oil Spill:** Pollutes the water, poisons marine life.	**Education:** Teaches everyone to protect the ocean.

Thank you so much for choosing the Eilat Coral Reef as your endangered animal!
Your interest and support can make a real difference in helping protect these incredible creatures and their future. Keep staying strong like the coral reef!