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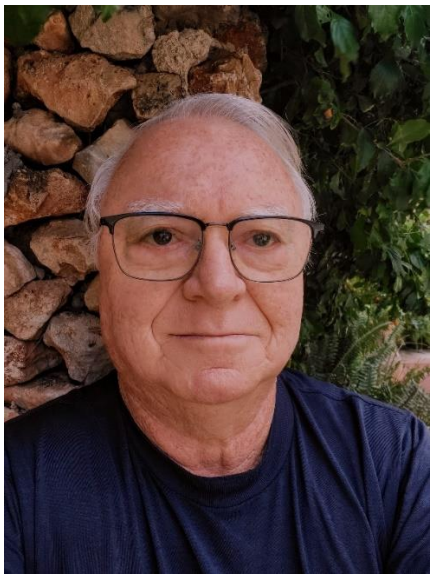
Curriculum vitae

Yossi Loya

Professor (Emeritus) of Marine Ecology
School of Zoology, Tel Aviv University
Tel Aviv, 69978 Israel

Date of birth: 23 May 1942
Place of birth: Plovdiv, Bulgaria
Year of immigration: 1944
Zahal, Military Service: 1960-1962
Marital Status: Married to Shoshana Loya
Children: Yael, Shay and Assaf



Lab:
Tel: 972-3-640-768
e-mail: yosiloya@tauex.tau.ac.il

Home:
31 Hakochav St. Raanana 43568
Tel: 972-9-774-1921
Mobile: 054-637-2121

Links:

Israel Academy of Sciences profile ;
University profile ; Web of Science ; Semantic Scholar ;
ויקיפדיה ; Google Scholar ; CRIS profile ;
Research Ecology Ranking ; AD scientific index ;

EDUCATION

Year	University/ Institute	Department	Degree
1962-1965	Tel Aviv University, Israel	**Biology**	**B.Sc.**
1965-1967	Tel Aviv University, Israel	**Zoology**	**M.Sc.**
1967-1971	State University of New York at Stony Brook, L.I. N.Y.	**Ecology & Evolution**	**Ph.D.**

M.Sc. Thesis: "Ecology of fish breeding in brackish water ponds near the Dead Sea". (*Suma cum laude*).
Supervisor: Prof. L. Fishelson

Ph.D. Thesis: "Community structure and species diversity hermatypic corals at Eilat, Red Sea".
Supervisor: Prof. L.B. Slobodkin

Post-doctorate: Woods Hole Oceanographic Institution, Mass.
1971-1972 Research: "Oil pollution effects on benthic communities in Buzzards Bay Woods Hole"
Supervisor: Prof. Howard Sanders

AREAS OF SCIENTIFIC INTEREST

My scientific interests are broad but ultimately linked to the ecology of reef-building corals including: Ecology and Evolution; Species diversity and community structure; Life history strategies of corals and their associated fauna; Competitive networks and space partitioning within coral populations; Effects of natural and anthropogenic disturbances; Effects of oil pollution on coral- reef communities; Conservation ecology and management of coral reef Nature Reserves; The role of boring organisms in bioerosion of coral reefs; Ecology of mesophotic coral environments (MCEs; 30-100 m depth); Sex change in corals; Global climatic changes and its effect on coral-reef communities; Coral bleaching; Coral diseases; Reef recovery, and refugia from climate change; Dynamics of coral populations and identification of key processes that regulate those dynamics. Predictive models of changes in coral-reef communities providing information on how to increase the chances of their survival.

ACADEMIC AND PROFESSIONAL APPOINTMENTS

Year	University/Institute	Department	Title
1962-1965	Tel Aviv University	Biology	B.Sc.
1965-1967	Tel Aviv University	Zoology	M.Sc.
1968-1971	State University of New York at Stony Brook, L.I., N.Y.	Ecology & Evolution	Ph.D.
1971-1972	Woods Hole Oceanographic Institute, Woods Hole, Mass.	Marine Ecology	Post-doctorate
1972-1976	Tel Aviv University	Marine Ecology	Lecturer
1976-1980	Tel Aviv University	Marine Ecology	Senior lecturer
1980-1986	Tel Aviv University	Marine Ecology	Associate Professor
1986-present	Tel Aviv University	Marine Ecology	Full Professor
1979-1980	The Australian Institute of Marine Science (AIMS)	Marine Ecology	Senior Queen Elizabeth Fellow
1988-1989	Tel Aviv University	Zoology	Chairman
1990-1995	Tel Aviv University	Faculty of Life Sciences	Dean
1995-2000	The Porter Center for Ecological and Environmental Studies, Tel Aviv University	Ecology	Director
1997-2012	Raynor Chair for Environmental Conservation Research, TAU	Environmental Conservation	Chair
1985-1986	Scripps Inst. of Oceanography La Jolla, San Diego USA	Ecology	Visiting Professor
1995, 97, 99, 04, 05 07, 08, 09, 10, 12,14 17,19,21 (summers)	University of the Ryukyus, Okinawa, Japan	Sesoko Tropical Biosphere Research Center	Visiting Professor
2007-2008	University of California Los Angeles (UCLA)	Ecology and Evolutionary Biology	Visiting Professor
2008-2018	James Cook University, Townsville, Australia	Marine Ecology	Adjunct Professor
2009	Center of Excellence, James Cook University, Townsville, Australia	Coral Reef Studies	Visiting Professor
2009 - present	Israeli Academy of Sciences and Humanities	Science Division	Member

INTERNATIONAL COMMITTEES ADVISORY AND ADMINISTRATIVE DUTIES

1971-1973	**Member-**	**Scientific Committee on Oceanic Research** (SCOR, UNESCO), Working group on: "Quantitative studies on coral reefs"
1977-1979	**Chairman-**	**The Zoological Society of Israel**.
1979-present	**Member-**	**Editorial board of the journals:** *Marine Ecology Progress Series* (76-84); *Coral Reefs* (82-86) *Marine Biology* (86-94); *Marine pollution Bulletin* (2002-2005)
1986-1992	**Advisor-**	**Israel National Academy of Science- Basic Research Foundation.**
1978-1990	**Member-**	**Scientific advisory board Nature Protection Authority, Israel**
1978-1992	**Member-**	**International Association of Biological Oceanography (IABO)** **Scientific international committee of the following coral reef symposia:** **-3d International Symposium on Coral Reefs: Miami, Florida, 1977;** **-4th International Symposium on Coral Reefs: Philippines, May 1981.** **-5th International Symposium on Coral Reefs: Tahiti, June l985.** **-6th International Symposium on Coral Reefs: Australia, August l988.** **-7th International Symposium on Coral Reefs: Guam, June l992.**
1982-1992	**Council Member**	**- International Society for Reef Studies (ISRS**).
1982-1986	**1st Editor -**	***"Coral Reefs"* (Biology Section) Springer-Verlag.**
1986-1992	**Member-**	The **Scientific Review Board**, Oil Spill Project- **Smithsonian Tropical Research Institute (STRI, Panama)**
1992	**Head-**	**The Israeli Scientific Delegation to the UN Conference** on **Environmental Development (UNCED) Rio-de Janeiro, Brazil.**
1993-1994	**Head -**	**Israeli scientific delegation to the Israel-Jordan Peace Talks establishing the Red Sea Marine Park Aqaba, Jordan**
1993-2000	**Chairman-**	**Israeli Man and the Biosphere (MAB)- Committee, UNESCO**
1996-1999	**Advisor-**	**Israeli Ministry of Science (Germany-Israel Marine Biology Program).**
1997-1999	**Advisor-**	**Israel Science Foundation (Ecology committee)**
1996-1999	**Chairman-**	**Board of Directors, Inter-University Institute of Marine Science (IUI), Eilat.**
2000-2008	**Member-**	**Board of Directors, IUI, Eilat**
2001-2005	**Member-**	**Scientific advisory board Nature Protection Authority, Israel**
1989-1990	**Chairman**	**Department of Zoology, Tel Aviv University**
1990-1995	**Dean -**	**Faculty of Life Sciences, Tel Aviv University**
1990-1995	**Member-**	**University Central Committee, Tel Aviv University**
1990-1995	**Member-**	**Board of Governors, Tel Aviv University**
1990-2002	**Member-**	**Board of Trustees, Tel Aviv University**
2000-2004	**Member-**	**Academic Planning Committee, Tel Aviv University**
2004-2007	**Member-**	**Central Nomination Committee, Tel Aviv University**
2002-2004	**Member-**	**Advisory and Review Board of the Research Institute of the Subtropics, Okinawa, Japan (Coral bleaching project).**
2004- 2010	**Co-Chair-**	**GEF/World Bank Working Group on Coral Bleaching.**
2006- 2014	**Chair**	**Scientific Board of the Australian Research Council (ARC) Centre of Excellence on coral reef research**
2011-2019	**Chair-**	**Israeli Scientific Committee for Oceanic Research (SCOR)**
2014-present	**Chair -**	**Israel Academy of Sciences Committee on scientific relations with Japan**
2015-present	**Chair-**	**Advisory Board: Batsheva de Rothschild Fund for the Advancement of Science in Israel**

PRIZES/HONORS

Senior Queen Elizabeth Fellow (1979-1980):
"For excellence in Marine Science and collaboration with Australian coral-reef scientists".

The Darwin Medal (Millennium Year-2000): The most prestigious prize of the International **Society for Coral Reef Studies (ISRS) awarded once every four years, *"for lifetime outstanding contribution to the field of coral reef research".***

The Landau Prize (2003): Awarded, by Mifaal Hapais in the category of Life Sciences ***"for original outstanding research contribution to the field of Ecology and Environmental Quality".***

Honorable membership of the Israel Society of Zoology (*2011*): ***"in recognition of his important contribution to research, teaching, education and nature conservation".***

EMET Prize in Exact Sciences: Environmental studies (2015): ***"for his pioneering and groundbreaking achievements in coral–reef research and for his seminal contribution in developing quantitative methodologies for assessment of biodiversity and health of coral communities and significant contribution to the knowledge of their reproductive strategies"***
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Lifetime Achievement Award on behalf of the Israeli Association for Ecology and Environmental Sciences (2023): *"for brilliant research excellence of the coral reef, for endless public activity and struggles to preserve the coral reefs in Eilat, and the leadership of the Department of Zoology and the Faculty of Life Sciences at Tel Aviv University, while educating a huge generation of students and developing the future generation of Sea researchers in Israel".*

AWARDS

1973 -	**NOAA - Manned Undersea Science and Technology Program:** "External distribution of energy fixed by reef corals at Puerto-Rico". Two weeks underwater expedition using underwater laboratory-PRINUL (In collaboration with Professors. S. Richman and Dr. L. McCloskey).
1974 -	**National Council for Research and Development:** "The effect of pollutants on coral reef communities".
1974-1976	**U.S.-Israel Bi-National Science Foundation:(BSF):** "Growth and development of reef corals."
1975-1976	**National Council for Research and Development**: "Experiments on the effect of oil pollution on hermatypic corals".
1976-1979	**Ministry for Commerce and Industry**: "Biologically active products from marine organisms". (With Prof. Y. Kashman, Tel- Aviv University)
1979-1980	**Senior Queen Elizabeth Research Fellowship**: Australian Institute of Marine Science, Cape Ferguson, Australia.
1980-1983	**Israeli Academy of Sciences- Basic Research Foundation**: "The variation in the chemical composition of soft-corals and sponges as a function of the place of collection" (with Prof. Y. Kashman, TAU).
1980-1983	**U.S.-Israel Bi-national Science Foundation (BSF):** "Isolation and identification of New Marine Natural Products" (with Prof. Y. Kashman, TAU).
1984-1985	The **Fund for Basic Research**, Tel Aviv University: "Ecology of boring bivalves in living stony corals".
1984-1987	The **Society for Nature Protection**: "Massive predation of scleractinian corals at Eilat caused by a predatory gastropod".
1984-1987	**Israeli Academy of Sciences- Basic Research Foundation**: "Reproductive strategies of Red Sea scleractinian corals".
1986-1989	**U.S.-Israel Bi-national Science Foundation (BSF):** "Larval ecology of boring bivalves in living corals".
1988-1990	**Harbor Branch Oceanographic Institution, Sea Pharm Project:** "Bioactive materials derived from soft corals and sponges from the Red Sea" (with Prof. Y. Kashman, TAU)

1989-1992	**National Council for Research and Development - Joint German-Israeli Program**: "A new method to assess indicators of environmental stress and possible stabilization or degradation of toxicants in coral reefs".
1990-1992	**FAO Mediterranean Action Plan (MED POL)**: "Swarming of jellyfish along the Mediterranean Coast of Israel: An environmental approach".
1990-1993	**National Coal Company**: "Effects of coal pollution on coral reefs".
1991-1994	**Office of Environmental Quality:** "Medusa blooms in the Mediterranean Sea: Ecological aspects".
1991-1995	**US National Institute of Health (NIH):** "Novel natural products from the sea as potential anti-AIDS drugs" (PI with Prof. Y. Kashman, School of Chemistry and Prof. A. Hizi, Medical School, TAU).
1992-1995	**Israel Academy of Sciences-Basic Research Foundation:** "Bioerosion of coral reefs by sponges, sea-urchins and bivalves".
1993-1996	**The German Israeli Foundation for Scientific Research and Development (G.I.F):** "Patterns of stable isotope fractionation during mineralization processes in corals: environmental implications".
1996-1999	**Israel Science Foundation (ISF):**" Bioerosion of coral reefs a multidisciplinary approach". (With B. Lazar, the Hebrew University)
1996-1999	**U.S.-Israel Bi-National Science Foundation (BSF):**"Coral bleaching by bacteria". (PI with E. Rosenberg, TAU).
1995-1999	**The German Ministry of Education, Science, Research and Technology (B.M.B.F.): - Red Sea Program-"**Scleractinian corals as environmental recorders of the Red Sea".
1998-2002	**Israeli Ministry of Science:** (PI with M. Ilan, TAU). Novel Bioactive Compounds from Marine Invertebrates and their symbionts
1998-2002	**Ministry of Science:** "Establishment of a National Infrastructure Laboratory: **Center for High Israeli Throughput Screening (HTS) for Novel Bioactive Compounds** at Tel Aviv University" -(**Director and Coordinator of a research project** involving 22 scientists from 6 universities and research institutions in Israel).
1999-2003	**MERC-Bi-National Research and Monitoring Program (Israel -Jordan) for the Red Sea Marine Peace Park, Aqaba, Jordan (**heading the monitoring program of "community structure of stony corals at the Coral Nature Reserve")
2002-2006	**Israel Science Foundation (ISF):** "Alternative feeding mechanism in corals: bacterial aggregate "gardening" (PI in collaboration with A. Kushmaro, Ben Gurion Univ.)
2004-2008	**Marie Curie European Research Training Network** (with M. Ilan, TAU)
2005-2010	**GEF/The World Bank/UNESCO/IOC**: International Targeted Working Group of Experts on "indicators of coral bleaching". Co-Chairman with Prof. Ove Hoegh Guldberg, including 14 scientists from the USA, England, Australia, Kenya, Israel, and Mexico. The group meets annually and works together for 2-3 weeks at one of the following reef sites: Heron Island (Great Barrier Reef, Australia), Puerto Morelos (Mexico), Philippines & Zanzibar.
2003-2007	**Israel Science Foundation (ISF)-** "An integrative approach of studying bacterial coral bleaching in the coral reef of Eilat". (PI with E. Rosenberg, TAU).
2004 -2006	**Porter School of Environmental Studies in collaboration with the Italian Ministry the Environment:** "Artificial Marine Structures (AMS): Multifunctional Tool for Research and Environmental Management in the Mediterranean and Red Sea (MED- RED) (PI with Y. Benayahu and A. Abelson).
2004-2008	**Israel Science Foundation (ISF):** The isotopic composition of Eilat's corals: basic aspects of signals Build up and tracing anthropogenic stress. PI in collaboration with A. Shemesh, the Weizmann Institute)
2007-2011	**Israel Science Foundation (ISF):** Etiology of Black Band Disease (BBD), Red Sea" (PI with E. Rosenberg, TAU).

2012-2013 **Israel Taxonomy initiative (ITI):** Taxonomy & molecular systematics of the Ctenophore fauna along the coasts of Israel (PI in collaboration with Dorothee Huchon, TAU)

2012-2013 **Israel Taxonomy Initiative (ITI):** Biodiversity of Mesophotic Scleractinian corals in the Gulf of Eilat/Aqaba.

2012-2016 **Israel Science Foundation (ISF):** Sex-allocation and sex change in mushroom scleractinian corals: a long-term study.

2013-2016 **Middle East Regional Cooperation (Program: U.S. Agency for International Development, Bureau for the Middle East (MERC-AID):** Developing novel methodologies for preservation and maintenance of coral biodiversity.

2016-2020 **Israel Science Foundation (ISF):** The mesophotic coral reefs of Eilat: reproduction, recruitment, community structure, and connectivity – a long term study

2017-2022 **Singapore Research Foundation -Israel Science Foundation (Joint NRF-ISF) grant:** Sex allocation, reproductive strategies and reproductive senescence in fungiid corals: a A comparative study in the coral reefs of Israel and Singapore

2021-2025 **Israel Science Foundation (ISF):** Coral and boring Bivalve symbiosis: Does coevolved mutualism support the resilience of coral reefs or does parasitism threaten their future?"

2022-2005 **NSF-BSF: US-Israel Binational Science Foundation joint program with NSF**. Photophysiology and bio-optics of Red Sea mesophotic corals (PI with Prof. Tresguerres Martin, University of California; Scripps Inst of Ocean, USA).

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Ecological Society of Israel; Zoological Society of Israel; The Israeli Association for Aquatic Sciences; Ecological Society of America; International Society for Reef Studies

SUPERVISION OF GRADUATE STUDENTS

Ph.D. students

Graduation Year	*Name*	*Thesis title*
1982	**Yehuda Benayahu**	Population dynamics and life-history strategies in Red Sea soft corals.
1982	**Baruch Rinkevich**	Calcification and productivity in the scleractinian coral *Stylophora pistillata*.
1984	**Avi Shafir**	Aspects of energy flow within the coral *Stylophora pistillata* and some of its associates.
1984	**Yechiam Schlesinger**	Reproduction and juvenile growth in stony corals.
1988	**Craig Browdy**	Growth and reproduction of the shrimp *Penaeus semisulcatus* in captivity.
1989	**Micha Ilan**	Life strategies of sponges from the Red Sea: Reproduction, settlement and self/non-self-recognition.
1993	**Avigdor Abelson**	Biomechanical aspects in biology and ecology of sessile organisms in coral reefs.
1993	**Ofer Mokady**	Bioerosion rate of corals by boring bivalves: A chemical approach.
1994	**Ramy Klein**	Skeletal banding in recent and fossil corals.
1995	**Amit Lotan**	Medusae blooms in the Mediterranean Sea: Ecological and toxicological aspects.
1998	**Ester Kramarsky Winter**	Reproductive strategies of fungiid corals: sexual and asexual reproduction.

1998	**Ariel Kushmaro**	Interactions between corals and their associated bacteria. (Co-Supervisor: Prof. E. Rosenberg).
2002	**Maoz Fine**	Community structure and dynamics of Mediterranean corals.
2003	**Michael Rosenfeld**	The use of contemporary corals in predictive models concerned with global climate change.
2003	**Dov Kelman**	Biologically active materials derived from Red Sea organisms.
2003	**Omer Choresh**	Expression of heat shock proteins (HSPs) in marine invertebrates: development of an early warning system for disturbed marine environments.
2007	**Gidon Winters**	Photoinhibition in corals – effects of UV, PAR and temperature.
2007	**Noa Shenkar**	Population dynamics of Mediterranean and Red Sea tunicates.
2009	**Amy Shlesinger**	Nudibranch/Anemone associations: a study of life histories and interactions.
2010	**Assaf Zevoluni**	Spatial patterns in coral reef populations.
2013	**Rachel Armosa**	Physiological mechanisms involved in the reproduction of Anthozoa.
2014	**Omri Bronstein**	Ecology, biology, and taxonomy of coral-reef associated sea urchins in the Red Sea and the western Indian Ocean
2018	**Ada Alamaru**	Molecular systematics of benthic ctenophores (Family: Coeloplanidae) from the Gulf of Eilat/Aqaba, Red Sea.
2018	**Gal Eyal**	Biodiversity of mesophotic (30-60 m depth) scleractinian corals in the Gulf of Eilat/Aqaba.
2019	**Lee Eyal-Shacham**	Individual annual fecundity and reproductive energy investment in solitary corals (Fungiidae).
2019	**Tom Shlezinger**	Demography, reproduction, and taxonomy of scleractinian corals along a large depth gradient (0–60 m)
2021	**Or Ben-Zvi**	Coral Fluorescence: testing the major hypotheses on mesophotic corals.
2021	**Raz Tamir**	Effects of downwelling irradiance and light spectrum on the community structure of corals (0-60 m depth).
2022	**Mila Grinblat**	Biogeography, reproductive biology, and early development in scleractinian corals (Co-supervisor with Professor David Miller, Dr. Ira Cook, Dr. Peter Cowman (JCU Australia)
2022	**Tal Amit**	In situ study of the metabolic strategies of bivalves residing in oligotrophic seas (Co-Supervisor: Prof. Gitai Yahel)
2023	**Netanel Kramer**	Macro- and microscale aspects of scleractinian coral morphology along shallow-to-mesophotic depths
Current	**Hanna Rapuano**	Aspects of aging in scleractinian corals.

M.Sc. students

Graduation Year	Name	Thesis title
1975	**Yehuda Benayahu**	Quantitative characteristics of stony corals, soft corals and algae in the northern Gulf of Eilat (Red Sea).
1975	**Baruch Rinkevich**	On the reproduction of *Stylophora pistillata* (Esper) and the harmful effects of oil pollution on its population.
1978	**Yechiam Schlesinger**	Effects of phosphate pollution on the community structure of the holothurians *Actinopyga bannwarthi* and *Synapta maculata*.
1978	**Mordehai Shpigel**	Spatial heterogeneity in branching corals and fish species diversity.
1979	**Zeev Wolodarsky**	Competition and space partitioning among *Trapezia* species within the coral *Stylophora pistillata*.
1985	**Esther Kramarsky-Winter**	The life-history strategy of the bivalve *Lithophaga purpurea* boring in the coral *Cyphastrea chalcidicum.*
1985	**Itzchak Brikner**	Reproductive and settlement strategy of the boring bivalve *Lithophaga purpurea* in living corals.
1987	**Avigdor Abelson**	Aggressiveness in stony corals: Is it competition for space?
1988	**Oved Gur**	Predation and life-history strategies of the coral predatory snail *Drupella cornus*.
1988	**Sara Sadot**	Life-history and reproduction of *Pocillopora* in the Gulf of Eilat.
1989	**Rami Klein**	Sclerochrondogical aspects of hermatypic corals (genus: *Porites*) in the Gulf of Eilat.
1989	**Gila Arazi**	Larval ecology of boring bivalves in living corals.
1990	**Oron Prager**	Surface structural complexity and its influence on ecological indices of aquatic communities.
1991	**Ofer Mokady**	Coral host specificity in settlement and metamorphosis of the date mussel *Lithophaga lessepsiana.*
1991	**Tamar Liberman**	Possible benefits to the coral *S. pistillata* from the association with the fish *Dascyllus marginatus*
1991	**Nadav Shashar**	Nitrogen fixation in stony corals.

1996	**Vered Shimoni**	Population genetics of boring bivalves in stony corals.
1997	**Dalit Trovezky**	Bioerosion of the coral reef by parrotfish (Co-supervisor: B. Lazar, Hebrew University).
1998	**Maoz Fine**	The scleractinian coral *Oculina patagonica*: A new invader to the Mediterranean Sea, biological and ecological aspects.
1998	**Hadas Lubinevsky**	Light and shade adapted Mediterranean corals
1998	**Amit Assor Mantel**	Association between the coral *Stylophora pistillata* and the gal forming crab *Hapalocarcinus marsupialis*
1999	**Omer Choresh**	Heat shock proteins in *Oculina patagonica*: a Mediterranean shallow-water coral.
2000	**Nachshon Siboni**	Effect of coal pollution on Mediterranean benthic communities.
2001	**Gidon Winters**	Photoinhibition in shallow-water colonies of *Stylophora pistillata* as measured in situ.
2003	**Noa Levin**	Environmental factors influencing the chronic bleaching of the Mediterranean stony coral *Oculina patagonica*.
2003	**Meir Sussman**	Fluorescent in situ Hybridization (FISH) reveals the fire worm *Hermodice carunculata* as a reservoir and a possible vector for the coral pathogen *Vibrio shiloi* (Co-supervisor-E. Rosenberg, TAU).
2003	**Ofer Ben-Zvi**	Deterioration Index (DI): a suggested tool for monitoring reef-coral community health. (Co-supervisor- A. Abelson).
2003	**Omer Polack**	Reproductive cycle of *Palythoa* sp. at Eilat, Red Sea (Co-supervisor- Y. Benayahu, TAU).
2004	**Amy Shlesinger**	Nematocysts' toxins of the Mediterranean Sea-anemone *Aiptasia diaphana* and their role in external digestion.
2005	**Rachel Armoza**	Bio-indicators of stress in scleractinian corals.
2006	**Roee Segal**	Molecular characteristics of the bleaching phenomenon of the Mediterranean stony coral *Oculina patagonica*.
2006	**Yehonatan Sharon**	Ecology of Lessepsian mussels invading the Mediterranean (Co-supervisor- Y. Benayahu, TAU).
2006	**Daniel Allen**	Community structure of deep (50 m) scleractinian corals in Eilat, Red Sea.
2008	**Ada Alamaru**	Trophic Biology of *Stylophora pistillata* larvae – A stable isotope approach (Co-super. A. Shemesh, Weizmann Inst).
2008	**Ido Mizrachi**	Sclerochronology of bleached and non-bleached corals. (Co-supervisor- A. Shemesh, Weizmann Institute).

2008	**Maya Weizel**	Bleaching effects on reproduction of a Red Sea scleractinian coral population.
2008	**Rafi Yaavetz**	Reproductive cycle of a Mediterranean nudibranch.
2009	**Omri Bronstein**	Morphological and molecular aspects of sea urchins (Genus *Echinometra*) from Okinawa, Zanzibar, and Eilat.
2009	**Ayelet Dadon**	Mechanisms of bleaching in the Mediterranean coral *Oculina patagonica* (Co-supervisor, M. Fine, Bar Ilan Univ.).
2011	**Itzhak Hoskin**	Life-history strategies of fungiid corals.
2011	**Ran Sulam**	The scleractinian coral community in the northern Gulf of Eilat (Red Sea): Effects of coral disease and a storm.
2012	**Gal Eyal**	Ecology and Taxonomy of mesophotic communities in Israel (the Red Sea and the Mediterranean).
2012	**Elad Mills**	Bleaching of the coral *Oculina patagonica*: the role of bacteria in coral health and disease (Co-supervisor - E. Rosenberg).
2012	**Lee Eyal-Shacham**	Reproductive strategies of deep(mesophotic) reef corals
2012	**Ram Barankin**	A precautionary approach for environmental policy: a basic model for discussion between science, law, and policy.
2014	**Tom Shlezinger**	Recruitment and mortality of corals at the coral reefs of Eilat.
2015	**Or Ben-Zvi**	Fluorescence in shallow vs. deep water (mesophotic) corals.
2015	**Tal Amit**	Ecology and Physiology of symbiotic communities of corals along a depth gradient at the Gulf of Eilat.
2016	**Hanna Rapuano**	Reproductive strategies of the coral *Turbinaria reniformis* in the northern Gulf of Eilat, Red Sea
2016	**Mila Grinblat**	Connectivity between mesophotic corals and shallow corals.
2017	**Bar Feldman**	Life-history traits of the coral *Paramontastrea peresi* in shallow vs. mesophotic reef habitats.
2018	**Netanel Kramer**	Recruitment dynamics of mesophotic vs. shallow-water corals on settlement panels.
2021	**Lachan Roth**	Life history and Population Dynamics of Fire coral *Millepora* Species in the Red Sea.
Current	**Noga Gavrieli**	Coevolution between boring bivalves and stony corals.
Current	**Maya Gross**	Energy transfer between corals and boring bivalves.
Current	**Shir Peretz**	Symbiotic relationship between corals and boring bivalves.

ACTIVE PARTICIPATION IN SCIENTIFIC MEETINGS

1970 Symposium of Regional Variation of Indian Ocean Coral Reefs.
The Royal Society and Zoological Society of London, London.
Invited lecture: Coral community structure at Eilat, Red Sea.

1971 The Penrose Conference on Marine Ecology and Pale ecology,
Monterey, California.
Lecture: Community structure and species diversity of hermatypic corals.

1973 Second International Symposium on Coral Reefs, The Great Barrier Reef, Australia.
Plenary lecture: On the possible use of plotless methods for quantitative studies of benthic communities of coral reefs.

1976 Third International Symposium on Coelenterate Biology, Victoria, B.C., Canada.
Lecture: Settlement, mortality and recruitment in a Red Sea scleractinian coral population.

1977 Third International Coral Reef Symposium, Univ. of Miami, Florida.
Lectures:
1. Seasonal occurrence of benthic-algae communities and grazing regulation by sea-urchins at the coral reefs of Eilat, Red Sea.
2. Harmful effects of chronic oil pollution on a Red Sea scleractinian coral population.

1978 Tenth International Congress of Sedimentology, Jerusalem.
Field leader: "Pleistocene and Recent coral reefs and coastal sedimentation in the Gulf of Eilat".

1978 Second International Congress of Ecology, Jerusalem.

1979 Australian Institute of Marine Science (AIMS) Workshop on Coral Reefs.
Cape Ferguson, Townsville, Australia
Lecture: Life-history strategy of a Red Sea coral population.

1980 UNESCO workshop on Marine and Coastal Processes in the Pacific: Ecological aspects of coastal zone management.
Mutupore Island Research Centre, Port Moresby, Papua New Guinea
Panel leader: Degradation of the environment.

1980 Second International Symposium on Biology and Management of Mangroves and Tropical Shallow Water Communities. The Western Society of Naturalists and the University of Papua New Guinea. Port Moresby, Madang, Papua New Guinea.
Plenary lecture: Competition for space among coral reef sessile organisms.

1981 Fourth International Coral Reef Symposium, Manila, Philippines.
Lecture: Life-history strategies of boring bivalves in corals

1981 U.S. National Academy of Sciences - Update workshop on: "Oil in the sea: Inputs, Fates and Effects". Invited referee in the section of Effects of Petroleum Hydrocarbons on Coral Reefs. Clearwater, Florida, USA.

1982 International Conference on Marine Science in the Red Sea. Al-Ghardaqa Marine Biological Station, Egypt.
Lecture: Seasonal changes in growth rates of a Red Sea coral population.

1982 Workshop on Evolution and Maintenance of Modern Coral Distributions.
Australian Institute of Marine Science, Townsville, Australia.
Invited lecture: Reproductive cycle of *Stylophora pistillata* in the Great Barrier Reef and the Red Sea.

1983 Great Barrier Reef Conference. James Cook University and the Australian Institute of Marine Science (AIMS), Townsville, Australia.
Plenary lecture: Community structure and life-history strategies of scleractinian corals.

1983 International Helgoland Symposium: "Diseases of Marine Organisms".
Biologisch Anstalt Helgoland, Helgoland, Germany F.R.
Invited lecture: Tumor formations in scleractinian corals.

1983 Second Conference of the International Society of Reef Studies, Nice, France.

Plenary lecture: Reproductive patterns of Red Sea corals.

1985 Fifth International Coral Reef Congress, Tahiti.
Invited lecture: Seasonal changes in growth rate of a Red Sea coral population.

1985 Western Society of Naturalists Annual Meeting, Monterey, USA.
Lecture: Sexual reproduction in reef corals: Red Sea versus the Great Barrier Reef.

1986 The Woods Hole Research Center: Conference on Biotic Impoverishment, Woods Hole, USA.
Plenary lecture: Changes in a Red Sea coral community under chronic oil pollution: A long-term case-history study.

1987 Twenty-second European Marine Biology Symposium, Barcelona, Spain.
Plenary lecture: Pollution effects of coral reef communities.

1987 Workshop on oil pollution effects on the coral reefs of Panama; Meeting of Scientific Review Board, Phase 1. Smithsonian Tropical Research Institute, Panama.

1987 Regional Research Workshop and International Symposium on the Conservation and Management of Coral Reef and Mangrove Ecosystems, Okinawa, Japan.
Invited lecture: Effects of man-made versus natural disturbances on coral reefs.

1988 Sixth International Coral Reef Symposium, Townsville, Australia.
Lecture: First sclerochronological record of hermatypic corals from the Red Sea.

1988 Workshop on the long-term assessment of the oil-spill at Bahia Las Minas, Panama. Washington, DC., USA.

1989 Fifth International Conference on Coelenterate Biology, Southampton, England.
Lecture: Larval and post-larval recruitment in the broadcasting scleractinians *Favia favus* and *Platygyra lamellina*.

1989 Fifth International Congress of Invertebrate Reproduction, Nagoya, Japan.
Lecture: Resource allocation between growth and reproduction in corals and boring bivalves.

1989 Annual meeting of the International Society for Reef Studies, Marseilles, France.
Invited lecture: Bioerosion of coral reefs.

1989 Workshop on the oil pollution effects on the coral reefs of Panama; Meeting of the Scientific Review Board, Phase 2. Smithsonian Tropical Research Institute, Panama.

1990 Fifth International Congress of Ecology, Yokohama, Japan.
Invited lecture: Coral host specificity between the date mussel *Lithophaga lessepsiana* and the coral *Stylophora pistillata*.

1991 Workshop on coral bleaching, Coral Reef Ecosystems and Global Climate Change. Miami, Florida.
Invited lecture: Climate change in Sinai Desert during the late Quaternary inferred from fluorescent bands in fossil corals.

1991 Workshop on oil pollution effects on the coral reefs of Panama; Meeting of Scientific Review Board, Phase 3. Smithsonian Tropical Research Institute, Panama.

1992 Seventh International Coral Reef Symposium, Guam,
Lectures: l. Settlement, metamorphosis and bioerosion rate of the boring bivalve *Lithophaga lessepsiana.* 2. Depth-dependent timing of density band formation in scleractinian corals at the coral reefs of Eilat, Red Sea, Israel.

1992 Status seminar of the German-Israeli Co-operation in Environmental Research; Ploen, Germany.
Lecture: A new method to assess indicators of environmental stress and possible stabilization of toxicants in the environment.

1992 International Symposium on Biodiversity and Adaptive Strategies of Coral Reef Organisms, Okinawa, Japan.
Plenary lecture: Massive predation of scleractinian corals at Eilat caused by

the predatory gastropod *Drupella cornus.*

1993 Conference on Middle East Multilateral Talks, UCLA, Los Angeles, USA.
Invited lecture: Development and protection of the Gulf of Aqaba.

1993 Conference on Global Aspects of Coral Reefs: Health, Hazards and History,
Univ. of Miami, USA.

1994 Plenary lecture: Long-term changes in coral community structure at Eilat, Red Sea.
The Porter Super-Center for Ecological and Environmental Studies Organizer of the International Symposium on the Peace Process and the Environment (Sept. 2004).
Lecture: Development and Protection, of the Gulf of Aqaba.

1995 UNESCO 28th General Meeting**:** -Scientific Representative of the Israeli delegation proposing to declare the Gulf of Aqaba (Eilat) as a Biosphere Reserve.

1995 Conference of the Red Sea Program (RSP) on Marine Sciences, Dahab, Egypt.
Lecture: The use of scleractinian corals as environmental recorders of the Red Sea.

1995 International Coral Reef Initiative Workshop; Dumaguete City, Philippines.
Israeli representative discussing quantitative methods for monitoring coral reefs.

1995 18th Pacific Science Congress: Population, Resources, and Environment Prospects; Beijing, China.
Lecture: Stony corals as environmental recorders.

1996 Eighth International Coral Reef Symposium, Panama City, Panama.
Lecture: Predation of corals by the predatory snail *Drupella cornus*.

1997 Biotic recoveries from mass extinctions; Panel member.
Academy of Sciences, Prague, Czech Republic.

1997 Workshop of the Bi-national Research and Monitoring Program (Israel –Jordan)- (MERC) for the Red Sea Marine Peace Park: –Discussion Leader. Aqaba, Jordan.

1998 Annual meeting of the Society for Integrative and Comparative Biology; Boston, USA.
Lecture: Bleaching of corals caused by bacteria.
Meeting of the Red Sea Program of Marine Sciences, Bremen, Germany.
Lecture: Scleractinian corals as environmental recorders of global change.

1998 Hawaii Coral Reef Monitoring Workshop-A Tool for Management; Univ. of Hawaii
Plenary lecture: The Red Sea Peace Park Coral Reefs Benthic Communities:
Ecology and Biology Monitoring Program.

1998 The Third EuroMab Biosphere Reserves Coordinators' Meeting Ilomantsi, Finland.
Lecture: The Red Sea Peace Park as a Transboundary Marine Biosphere Reserve.

1998 Expert workshop on coral bleaching: Convention on Biological Diversity Manila, Philippines.
Invited lecture: Devastating Coral bleaching in Okinawa, Japan.

1998 The Third Euro-MAB Biosphere Reserves Coordinators Meeting, Ilomantsi, Finland.
Lecture: The Red Sea Peace Park as a Trans-boundary Marine Biosphere Reserve.
Japan Marine Science and Technology (JAMSTEC) International Coral reef

1999 Symposium- Coral reef biodiversity and health as indicators of environmental change, Tokyo, Japan. Invited lecture: Regeneration processes in scleractinian corals**.**
SUNY at Stony Brook: A Symposium in honor of Laurence B. Slobodkin:
Invited Lecture: The Coral Reefs of Eilat: A Long-term Case-History Study.

2000 **The 9th International Coral Reef Symposium, Bali, Indonesia. Awarded the Darwin Medal (Year 2000) for lifetime contribution to coral reef research.**
***Invited Plenary lecture*:** Homage to *Stylophora pistillata:* a significant coral species in Red Sea coral reef research.

2001 The World Bank/UNESCO/IOC Workshop on Indicators of Coral Stress,
Paris, France. Initiation of the International Working Group of Experts.
Lecture: Coral bleaching: the winners and the losers

2002 The International Society of Reef Studies European Coral Reef Meeting; Cambridge, England
Lecture: Bleaching of Mediterranean corals is caused by a bacterial pathogen

2002 The World Bank/UNESCO/IOC International Targeted Group of Experts on "Indicators of coral bleaching". First Field-Workshop of the Working Group.

Heron Island, The Great Barrier Reef, Australia.

2002 Sixth EU Framework Program of the European Community for research technological development and demonstration activities; Network of Excellence Marine Molecular Biotechnology; Brussels, Belgium.
Invited lecture: Bioactive Compounds from Red Sea Marine Organisms.

2002 Workshop on "Biological considerations associated with current geochemical approaches using stony corals as proxies for the reconstruction of different aspects of past climates"; Woods Hole Oceanographic Institution, Cape Cod, Mass.
Invited lecture: "Using stony corals as proxies for the reconstruction of Red Sea past climates".
The World Bank/UNESCO/IOC International Targeted Group of Experts on "indicators of coral bleaching".

2002 Second Field-Workshop of the Working Group, Puerto Morelos, Mexico.
International Review Board Meeting of the Coral Bleaching Project.
Research Institute of the Subtropics (RIS), Tokyo, Japan.

2003 The World Bank/UNESCO/IOC International Working Group on indicators of coral bleaching: - Workshop on Coral Bleaching: Biological Early Warning

2003 Systems, Paris, France.
Marine Molecular Biotechnology and Biodiversity Meeting; Wendelsheim, Germany.
Plenary lecture: Biodiversity of the Red Sea coral reefs: A unique source for new natural products.

2003 Workshop on "Coral Health and Diseases", Eilat, Israel.
Invited lecture: The coral reefs of Eilat: 35 years of monitoring their coral community structure.
The Red Sea Marine Peace Park International Symposium Integration of

2003 Marine Science and Resource Management, Aqaba 2-4 December 2003

2003 International Coral Ecotoxicology and Health Workshop: Bermuda Biol. Stat. for Research
Invited lecture: The coral reefs of Eilat - past, present and future: Three decades of coral community structure studies

2004 The 10th International Coral Reef Symposium, June, Okinawa, Japan
Lecture: How to kill a coral reef?

2004 Census of Marine Life (CoML) Coral Reef Initiative Working Group: Quantitative methodologies for assessing coral community bleaching 14-16 October Washington DC

2004 IOC-GEF/World Bank working group on coral bleaching Workshop, 19-22 October, Washington DC

2004 **Awarded the Landau Prize by Mifaal Haapais for:"original outstanding research contribution to the field of Ecology and Environmental Quality".** Tel Aviv; 9 March
Invited public lecture: "The coral reefs of Eilat - past, present, and future".

2005 The World Bank/ /IOC-GEF International targeted Group of Experts third workshop on indicators of coral bleaching; 8-16 January, Puerto Morelos, Mexico

2005 Ilanit Congress of the Federation of the Israel Societies for Experimental Biology (FISEB) February 7-10 Eilat.
Invited Plenary Lecture: The Coral Reefs of Eilat: Three decades of Coral community structure studies.

2005 Peer Review of the Department of Ecology and Evolutionary Biology, 13-16 April, Ravenna, Italy.

2005 World Bank/ UNESCO/IOC-GEF International targeted Group of Experts fourth workshop on indicators of coral bleaching, 10-29 May, Puerto Morelos, Mexico

2006 GEF/World Bank working group on coral bleaching Workshop, 7-11 April, Paris France.

2006 ARC Centre of Excellence- first scientific annual board meeting, February 17-20, Townsville, Australia.

2006 Palau Coral reef workshop, Koror June 25th-July 8th.
Lecture: Fish net-pen mariculture and the coral reefs of Eilat: a sad story.

2006 ISRS (Intern. Society for Reef Studies) European Meeting Bremen, Germany Sept 19-22

Lecture: Net pen fish farming and coral reefs: An unhappy marriage.

2007 ARC Centre of Excellence- second scientific annual board meeting, February,Sydney, Australia.
Invited Lecture: The Coral Reefs of Eilat: Three decades of coral community structure studies.

2007 University of California Los Angeles (UCLA), Dept. of Evolutionary Biology:
Invited Lecture: How to influence environmental decision makers?The case of Eilat coral reefs.

2007 GEF working group on coral bleaching Workshop, Nov. 20-25, Miami, Florida

2008 IOC-GEF/World Bank/UNESCO working group on coral bleaching Workshop
February 12-16, Amsterdam, the Netherlands.

2008 The 11th International Coral Reef Symposium, June 7-11, Miami, Fort Lauderdale, USA
Lecture: Bidirectional sex change in fungiid corals.

2008 First International Congress Documenting, Analyzing and Managing Biodiversity in the Middle East. October 20-23, Aqaba, Jordan
Lecture: The Coral Reefs of Eilat-past present and future.

2009 International Okinawa Churaumi Aquarium Symposium on "Reproduction of marine organisms" Feb. 21-23, Okinawa, Japan.
Lecture: Repetitive sex change in mushroom corals.

2009 GEF/World Bank working group on coral bleaching Workshop
May 15-30, Heron Island, Australia.

2009 Organizer of a joint workshop of the Australian Research Council (ARC) Center of Excellence (CoE) for Coral Reef Studies and the Interuniversity Institute for Marine Sciences in Eilat (IUI): "Coral reefs of the Indo-Pacific in an era of global change" held at IUI, Eilat, Israel, 5-6 October.

2009 The 12th Japanese Coral Reef Society meeting. Memorial lecture in the honor of Professor Kiyoshi Yamazato. 28-29 November, Okinawa, Japan.
Plenary Lecture: "Reproductive Patterns of Fungiid Corals in Okinawa, Japan".

2009 11th Intern. Symp. on spermatology Satellite Symposium, 30th June, Okinawa, Japan.
Lecture: "Fungiid corals: ideal model organisms to study the evolution of coral reproductive traits"

2010 ARC Center of Excellence symposium: "Coral reefs in a changing environment"
7 October, Canberra, Australia
Keynote address: "Multiple sex changes in mushroom corals".

2011 ARC Center of Excellence symposium: Coral Reefs: Coast to Coast symposium.
Fremantle, Perth Western Australian Maritime Museum:

2011 Annual Zoological Society of Israel 25th Dec. Tel Aviv University
Recipient of honorary membership of the Zoological Society of Israel
Plenary lecture: Reproductive strategies in mushroom stony corals

2012 The 12th International Coral Reef Symposium 9-13 July Cairns, Queensland, Australia.
Lecture: The solitary coral *Fungia fungites* is a protogynous sequential hermaphrodite brooder.

2012 Amakusa Biodiversity Symposium: Biodiversity in Changing Coastal Waters of Tropical and Subtropical Asia November 29-Dec.4; Amakusa Japan
Lecture: *Fungia fungites*: a unique sex-changing brooder among the Fungiidae.

2013 Australian Research Council (ARC) Center of Excellence Symposium, Townsville, Australia, 9-12 October 2013: "Coral Reefs in the 21st Century"
Invited Plenary Lecture: Reproductive Strategies of Fungiid Corals

2013 Eighth International Conference on Coelenterate Biology (ICCB8), Dec 1-7 Eilat, Israel
Plenary Lecture: Reproductive Strategies of Fungiid Corals in the Coral Reefs of Okinawa, Eilat and Aqaba.

2014 Second International Mesophotic Coral Reef Workshop (MCEIsrael), Oct. 26-31, Inter-University Institute (IUI), Eilat, Israel (Chairman and organizer of workshop).

2015 **Israel's scientific representative in a High-Level Symposium at the United Nations:**
"One Ocean: Achieving Sustainability through Sanctuaries" (5 March 2015)
Plenary Lecture: "The coral reefs of Eilat: 45 years of coral community studies".

2015 Expert Habitat Committee Meeting 10th to 12 March 2015 National Museum of Natural-

History, Paris "developing a marine habitat classification targeted at coral reefs".

2016 Conference on Marine Protected Areas: An Urgent Imperative Dialogue Between Scientists and Policymakers; the Government of Italy and the Ocean Sanctuary Alliance March 7-10 Rome

2016 The 13th International Coral Reef Symposium 19-24 June Honolulu, Hawaii.
Lectures: 1. The Red Sea coral *Euphyllia paradivisa*: Is it really going extinct?
2. Ecophysiological aspects of depth dependent fluorescence in the coral *Galaxea fascicularis*

2016 Eco-Forum Global Conference Guiyang, China 7-14 July.
Plenary lecture: Coral reefs in an era of Global Climate change.

2016 Novel Achievements in Coral-Reef Research in a Period of Global Climate Change: Japan- Israel Workshop under the Auspices of Science Council of Japan and Israel Okinawa Institute of Science and Technology Graduate University (OIST);
Nov 28-Dec. 2. Organizer of the meeting.
Plenary lecture: The coral reefs of Eilat: 45 years of community structure studies.

2017 The 1st International Symposium on Coral Reefs (Hainan); the 1st International Forum on Coral Reefs; Sanya, Hainan, China Jan. 6-13.
Lecture: Coral reproduction and sex change.

2017 The European Coral Reef Symposium (ECRS) Oxford UK, Dec. 12-14.
Co-author in posters and lectures presented by three of my students.

2018 International symposium on the response of coral symbionts to global climate change and human activities (Haiku, Hainan, China (Dec. 9-10, 2018)
Plenary lecture: 50 years of coral community structure studies in Eilat, Israel (Red Sea).

2018 The Gordon Conference (GRC) on "The Functional Roles of Mesophotic Coral Reefs (MCEs) in the Anthropocene"; Bates College, Lewiston, ME, US; (June 17 – 22).
Discussion Leader:"Anthropogenic Change and The Future of Mesophotic Coral Reefs"
Introductory lecture:" Anthropogenic change and the future of mesophotic coral reefs".

2018 MUSÉUM NATIONAL D'HISTOIRE NATURELLE *Flongée-découverte au cœurdes récifs;* l'auditorium de la Grande Galerie de l'Évolution. France- Israel events celebrating Israel's 70th Independence Oct.15, 2018
Invited public lecture: "growth and senescence in stony corals".

2018 Steinhardt Museum of Natural-History, Tel Aviv University; France- Israel events Celebrating Israel's 70th Independence, Nov. 1, 2018.
Invited public lecture: "The future of coral reefs in an era of global climate change".

2018 International symposium on the response of coral symbionts to global climate change and human activities (Haiku, Hainan, China (Dec. 9-10, 2018)
Invited plenary lecture: Five decades of coral community structure studies in Eilat, Israel

2019 A symposium celebrating the 50th anniversary of the Inter University Institute of Marine Sciences (IUI) in Eilat: Red Sea marine ecosystems under anthropogenic changes
Invited plenary lecture: "The coral reefs of Eilat: 50 years of coral community studies.

2019 The second International Coral Reef Forum Hainan South China Sea Institute of Tropical Ocean, Hainan to be held Dec. 13 -16, 2019, Sanya, China.
Invited plenary lecture: "Breakdown of spawning synchrony silently threatens coral persistence"

2022 The 15th International Coral Reef Symposium 3-8 July 2022, Bremen, Germany

2023 Gordon Research Conference: "Connectivity and Resilience Relative to Shallow Reefs" 19-25 March, Ventura, Clifornia.

2023 The annual conference of the Israel Society of Ecology and Environmental Sciences **(ISEES)**:
Invited plenary lecture: 50 years of research of the coral reefs of Eilat.
Awarded "Lifetime Achievement Award" on behalf of the Association.

LIST OF PUBLICATIONS

1. Fishelson L., **Y. Loya** (**1968**). Preliminary observations on a population of *Gastrosaccus sanctus* (Van Benden) (Mysidacea Gastrosaccinae) on a Mediterranean sand beach of Israel. ***Crustaceana*** 15: 149-152
2. Fishelson L., **Y. Loya** (**1969**). Experiments of rearing *Tilapia* hybrids in brackish water ponds near the Dead Sea. ***Verh. Internat.Verein. Limnol***. 17: 602-610.
3. **Loya Y.,** L. Fishelson (**1969**). Ecology of fish breeding in brackish water ponds near the Dead Sea (Israel). ***J. Fish Biol.*** 1:261-278. **DOI:10.1111/j.1095-8649.1969.tb03858.x**
4. **Loya Y.,** L.B. Slobodkin (**197**1). The coral reefs of Eilat (Gulf of Eilat, Red Sea). ***Proc. Zool. Soc. London*** 28:117-140.
5. **Loya Y.** (**1972**). **Community structure and species diversity of hermatypic corals at Eilat, Red Sea.** ***Mar. Biol.*** 13:100-123.
6. **Loya Y.** (**1975**). **Possible effects of water pollution on the community structure of Red Sea corals.** ***Mar. Biol.*** 29:177-185
7. Richman S., **Y. Loya** & L.B. Slobodkin (**1975**). **The rate of mucus production by corals and the coral reef copepod *Acartia negligens*.** ***Limno.& Oceanog.*:** 20:918-923.
8. **Loya Y.** (**1975**). Environmental predictability in relation to life histories of reef corals. ***Proc. Ecol. Soc. Is.*** 6:215-223.
9. **Loya Y. (1976a). The Red Sea coral *Stylophora pistillata* is an r-strategist.** ***Nature*** 259:478-480.
10. **Loya Y.** (**1976b**). **Recolonization of Red Sea corals affected by natural catastrophes and man-made perturbations.** ***Ecology*** 57:278-
11. **Loya Y.** (**l976c**). **Effects of water turbidity and sedimentation on community structure of Puerto Rican corals.** ***Bull. Mar. Sci.*** 26:450-466.
12. **Loya Y.** (**1976d**). **Skeletal regeneration rate in a Red Sea scleractinian coral population.** ***Nature*** 261:490-491.
13. **Loya Y.** (**1976e**). Settlement, mortality and recruitment in a Red Sea scleractinian coral population., pp. 89-100 In: Coelenterate Ecology and Behavior Ed. By G.O. Mackie, Plenum Press, New York and London 744 p.
14. Benayahu Y., **Y. Loya** (**1977**). Space partitioning by stony corals, soft corals and algae in the northern Gulf of Eilat, Red Sea. ***Helgo. wiss. Meer.***, 30:362-382. **DOI: 10.1007/BF02207848**
15. Kashman Y., M. Bonder, **Y. Loya** & Y. Benayahu **(1977).** Cembranolids from marine origin (Red Sea), survey and isolation of a new Sinulariolide derivative. ***Isr. J. Chem.*** 16: 1-3. **DOI: 10.1002/ijch.197700002.**
16. **Loya Y.** (**1977**). Biology and Geology of Coral Reefs: A review. O.A. Jones and R. Endean (eds.) ***The Quart. Rev. of Biology*** 52:110-111.
17. Benayahu Y., **Y. Loya** (**1977**). Seasonal occurrence of benthic algae communities and grazing regulation by sea urchins at the coral reefs of Eilat, Red Sea. Third Int. Coral Reef Symp. Miami, Florida, pp. 383-389.
18. Rinkevich B., **Y. Loya** (**1977**). Harmful effects of chronic oil pollution on a Red Sea scleractinian coral population. Third Int. Coral Reef Symp. Miami, Florida, pp. 585-591.
19. **Loya Y.** (**1978**). Plotless and transect methods. In: Monographs on Oceanic Methodology. Coral Reefs: Research Methods. D.R. Stoddart and R.E. Johannes (eds.). UNESCO Press, 5: 197-218.
20. Bradbury R.H., **Y. Loya** (**1978**). A heuristic analysis of spatial patterns of hermatypic corals at Eilat, Red Sea. ***American Naturalist,*** 112:493-507. **DOI: 10.1086/283292**
21. **Loya Y,** B. Rinkevich (1979). **Abortion effects in corals induced by oil-pollution.** ***Mar. Ecol. Prog. Ser.*** 1:77-80.
22. Rinkevich B., **Y. Loya** (**1979a**). ***The* reproduction of the Red Sea coral *Stylophora pistillata.* I. Gonads and planulae.** . ***Mar. Ecol. Prog. Ser.*** 2:133-144.
23. Rinkevich B., **Y. Loya** (**1979b**). **The reproduction of the Red Sea coral *Stylophora pistillata.* II. Synchronization in breeding and seasonality of planulae shedding.** ***Mar. Ecol. Prog. Ser***. 2:145-152.

24. Rinkevich B., **Y. Loya** (**1979c**). Laboratory experiments on the effects of crude oil on the Red Sea coral *Stylophora pistillata*. ***Mar. Pollut. Bull.*** 10: 328-330 DOI: 10.1016/0025-326X(79)90402-8.

25. Kashman Y., **Y. Loya,** M. Bonder & Y. Benayahu (**1980**). Gas liquid chromatograms sesquiterpenes as fingerprints for soft coral identifications. ***Mar. Biol.*** 55:255-259. DOI: 10.1007/BF00393777.

26. Carmely S., Y. Kashman, **Y. Loya** & Y. Benayahu (**1980**). New prostoglandin (PGF) derivatives from the soft coral *Lobophytum depressum*. ***Tetrahed. Lett.,*** 21: 875-878. DOI: 10.1016/S0040-4039(00)71531-0

27. **Loya Y.,** B. Rinkevich (1980). **Effects of oil pollution on coral reef communities.** ***Mar. Ecol. Prog. Ser***. 3:167-180.

28. Benayahu Y., **Y. Loya** (**1981**). **Competition for space among coral-reef sessile organisms at Eilat, Red Sea.** ***Bull. Mar. Sci***. 31: 514-522.

29. Slobodkin L.B., **Y. Loya** (**1981**). **The Background and History of Ecology in Israel. In: Handbook of Contemporary Developments in World Ecology, E.J. Kormondy and J.F. McCormick (Eds.)** Greenwood Press pp. 549-559.

30. Shafir A., **Y. Loya** (**1983**). Consumption and assimilation of coral mucus by the burrowing mussel *Lithophaga lessepsiana*. ***Bull. Inst. Oceanogr. and Fish.*** 9:135-140.

3l. Rinkevich B., **Y. Loya** (**1983**). Response of zooxanthellae photosynthesis to low concentrations of petroleum hydrocarbons. ***Bull. Inst. Oceanogr. and Fish.*** 9: 109-115.

32. Rotem M., S. Carmely, Y. Kashman & **Y. Loya** (**1983**). Two new antibiotics from the Red Sea sponge *Psammaplysilla purpurea*. ***Tetrahedron,*** 39:667-676. DOI: 10.1016/S0040-4020(01)91843-5

33. Kinamoni Z., A. Groweiss, S. Carmely, Y. Kashman & **Y. Loya** (**1983**). Several new cembranoid diterpenes from three soft corals of the Red Sea. ***Tetrahedron,*** 39:1643-1648. DOI: 10.1016/S0040-4020(01)88575-6

34. Rinkevich B., **Y. Loya** (**1983**). **Intraspecific Competitive Networks in the Red Sea Coral *Stylophora pistillata*.** ***Coral Reefs,*** 1: 161-172.

35. Rinkevich B., **Y. Loya** (1983). **Oriented translocation of energy in grafted reef corals.** ***Coral Reefs***, 1: 243-247.

36. Benayahu Y., **Y. Loya** (**1983**). **Surface brooding in the Red Sea soft coral *Parerythropodium fulvum fulvum* (Forskal, 1775)** ***Biol. Bull***. 165:353-369.

37. Rinkevich B., **Y. Loya** (1983). **Short term fate of photosynthetic products in a hermatypic coral.**.***Jour. Exp. Mar. Biol. and Ecol.*** 73: 175-184.

38. Carmely S., **Y. Loya** & Y. Kashman (**1983**). Siphonellinol, a new triterpene from the marine sponge *Siphonochalina siphonella*. ***Tetrahedron Letters,*** 24:3673-3676 DOI: 10.1016/S0040-4039(00)88198-8.

39. Benayahu Y., **Y Loya** (**1984**). **Life history of the Red Sea soft coral *Xenia macrospiculata* Gohar, 1940. I. Annual dynamics f gonadal development.** ***Biol. Bull.*** 166:32-43. **DOI: 10.2307/1541428**

40. Benayahu Y., **Y. Loya**, (**1984**). Life-history of the Red Sea soft coral *Xenia macrospiculata* Gohar, 1940. II. Planulae shedding and post larval development. ***Biol. Bull.*** 166:44-53. DOI: 10.2307/1541429

4l. Rinkevich B., **Y. Loya** (**1984**). Does light enhance calcification in hermatypic corals? ***Mar. Biol.*** 80: 1-6. DOI: 10.1007/BF00393120

42. **Loya Y.,** G. Bull and M. Pichon. (**1984**). **Tumor formations in scleractinian corals.**. ***Helgolander wiss. Meeresunters,*** 37:99-112.

43. Rinkevich B., **Y. Loya** (**1984**). **Coral illumination through an optic glass-fiber: incorporation of ^{14}C photosynthates.**. ***Mar. Biol.*** 80:7-15.

44. Benayahu Y., **Y. Loya** (**1984**). **Substratum preferences and planulae settling of two Red Sea soft corals: *Xenia macrospiculata* and *Parerythropodium fulvum fulvum.*** ***J. Exp. Mar. Biol. Ecol.*** 83:249-261.

45. Benayahu Y., **Y. Loya**. (**1984**). Settlement and recruitment of a soft coral: Why is *Xenia macrospiculata* a successful colonizer? ***Bull. Mar. Sci.*** 36:177-188

46. Rinkevich B., **Y. Loya** (**1985**). **Intraspecific competition in a reef coral: effects on growth and reproduction.** ***Oecologia,*** 66: 100-105.

47. Muscatine L., L.R. McCloskey & **Y. Loya** (**1985**). **A comparison of the growth rates of zooxanthellae and animal tissue in the Red Sea coral *Stylophora pistillata*.**

Fifth Int. Coral Reef Congress, Tahiti, 6:119-123.

48. **Loya Y.** (**1985**). Seasonal changes in growth rate of a Red Sea coral population. Fifth International Coral Reef Congress, Tahiti, 6:187-191.

49. Rinkevich B., **Y. Loya** (**1985**). Coral Isomone: A proposed chemical signal controlling intraclonal growth patterns in a branching coral. ***Bull. Mar. Sci.*** 36:319-324.

50. Schlesinger Y., **Y. Loya** (l985). **Coral community reproductive patterns: Red Sea versus the Great Barrier Reef.** ***Science,*** 228: 1333-1335.

5l. Benayahu Y., **Y. Loya** (**1986**). Sexual reproduction of a soft coral: synchronous and brief annual spawning of *Sarcophyton glaucum*. ***Biol. Bull.*** 170:32-42. **DOI: 10.2307/1541378**

52. Rinkevich B., **Y. Loya** (**1986**). **Senescence and dying signals in a reef-building coral.**. ***Experientia,*** 42: 320-322.

53. Bradbury R.H., **Y. Loya**, R.E. Reichelt & W. T. Williams (**1986**). **Patterns in the structural typology of benthic communities: Patterns in the structural typology of benthic communities on two coral reefs of the Central Great Barrier Reef.** ***Coral Reefs,*** 4:161-167

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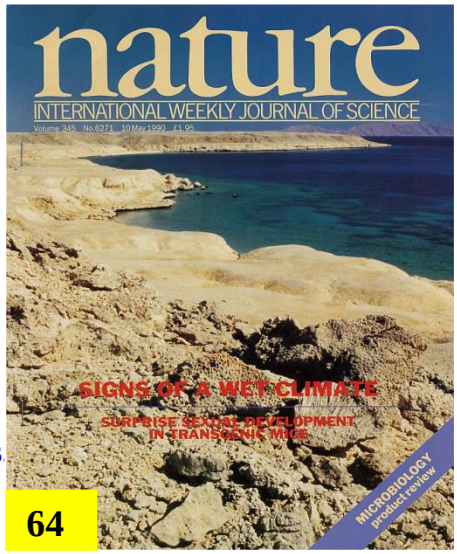

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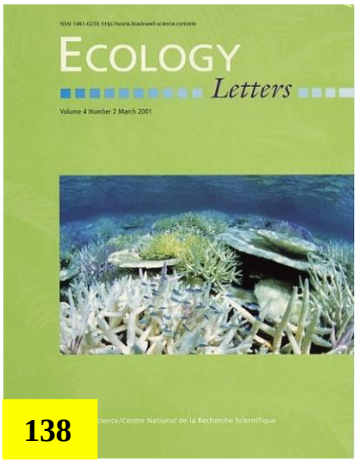

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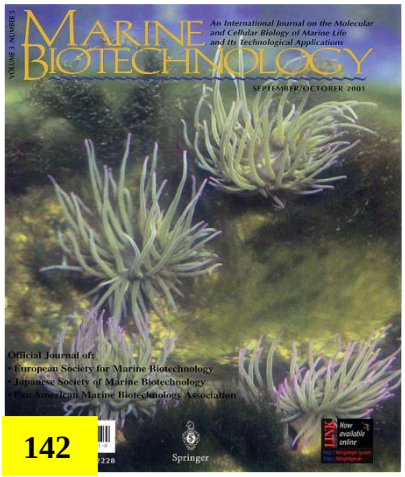

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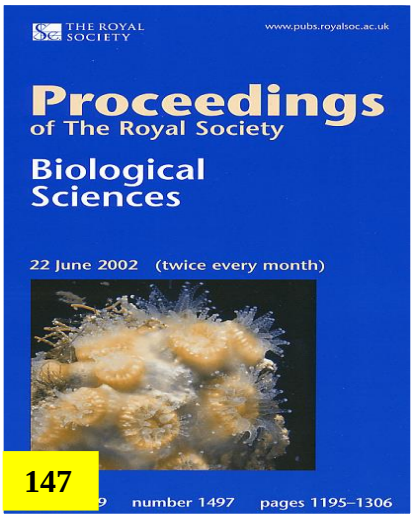

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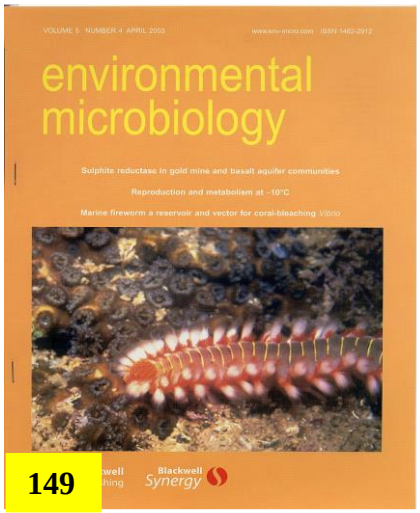

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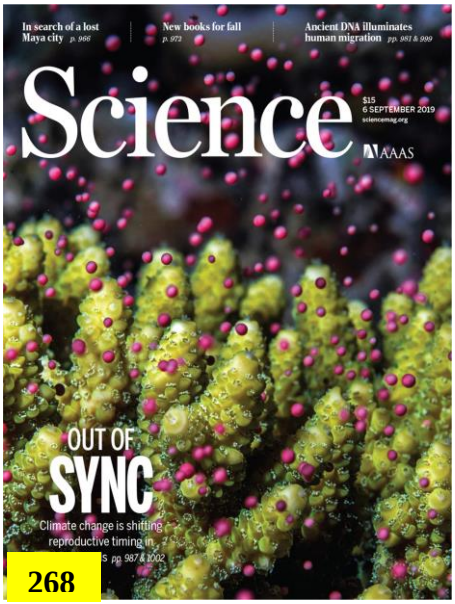

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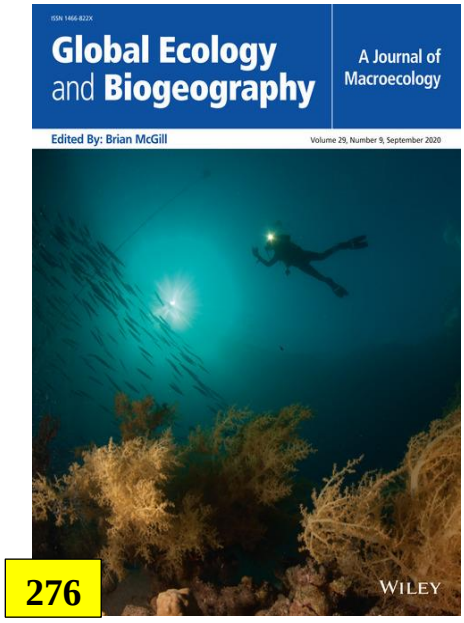

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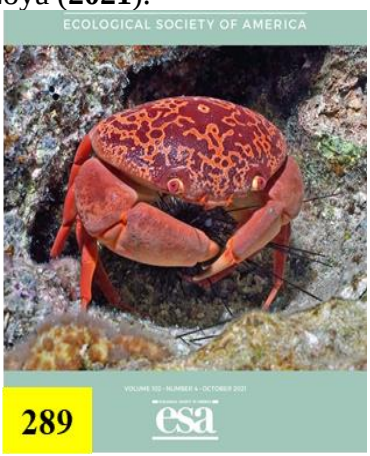

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Feeding on the smallest cells: an in-situ study of picoplankton capture by bivalve molluscs from oligotrophic waters

Front. Mar. Sci. Volume 10 **doi.org/10.3389/fmars.2023.1184773**

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Science of the Total Environment 891: 164493

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Reef-building corals farm and feed on their photosynthetic symbionts

Nature **doi.org/10.1038/s41586-023-06442-5**

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Mar. Biol. 171:56 **doi.org/10.1007/s00227-023-04378-y**

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Science of the Total Environment (Submitted).

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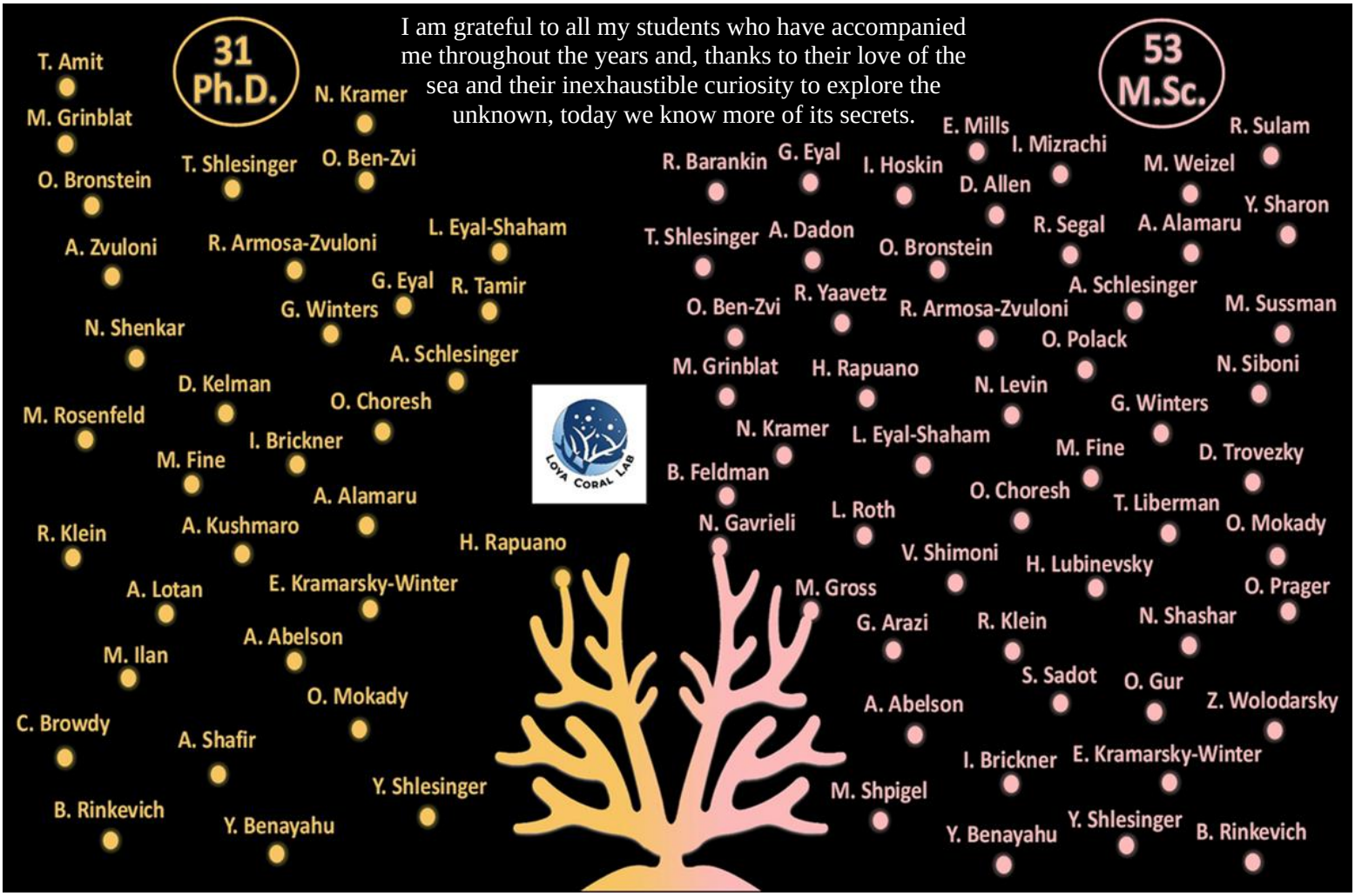
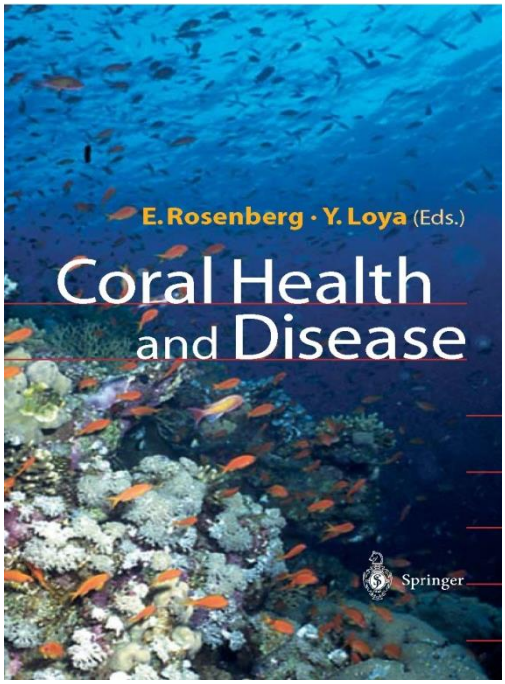
Loya' coral graduate students' tree



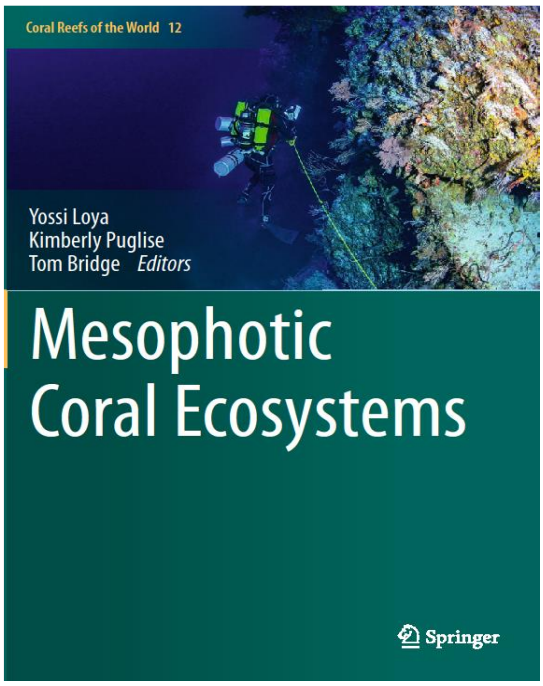
Books

יוסי לויה ורמי קליין (1996)
שונית האלמוגים
משרד הביטחון ההוצאה לאור
320 עמודים

Y. Loya & R. Klein (1996)
Die Welt der Korallen
Jahr-Verlag GmbH Co. Hamburg
312 p.



E. Rosenberg & Y. Loya (Eds.) (2004)
Coral Reef Health and Disease
Springer-Verlag; Berlin, Heid., NY
400 p.



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Mesophotic Coral Ecosystems
Springer-Verlag; Berlin, Heid., NY
1003 p.

Links

23 May 2022 - Yossi's 80th Birthday

בחסות האקדמיה הישראלית למדעים

Under the auspices of the Israel Academy of Sciences and Humanities

"Five generations of coral reef research in Eilat's coral reefs"

Entire video recording of the celebration: https://www.youtube.com/watch?v=bMw7O-Op6-4

Video recording of lectures shown during the celebration

יום עיון בנושא שונית אלמוגים קטנה, מורשת גדולה: חמישה דורות של מחקר באילת לכבוד פרופ' לויה בהגיעו לגבורות

Video: Yossi 80 years young: https://www.dropbox.com

מבחר כתבות, הרצאות וקטעי וידאו:

- 2009-חילופי זוויג רב-פעמיים באלמוגים. הרצאה בטקס הקבלה לאקדמיה הישראלית למדעים (טקסט ההרצאה)
- 2009- שלושה מדענים מובילים מצטרפים כחברים חדשים לאקדמיה הלאומית הישראלית למדעים
- 2015- פרופ' יוסף (יוסי לויה): פרס א.מ.ת 2015, באתר אוניברסיטת תל אביב.
- 2015- פרופ' יוסי לויה זוכה פרס א. מ. ת. לשנת 2015 במדעי הסביבה- (וידאו).
- 2021- שונית האלמוגים באילת- עבר, הווה ועתיד (הרצאה).
- 2021-youtube: בעיות זיהום הים בנפט לנוכח ההסכמים של מדינות המפרץ עם חברת קצא"א (הרצאה).
- 2022- 80 שנה ב-8 דקות (מצגת שהוצגה בערב העיון ומסיבת הגבורות באקדמיה הלאומית למדעים)
- 2022- שמירת טבע בישראל - סקירה היסטורית: שוניות האלמוגים באילת

  (יוסי לשם מראיין את יוסי לויה) - ארכיון הספרייה הלאומית בירושלים.
- 2023/ ynet- https://www.ynet.co.il/environment- -החוקר שהתאהב בשוניות האלמוגים - והפך ללוחם

  עבור שמירתן (כתבה).
- 2023- פרס מפעל חיים לפרופ' יוסי לויה, באתר אוניברסיטת תל אביב
- 2023 ראיון עם פרופ' יוסי לויה חבר האקדמיה הישראלית למדעים

Selected Lectures, Interviews, Expeditions; Workshops

1993: **Eritrea, Dahlak Expedition- https://youtu.be/HKtpFvrUIo4**

2009: Heron Island workshop on coral reproduction - https://youtu.be/PtzxSYfDs_o

Research

2019: T. Shlesinger and Y. Loya ***Science*** **(2019) "*Breakdown of spawning synchrony threatens coral persistence*" https://www.youtube.com/watch (video).**

Interviews

1998: Interview at the Society of Integrative and Comparative Biology (SICB); Boston, Jan. 6, 1998.

2018: Interview by Springer- Nature Campaign (ICRY18)

Lectures

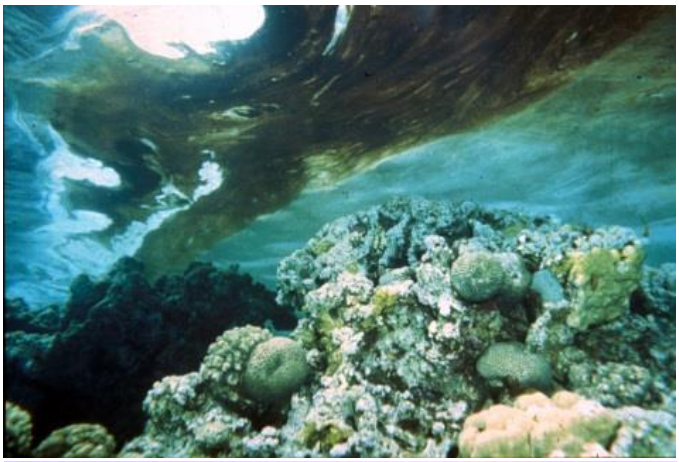
2010: Title: "*Multiple sex change in mushroom corals*"
https://www.youtube.com/watch
Venue: ***Australian Academy of Sciences: Symposium at the ARC Center of Excellence for Coral Reef Studies Australia; Canberra.***

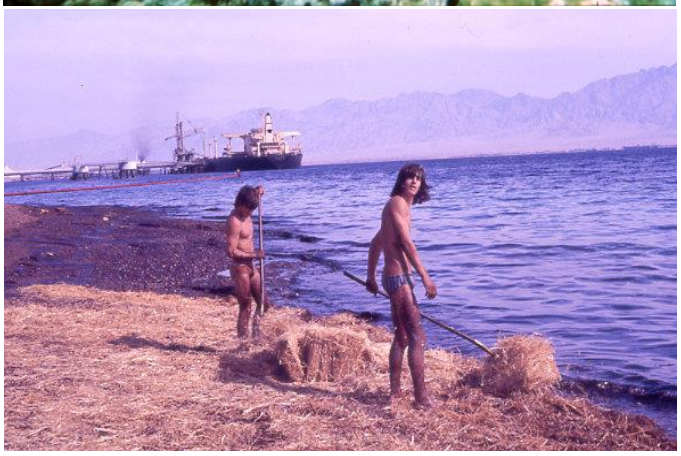
2013: Title: "*Reproductive strategies of fungiid corals*"
Venue: ***ARC Center of Excellence for Coral Reef Studies; Townsville, October 2013.***

2022: Title- "***Local stressors amplify the dire consequences of global warming to coral reefs.*" https://www.youtube.com/watch**
Venue: Sharem el Sheikh; COP27, November 11, 2022

My theme

Effects of natural vs. anthropogenic disturbances on coral reef communities



See examples:

Loya Y., L.B. Slobodkin (**197**1). The coral reefs of Eilat (Gulf of Eilat, Red Sea). ***Proc. Zool. Soc. London*** 28:117-140.

Loya Y. (**1972**). Community structure and species diversity of hermatypic corals at Eilat, Red Sea. ***Mar. Biol.*** 13:100-123.

Loya Y. (**1975**). Possible effects of water pollution on the community structure of Red Sea corals. ***Mar. Biol.*** 29:177-185.

Loya Y. (**1976**b). Recolonization of Red Sea corals affected by natural catastrophes and man-made perturbations. ***Ecology*** 57:278-289.

Loya Y. (**l976**c). Effects of water turbidity and sedimentation on community structure of Puerto Rican corals. ***Bull. Mar. Sci.*** 26:450-466.

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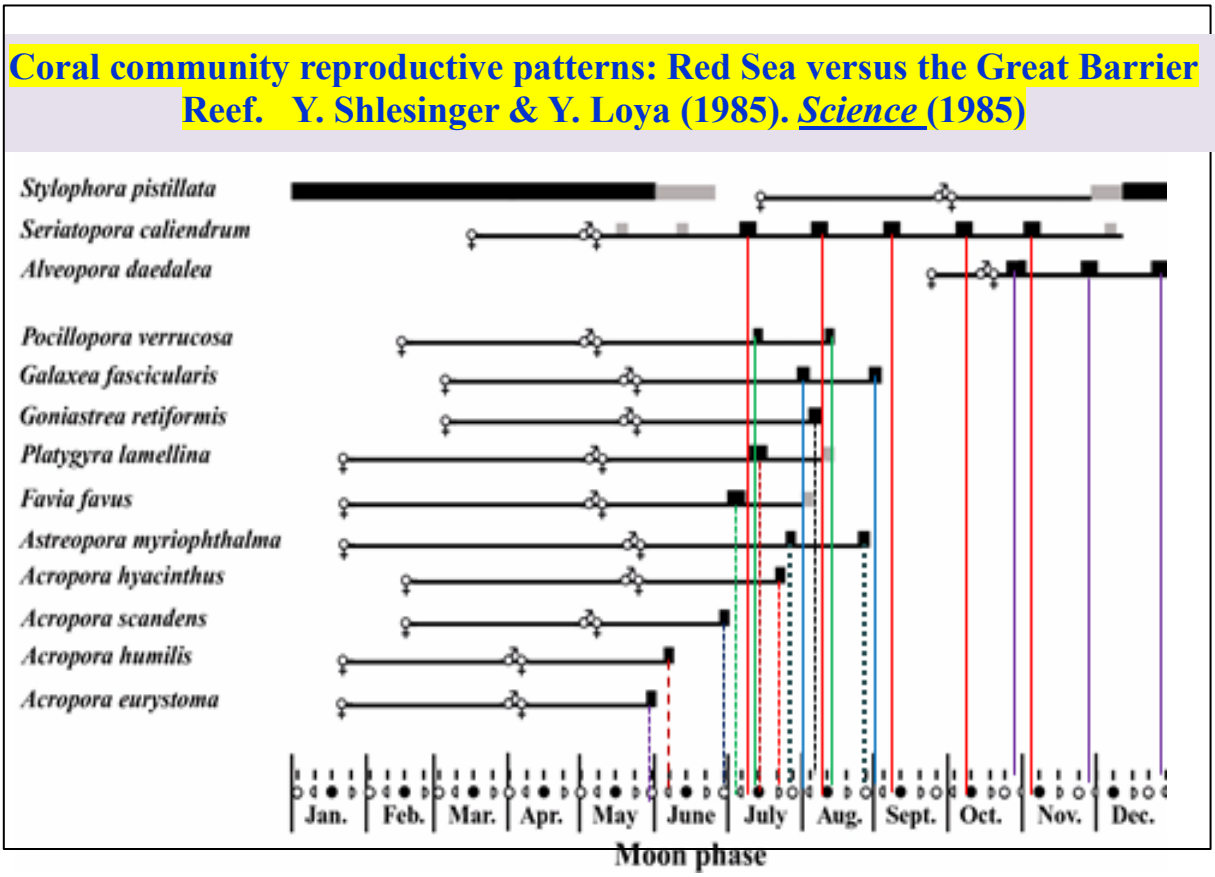
Life history strategies of reef corals: growth and reproduction



In contrast to many corals of the Great Barrier Reef, Australia, which are synchronous multispecific spawners, the abundant coral species in the northern Red Sea, Israel, exhibit temporal reproductive isolation. Spawning periods of the most abundant coral species occurred in different seasons, different months, or different lunar phases within the same month.

Examples:

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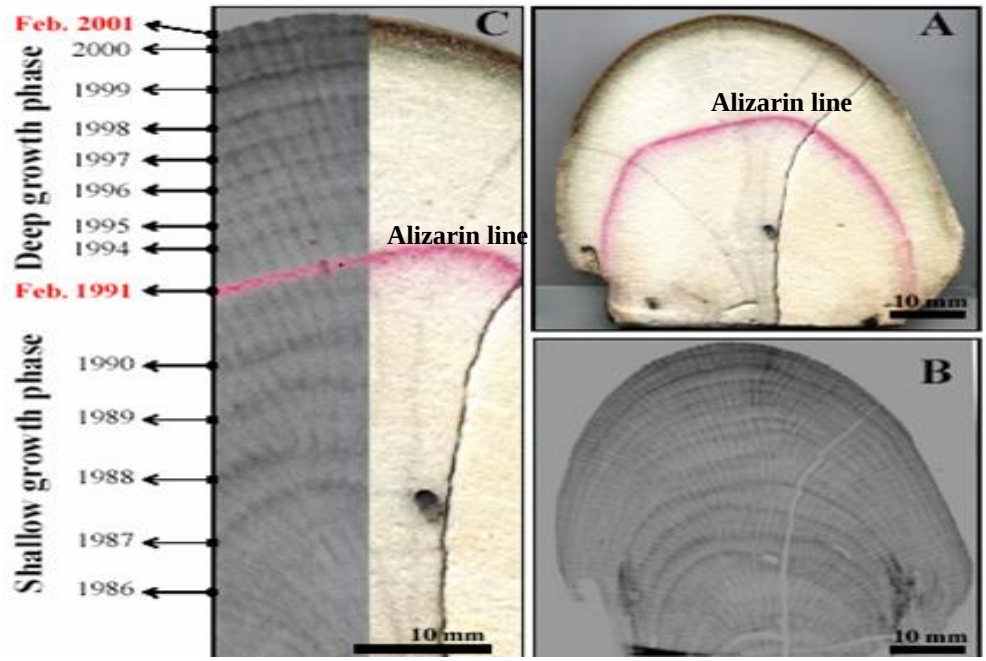
The use of contemporary corals in predictive models of global climate change



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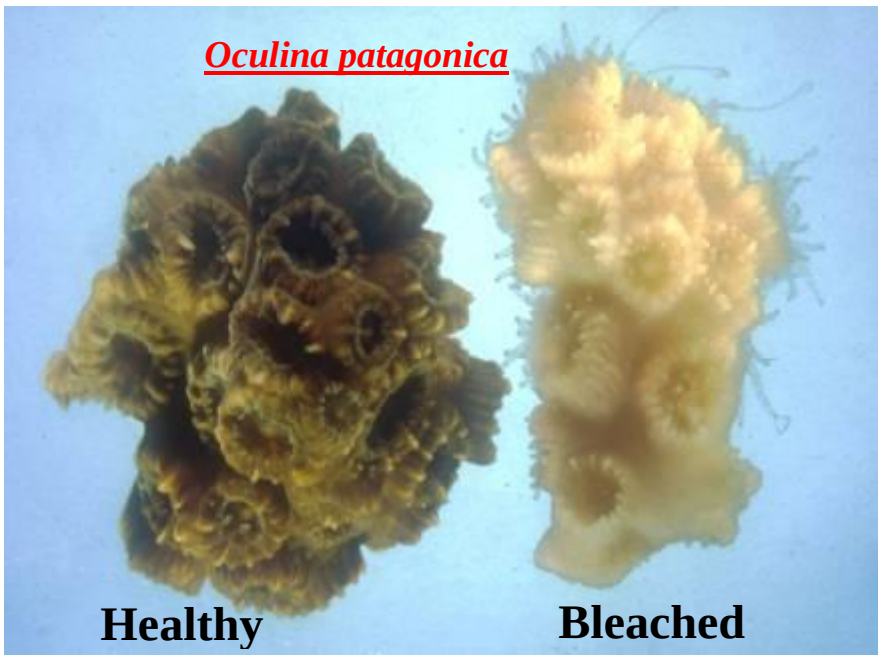
Bacterial infection, disease and coral bleaching



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Kushmaro A., E. Rosenberg, M. Fine & **Y. Loya** (**1997**). Bleaching of the coral *Oculina patagonica* by *Vibrio* AK-1. ***Mar. Ecol. Prog. Ser***.147:159-165.

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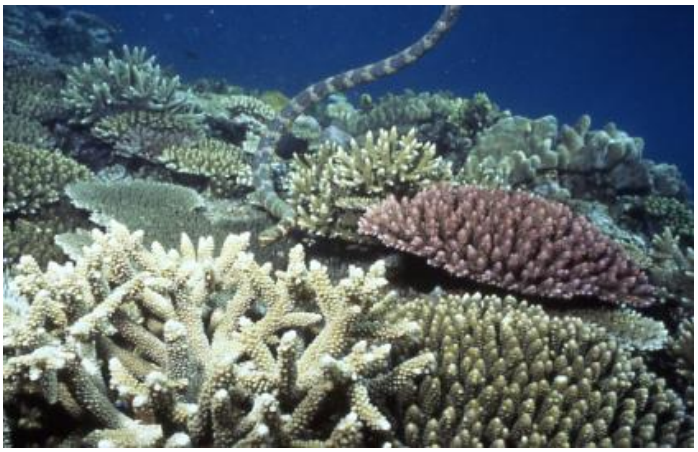
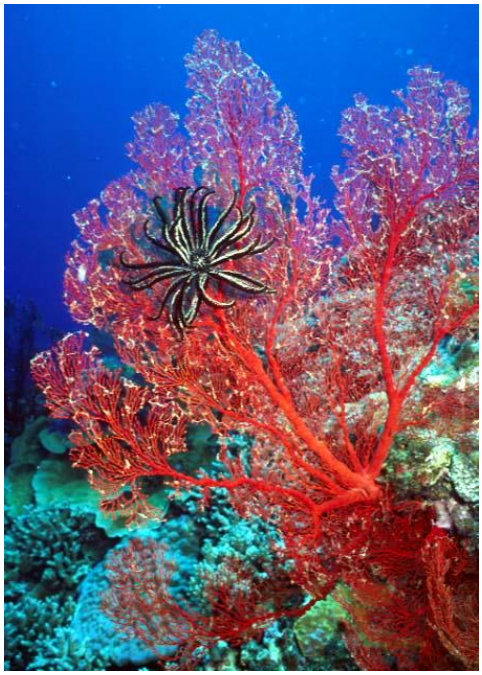
Yossi Loya **Tel Aviv University**

Biologically active materials derived from coral-reef organisms in search for new drugs

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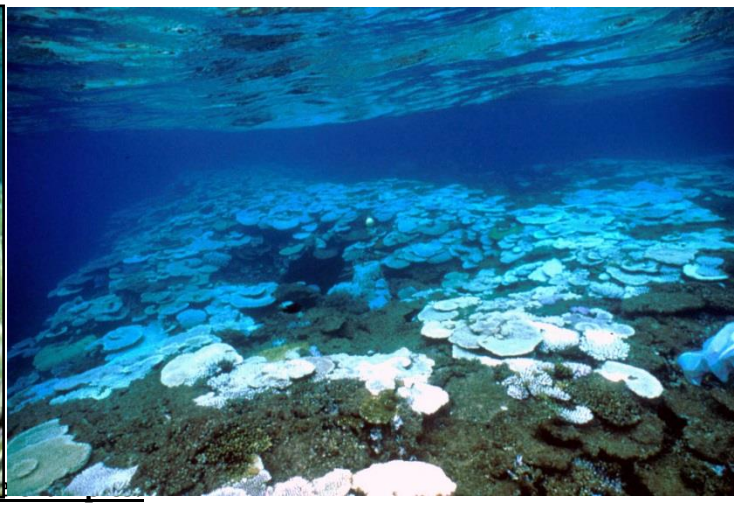
Yossi Loya **Tel Aviv University**

Global climate changes and its effect on biodiversity of coral reef communities

WORLD BANK/ UNESCO Project on the consequences of Coral Bleaching in the Great Barrier Reef (Australia), Zanzibar, Philippines & Mexico

(Bleaching working group http://www.gefcoral.org/)

The *Bleaching Working Group* (***BWG***) has set established permanent study sites in Zanzibar, Puerto Morelos and Heron Island. At these sites, researchers are exploring the population dynamics under natural and perturbed conditions, as well as spatial patterns in population size frequency distributions and temporal changes of the populations in and out of bleaching events. Work within this research area also aims to resolve the potential impacts of changes in coral health on the many other species that are dependent on coral reefs for food and shelter.



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Conservation Ecology of Coral-Reefs

The coral reefs of Eilat: Past, present and future

Deterioration in water quality due to eutrophication adversely affects coral reef community structure by promoting algal growth and turbidity, reducing light necessary for coral growth, adversely affects coral reproduction and has also been associated with increased bioerosion and epizootics. During the last 10 years, the yield of the fish farm industry in Eilat has grown exponentially from 300 tons/yr in 1994 to 2700 tons/yr in 2005. Cultured fish fed by 4500 tons/year "fish pellets" result in nutrient pollution (eutrophication), of the water column by 300 tons of Nitrogen and 50 tons of Phosphate annually.

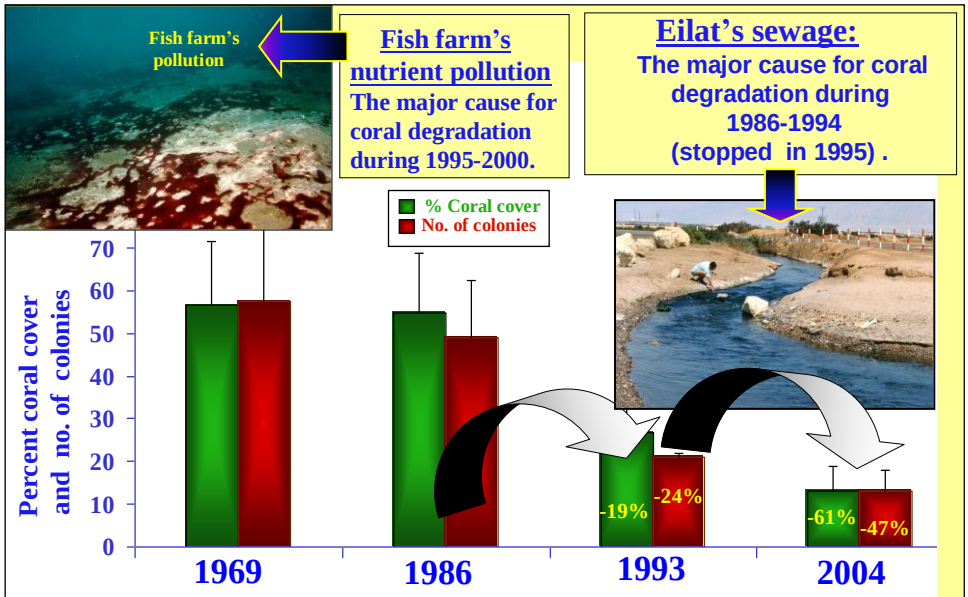

Fig. 5. Eilat's sewage and fish farm's nutrient pollution

Nutrification resulting from the activity of the fish farms, "replaced" Eilat's sewage pollution, continuing the mass killing of corals and accelerating the final destruction of the unique coral reefs of Eilat.

➢ **2009 After government rule: Fish cages were removed from the northern Gulf of Eilat !**

Examples:

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Loya Y., M. Rosenfeld & E. Kramarsky-Winter **(2005).** Nutrient enrichment and coral reproduction: empty vessels make the most sound (response to a critique by B Rinkevich) ***Mar. Pollut. Bull***. 50:114-118

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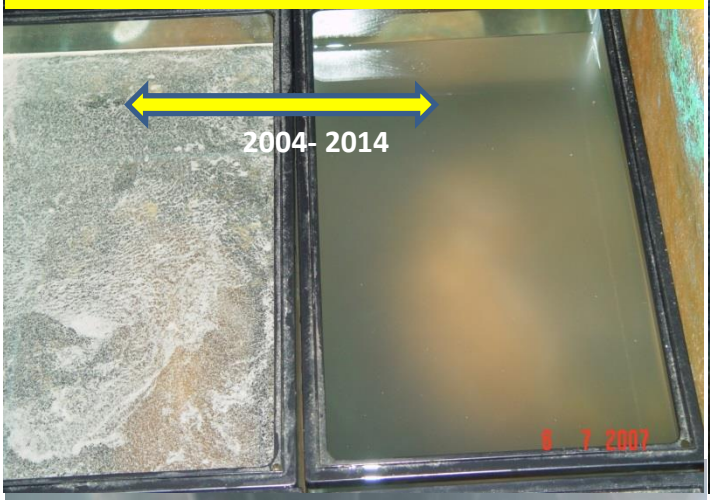
Shlesinger Tom and **Yossi Loya (2016)** Recruitment, mortality and resilience potential of scleractinian corals at Eilat, Red Sea ***Coral Reefs*** 35: 1357-1368

Yossi Loya **Tel Aviv University**

Repetitive sex change in Fungiid species

In this study, we describe for the first-time sex change occurring in corals. This includes a novel mode of repetitive sex change, which resembles that found in plants that display labile sexuality in response to environmental and/or energetic constraints. We suggest that resource partitioning in sex-allocation constitutes a flexible response of sex changing fungiid corals to local environmental conditions, and that their bidirectional sex shift reflects energy constraints on female reproduction. We discuss some intriguing analogies between the studied corals to sexually labile plants and posit that sex change in fungiid individuals enhances their fitness in a similar way to that which occurs in those plants. The novel finding of sex change in scleractinian corals reinforces the important role of reproductive plasticity in determining the evolutionary success of the Phylum Cnidaria

Multiple sex change in consecutive years



***Herpolitha limax* : Sperm ejection; Sesoko, 14 .08.2014**

Examples:

Y. Loya and K. Sakai (2008). Bidirectional sex change in mushroom corals. ***Proc. Roy. Soc. Biol. B*** 275:2335-3343.

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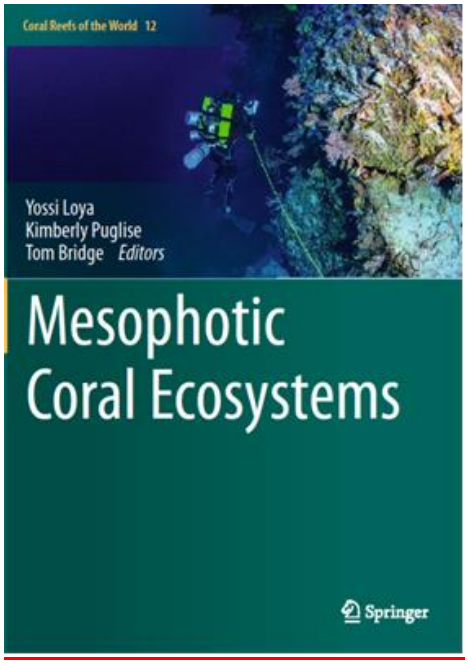
Eyal-Shaham, Gal Eyal, Saki Harii, Kazuhiko Sakai, Fredric Sinniger, Omri Bronstein, Or Ben-Zvi, Tom Shlesinger, & **Yossi Loya (2019)**. Repetitive sex change in the stony coral *Herpolitha limax* across a wide geographic range ***Sci. Rep***. 9:2936

Yossi Loya **Tel Aviv University**

Mesophotic Coral Ecosystems (MCEs; 30-120 m depth)

Mesophotic coral ecosystems (MCEs) are unique tropical and subtropical ecosystems characterized as light-dependent reef communities typically found at depths ranging from 30-40 m and extending to over 150 m in clear waters. This book provides the first comprehensive synthesis of the state of knowledge about MCEs worldwide. It also highlights how much we still have to learn. We invited authors to submit manuscripts focused on identified topics, with the co-authors of their choosing. Each manuscript underwent technical review by scientific and management experts to ensure its scientific integrity. The peer-review process consisted of over 200 individual reviews that were used by the authors to improve their manuscripts.



Examples:

Eyal G, J. Wiedenmann, M. Grinblat, C. D'Angelo, E. Kramarsky-Winter, T. Treibitz, O. Ben-Zvi, Y. Shaked, T. B. Smith, S. Harii, V. Denis, T. Noyes, R. Tamir and **Y. Loya (2015)**. Spectral Diversity and Regulation of coral fluorescence in a mesophotic reef habitat in the Red Sea. **PLoS ONE 10(6): e0128697.**

Eyal G, Eyal-Shaham L, Cohen I, Tamir R, Ben-Zvi O, Sinniger-Harii F and **Y. Loya (2016).** *Euphyllia paradivisa*: A successful mesophotic coral in the northern Gulf of Eilat/Aqaba, Red Sea. ***Coral Reefs***, 35:91–102

Eyal-Shaham L, Eyal G, Tamir R, **Loya Y** (**2016)** Reproduction, abundance and survivorship of two *Alveopora* spp. in the mesophotic reefs of Eilat, Red Sea. ***Sci. Rep.***DOI: 10.1038/srep20964

Feldman B., T. Shlesinger and **Y. Loya (2018).** Mesophotic coral-reef environments depress the reproduction of the coral *Paramontastraea peresi* in the Red Sea ***Coral reefs*** 37:201–214.

Shlesinger, T., M Grinblat, H Rapuano, T Amit, **Y Loya (2018).** Can mesophotic reefs replenish shallow reefs? Reduced coral reproductive performance casts a doubt.

Loya Y, Puglise KA, Bridge TCL (eds) Mesophotic Coral Ecosystems. Coral Reefs of the World Vol.12. Springer, New York 1005 p.

Eyal Gal, Itay Cohen, Lee Eyal-Shaham, Or Ben-Zvi, Yaron Tikochinsky and **Yossi Loya** (**2019**). Photoacclimation and induction of light-enhanced calcification in the mesophotic coral *Euphyllia paradivisa*. ***Royal Society Open Science*** 6:180527

Eyal G, Raz Tamir, Nati Kramer, Lee Eyal-Shaham and **Yossi Loya (2019).** How Mesophotic Coral Ecosystems vary geographically. The Red Sea: Israel. In: **Loya Y**, Puglise KA, Bridge TCL (eds) Mesophotic Coral Ecosystems of the world, Springer, New York**.** pp 199-214

Shlesinger T. & **Yossi Loya (2019).** Sexual reproduction of scleractinian corals at mesophotic coral ecosystems vs. shallow reefs. In: **Loya Y**, Puglise KA, Bridge TCL (eds) Mesophotic Coral Ecosystems of the world, Springer, New York. pp. 653-666

Ben-Zvi Or, Gal Eyal and Yossi Loya **(2019)** Response of fluorescence morphs of the mesophotic coral *Euphyllia paradivisa* to ultra-violet radiation ***Sci. Rep.*** 9: 9245

Raz Tamir, Gal Eyal, Netanel Kramer, Jack H. Laverick and **Yossi Loya (2019).** Light environment drives the shallow to mesophotic coral community transition ***Ecosphere*** 10(9)1-18

Kramer Netanel, Raz Tamir, Gal Eyal, **Yossi Loya (2020).** Coral morphology portrays the spatial distribution and population size-structure along a 5-100 m depth gradient . (***Front. Mar. Sci.*** 7:615

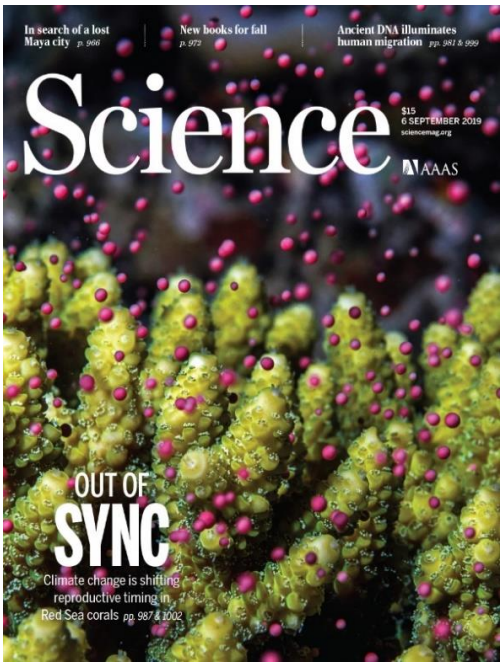
Laverick Jack, Raz Tamir , Gal Eyal and **Yossi Loya** (**2020**). A Generalized Light-Driven Model of Community Transitions along Coral Reef Depth Gradients. ***Global Ecol. Biog.*** 29: 1554-1564.

Tamir Raz, Or Ben-Zvi, Gal Eyal, Netanel Kramer and **Yossi Loya (2020).** Reciprocal transplantation between shallow and mesophotic stony corals. ***Mar. Environ. Res.*** 161: 105035

Coral reproduction and community structure: long-term studies

We quantified coral spawning intensity during four annual reproductive seasons, alongside laboratory analyses at the polyp, colony, and population levels, and we demonstrate that, compared with historical data, several species from the Red Sea have lost their reproductive synchrony. Ultimately, such a synchrony breakdown reduces the probability of successful fertilization, leading to a dearth of new recruits, which may drive aging populations to extinction (***Science* 2019**).

Historically, marine populations were considered to be interconnected across large geographic regions due to the lack of apparent physical barriers to dispersal, coupled with a potentially widely dispersive pelagic larval stage. We performed a series of ex-situ and in-situ experiments using coral larvae of three brooding species from contrasting shallow- and deep-water reef habitats. We show that their settlement success, habitat choices, and subsequent survival are substantially influenced by parental effects in a habitat dependent manner Local adaptations and parental effects alongside larval selectivity and phenotype-environment mismatches combine to create invisible semipermeable barriers to coral dispersal and connectivity, leading to habitat-dependent population segregation (***Communication Biology*, 2021**).



Photos: Tom Shlesinger

Examples:

Shlesinger Tom and **Yossi Loya (2016)** Recruitment, mortality and resilience potential of scleractinian corals at Eilat, Red Sea. ***Coral Reefs*** 35:1357-1368

Rapuano H., I. Brickner, T. Shlesinger, E. Meroz-Fine, R. Tamir and Y. Loya (2017). Reproductive strategies of the coral *Turbinaria reniformis* in the northern Gulf of Aqaba (Red Sea). ***Scientific Reports*** 7: 42670

Shlesinger, T., M.Grinblat, H. Rapuano, T. Amit, and **Y. Loya (2018).** Can mesophotic reefs replenish shallow reefs? Reduced coral reproductive performance casts a doubt. ***Ecology*** 99: 421-437

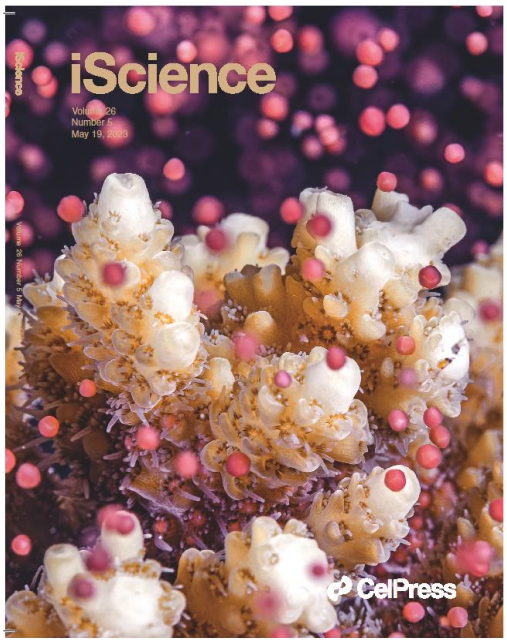
Shlesinger T and **Y. Loya (2019)** Breakdown of spawning synchrony silently threatens coral persistence. ***Science*** 365:1002-1007

Shlesinger T. & **Yossi Loya (2019).** Sexual reproduction of scleractinian corals at mesophotic coral ecosystems vs. shallow reefs. In: **Loya Y**, Puglise KA, Bridge TCL (eds) Mesophotic Coral Ecosystems of the world, Springer, New York, pp. 653-666

Shlesinger T. and **Yossi Loya (2021)** Parental effects create invisible barriers to coral dispersal ***Communications Biology***, 4:202

Coming of age: Onset of coral reproduction is determined by age rather than size

Constraints on organisms possessing a unitary body plan appear almost absent from colonial organisms. Like unitary organisms, however, coral colonies seemingly delay reproduction until reaching a critical size. Elucidating ontogenetic processes, such as puberty and aging are complicated by corals' modular design,where partial mortality and fragmentation lead to distortions in colony size-agerelationships. We explored these enigmatic relations and their influence on reproduction by fragmenting sexually mature colonies of five coral species into sizes below the known size at first reproduction, nurturing them for prolonged periods, and examining their reproductive capacity and trade-offs between growth rates and reproductive investment. Most fragments were reproductive regardless of their size, and growth rates hardly affected reproduction. Our findings suggest that once the ontogenetic milestone of puberty is reached, corals retain reproductive capacity irrespective of colony size, highlighting the key role that aging may have in colonial animals, which are commonly considered non-aging.



Hanna Rapuano, Tom Shlesinger, Lachan Roth, Omri Bronstein and **Yossi Loya (2023**). Coming of age: Onset of coral reproduction is determined by age rather than size. ***iScience***. e 26, 10653

Grinblat M., L. Eyal-Shaham, G. Eyal, O. Ben-Zvi, S. Harii, M. Morita, K. Sakai, M. Hirose, D. J. **Miller and Y. Loya (2023)** Energy allocation trade-offs as a function of age in fungiid corals**.** ***Front. Mar. Sci.*** 10:1113987.