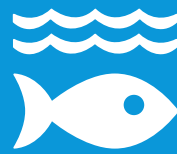




14 LIFE BELOW WATER



מרכז האוניברסיטה העברית לקיימות
The Hebrew University Center for Sustainability
مركز الجامعة العبرية للاستدامة



Scientific Progress

Dozens of fish species live in the Sea of Galilee, some of which do not exist anywhere else in the world. In recent years, local fishermen have been complaining about a significant shortage, especially the tilapia fish, whose numbers have been dwindling. In a newly published study, researchers from the Faculty of Agriculture, Food and Environment at Hebrew University were able to build a complete genetic database that will allow the identification and effective monitoring of the condition of the fish species in the Sea of Galilee. The research was conducted under the leadership of Prof. Lior David and Dr. Roni Tadmor-Levi (Department of Animal Sciences) together with Dr. Daniel Golani (National Nature Collections) and the Ministry of Agriculture.

Iron is quantitatively the most important micronutrient mineral for phytoplankton in aquatic ecosystems. As such, the concentrations and availability of iron for phytoplankton can influence ocean chemistry, major nutrients and carbon cycling, particulate matter transport, and gas exchange with the atmosphere. Prof. Yeala Shaked, an aquatic biogeochemist (Institute of Earth Sciences) studies iron nutrition of marine phytoplankton. These tiny but abundant microorganisms drive ocean-wide cycling of trace and major elements and, in turn, influence the atmosphere composition and our climate.

Community Impact

The podcast “Kayamut B’Ivrit” organized by the Center for Sustainability, is part of an effort to promote sustainability at HUJI. The first episode hosted Prof. Maoz (Alexander Silberman Institute of Life Science), who spoke clearly to the general public about coral reefs in the Gulf of Eilat, the risks that threaten them, and the chances of preserving the Gulf. Apart from their beauty, Prof. Fine explained the economic benefits of the coral reefs, their scientific value, and how coral reefs are likely to evolve in the near future under environmental and climate change.

Prof. Berta Levavi-Sivan (Department of Animal Sciences in the Faculty of Agriculture, Food and Environment) focuses on fish reproduction and fish growth, and is the founder of Aquinovo. One of the challenges to aquaculture is that reproduction, as an energy-intensive endeavor, makes fish grow more slowly. Prof. Levavi-Sivan, a specialist in aquaculture, developed molecules that neutralize the effect of molecules inhibiting fish reproduction and increasing growth rates, while the same quantity of feed is thereby converted into greater biomass.

The Interuniversity Institute for Marine Sciences in Eilat (IUI) evolved from the H. Steinitz Marine Biology Laboratory (MBL), established by the Hebrew University in 1968. Currently IUI is a national facility, shared by all universities in the country with many researchers and teaching staff from HUJI. The IUI focuses on providing a series of undergraduate and graduate courses carried out intensively during one- to two-week periods. The curriculum reflects all marine disciplines and is based on about 20 courses, including Environmental Processes in the Gulf of Aqaba, Topics in Fish Biology, and many more. One such course is “Marine Photosynthesis.” About half of the world’s photosynthetic production takes place in oceans. Despite this fact, very few of the mechanisms involved in marine photosynthesis and the environmental conditions that drive these processes, are presently taught at universities in Israel. The course aims to advance the understanding of marine photosynthesis through lectures, demonstrations, and laboratory work, as well as field measurements of photosynthetic rates and group projects.

Actions on Campus

Due to an oil spill in the Mediterranean, pollution was created that damaged the coastal environment and the living tissue all along the coast of Israel. Employees (administrative and academic) and students from HUJI decided to help with the cleaning, and a day-long bus run transported them to a segment of the beach north of Ashdod port to be cleaned. The university management subsidized the working days of administrative staff, transportation, catering, and protective equipment.

The Neev Center for Geoinformatics was established by Dr. John K. Hall, Prof. Yigal Erel, and Prof. Amotz Agnon (Institute of Earth Sciences) to address a variety of questions using geophysical and geological instruments. One of the team’s projects involves high-resolution mapping of all of Israel’s marine areas. Seafloor maps increase the scope, efficiency, and pace of deep-ocean exploration, saving both time and money while increasing chances for significant discoveries.