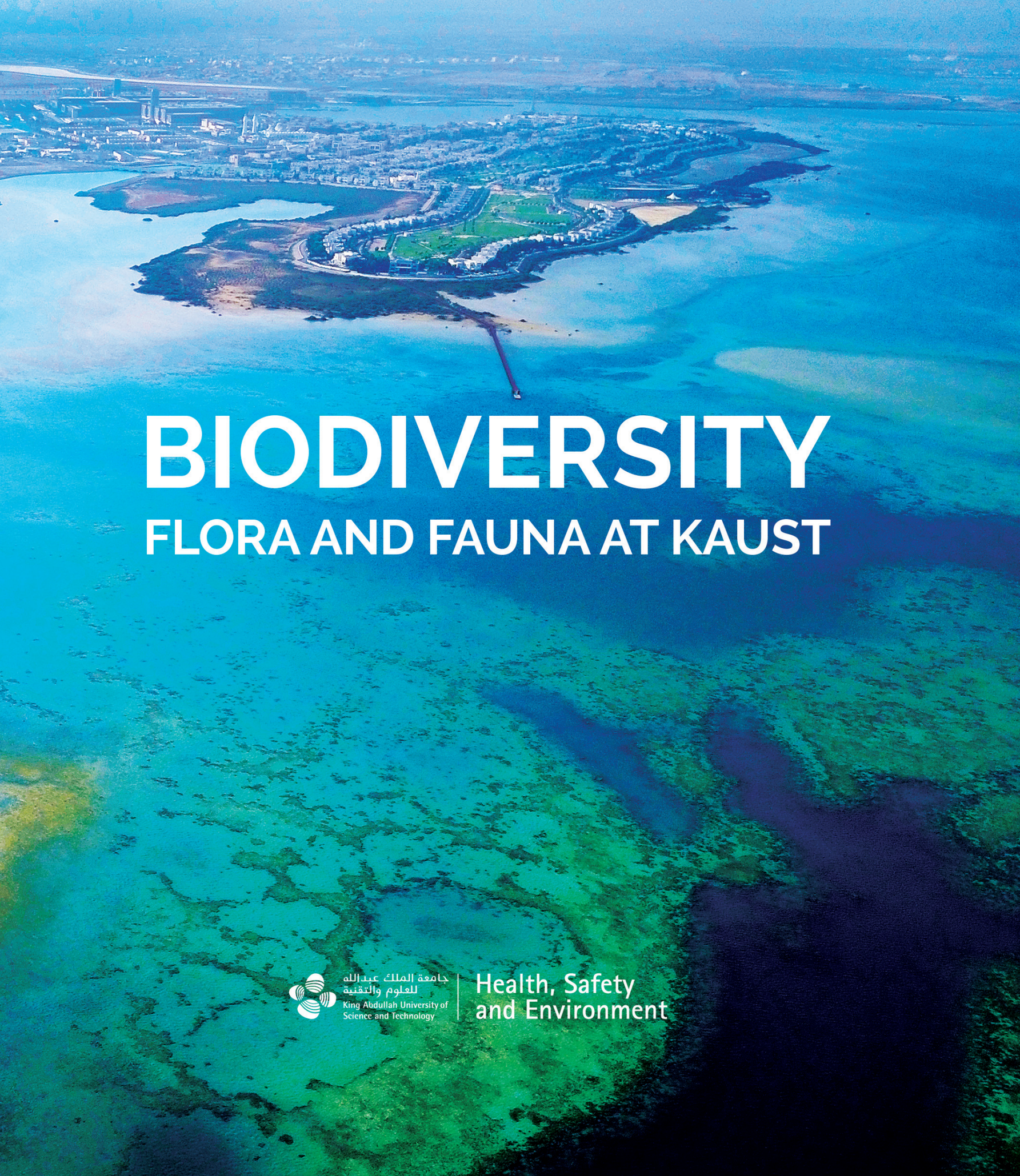
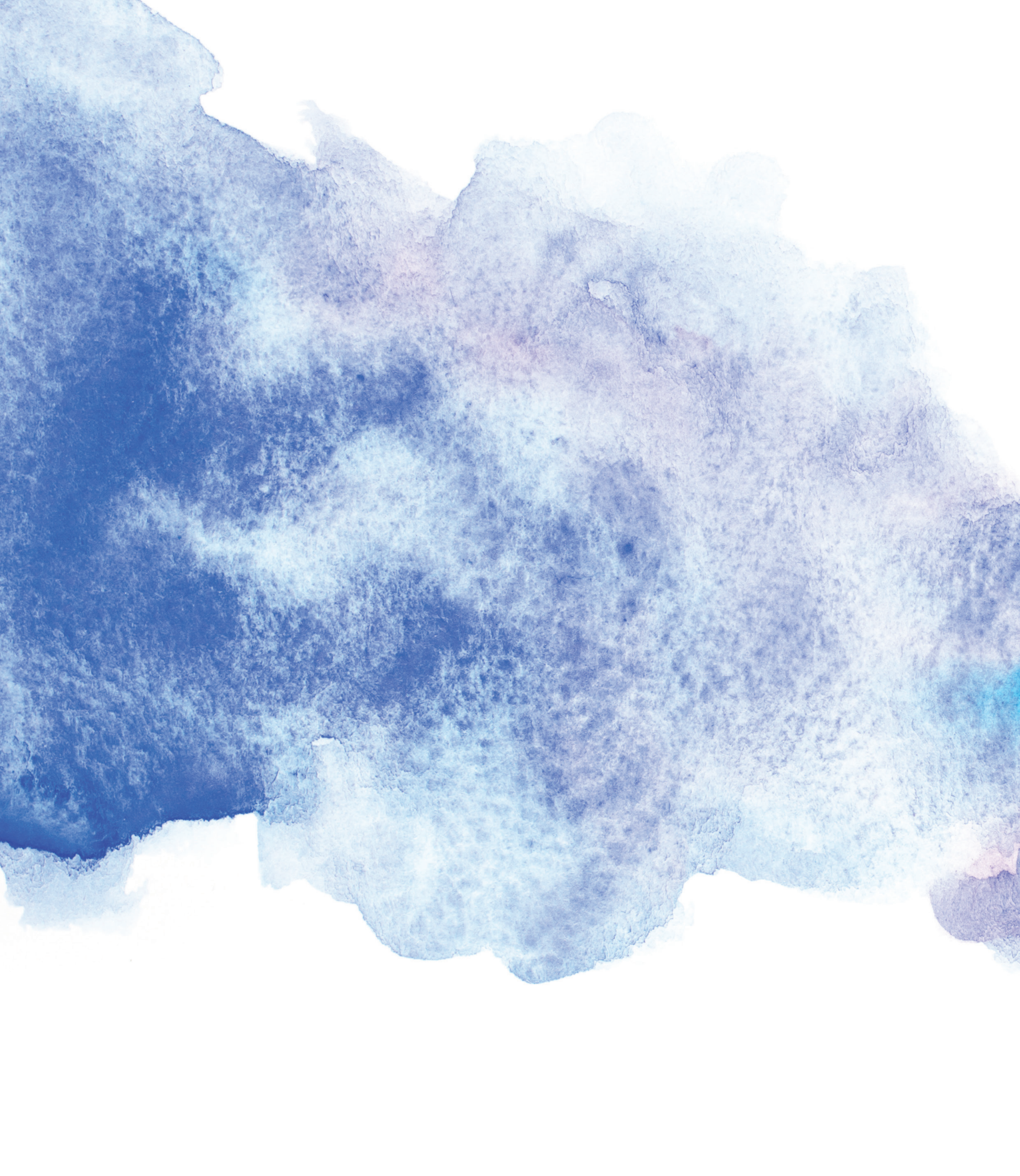


BIODIVERSITY

FLORA AND FAUNA AT KAUST

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

Health, Safety and Environment





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The proceeds from this book will support nature convervation and biodiversity causes.

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FLORA AND FAUNA AT KAUST

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King Abdullah University of Science and Technology
Health, Safety and Environment



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PREFACE

Ecology is the study of living organisms and their interactions with each other and with their environment. Another way to understand ecology is to consider the question, "why do organisms live where they do?" At the core of ecology is biodiversity, the variety of living things in any environment. Understanding what drives patterns of this variety is key to successful management and conservation wherever humans interact with the environment. At the King Abdullah University of Science and Technology (KAUST), we study biodiversity and habitats because general knowledge about Red Sea biodiversity, including the coastal areas adjacent to KAUST, remains sparse. While a few groups of organisms are well-studied, such as some fish families, the less conspicuous marine invertebrate groups (such as those pictured here) are poorly known. In fact, we are identifying new species from the Red Sea on a regular basis.

KAUST has played a significant role in advancing scientific knowledge about regional biodiversity. Nonetheless, detailed, high-resolution, site-focused studies remain uncommon. Work undertaken by our colleagues in KAUST's Health, Safety and Environment (HSE) Department to catalog the species found in the habitats within KAUST's boundaries is therefore an important effort. The HSE team has sought to identify aquatic, terrestrial, and aerial species, many of which are beautifully captured in the following pages, to establish baseline data about the flora and fauna at KAUST. Their catalog will allow the University to monitor any impacts it has on the surrounding environment and to make sensible habitat conservation decisions as the University grows.

We are fortunate to live on the shore of the Red Sea, surrounded by beautiful natural diversity. I hope that the brief glimpse of the amazing flora and fauna at KAUST provided in this book inspires you to get outside or underwater to look at the life around you.

Michael Berumen
Director, KAUST Red Sea Research Center





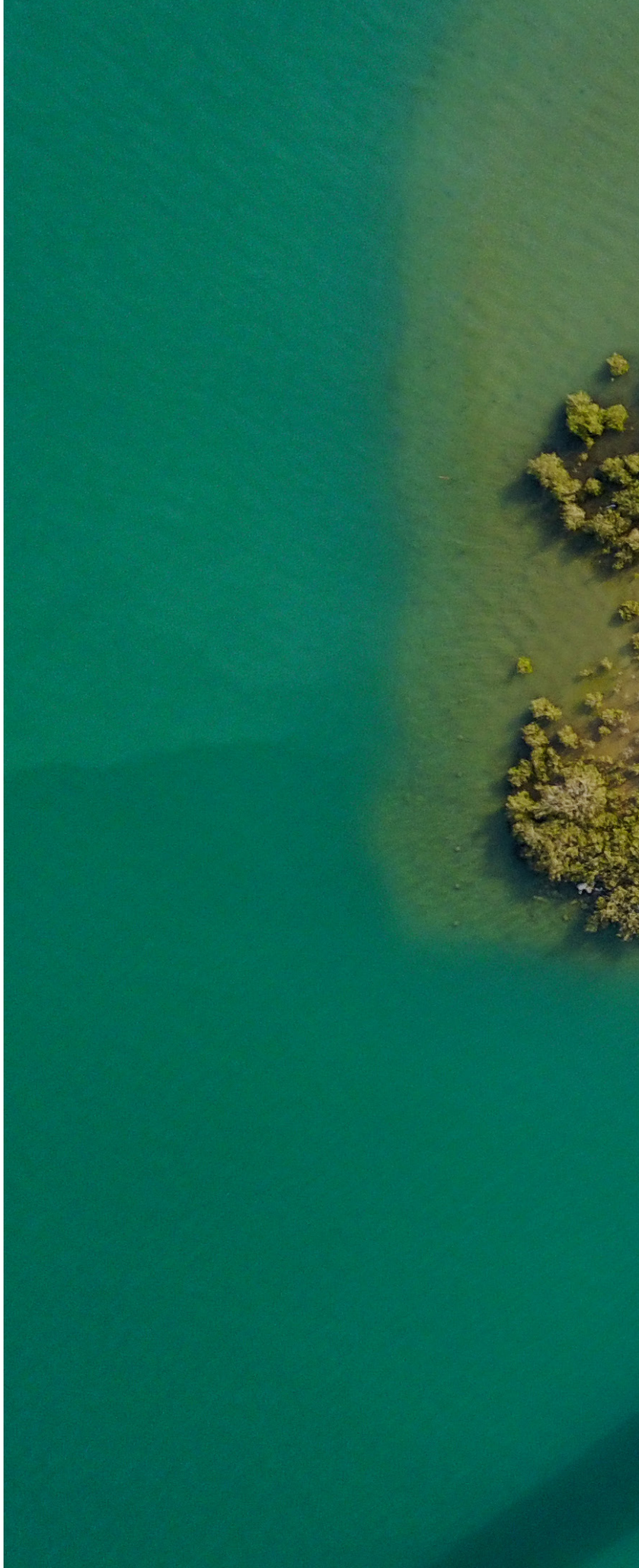
FOREWORD

The unique geographic location of King Abdullah University of Science and Technology (KAUST) on the shores of the Red Sea provides ample opportunity for biodiversity research and community engagement. Beyond producing cutting-edge academic research on the local environment, KAUST seeks to be a "living laboratory" for environmental well-being. Indeed we have already secured a nature conservation area larger than 150 hectares near the King Abdullah Monument; expanded mangrove habitat to over 90 hectares; identified 250 bird species that either reside in or pass through KAUST while on migration; and counted more than 180 plant species spread across about 1.3 million square meters. We are indeed fortunate to be stewards of this remarkable natural environment.

Our University's environmental stewardship policy is based on the principle of collaboration: everyone must contribute to protecting these amazing resources. This beautiful book, which showcases the biodiversity in our own backyard, is the product of active collaborations between academic and administrative departments, as well as the KAUST community at large.

As we celebrate the University's tenth anniversary, I am delighted to invite you to enjoy this beautiful collection of photographs on the flora and fauna at KAUST. I hope that this book, and the efforts to catalog all members of our natural environment, will serve as a springboard for identification, conservation, enhancement and appreciation of our precious place in the world.

Tony F. Chan
KAUST President






STOP
STOP
STOP





INTRODUCTION

Located on the west coast of Saudi Arabia, King Abdullah University of Science and Technology (KAUST) is home to a natural ecosystem teeming with life. Over 250 species of birds call KAUST home throughout the year. For some, the University provides a year-round home, while for others it is a place to rest and feed during their annual migration. Birds benefit from both the natural ecosystem that was here before the University was built and the man-made environment of KAUST.

But it is in the coastal waters and wetlands where biodiversity truly abounds. Mangrove forests and other salt-tolerant coastal plants play an important role in protecting coastlines from erosion; they are among the most effective natural habitats for sequestering carbon. With one "foot" on land and one in the water, these amphibious plants provide a fertile home for a variety of fish, crabs, snails, snakes, lizards, and birds. Thanks to local conservation efforts, the mangrove forests at KAUST have increased by over 20 percent during the last decade. The University now hosts more than 92 hectares (920,000 square meters) of mangroves.



Moving offshore, in the coastal waters around KAUST, we find coral reefs and beds of seagrass and macroalgae, or seaweed. This marine ecosystem provides important shelter and nursery areas for fish and invertebrates. The wilderness areas of KAUST serve as a living laboratory for scientists exploring new ways to conserve coastal marine environments. They also enrich the daily lives of over 7000 people who call KAUST home. By continuing to develop the University while protecting local ecosystems, we can safeguard this rich natural habitat for years to come.

The mission of the Health, Safety and Environment Department (HSE) at KAUST is to promote and protect local biodiversity through identification, conservation, enhancement and appreciation. In an effort to protect the surrounding natural habitat, HSE has established nature conservation areas, environmental permitting and monitoring processes, as well as community nature appreciation and engagement programs. These efforts are yielding some positive trends including increases in the size of the mangrove forest, a thriving bird population and keen and participatory community members.






سوق السمك بشول



THUWAL

The town of Thuwal is located about 100 km north of Jeddah, the commercial capital of Saudi Arabia. It is well known for its artisanal fishing industry, sea food eateries, serene corniche for the locals, and home to KAUST. Local fishermen mostly rely on traditional fishing practices including use of small fishing boats and shorter day trips. Their knowledge of the sea, fishing practices and how marine biodiversity contributes to their livelihood is always inspiring.

The guiding principles of the University's Environmental Stewardship Policy call for "actively encouraging the University's environmental public service within the surrounding local communities". KAUST continues to undertake notable environmental awareness engagement with Thuwal schools through exchange visits, events participation and information sharing.

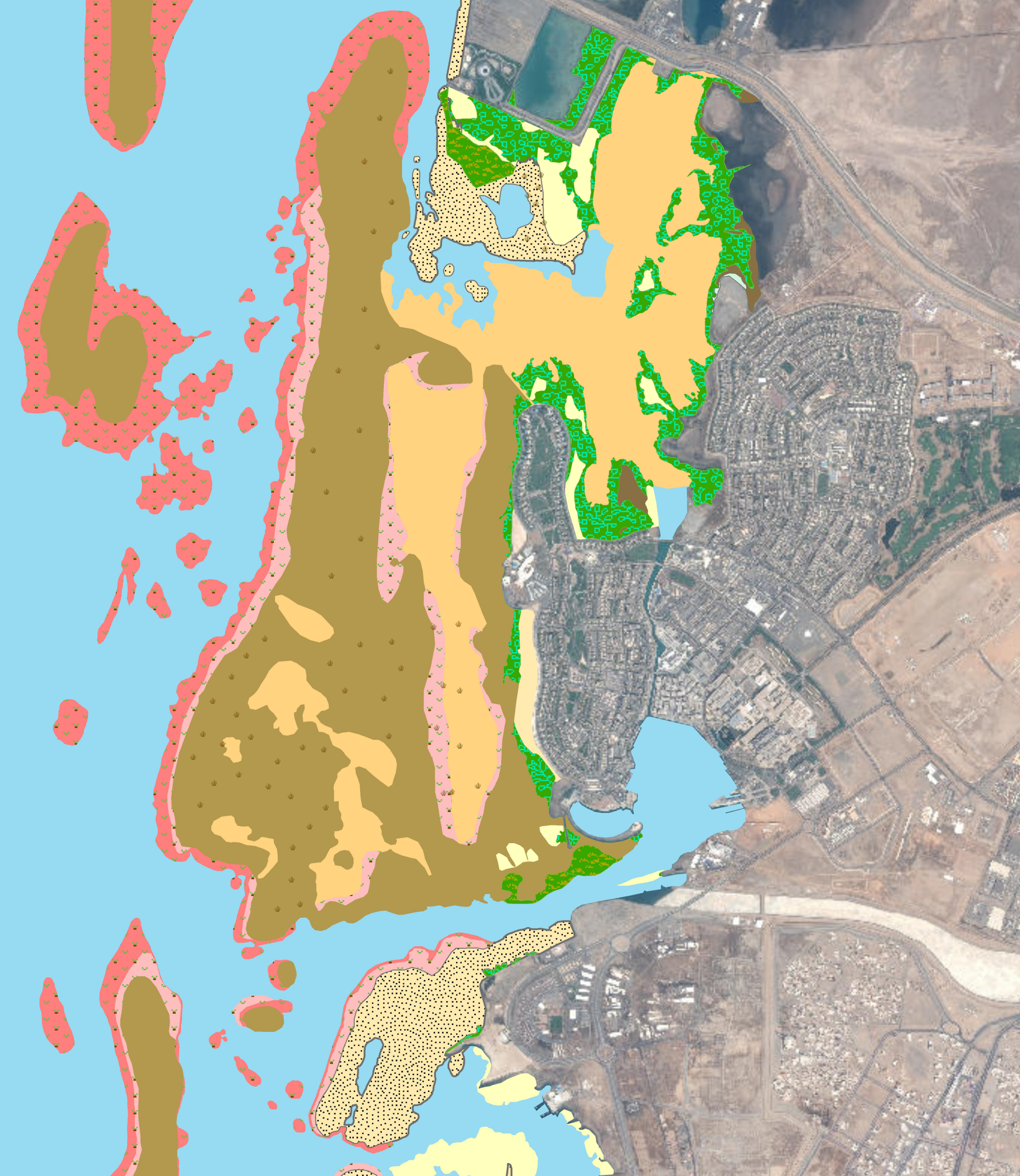

YAMAHA
75
١٧٧١٩


YAMAHA
الضمان الاجتماعي



MARINE

Marine habitat map
Coral reefs
Coral bleaching
Seagrasses and algae
Marine fauna
Mangroves



MARINE HABITAT MAP

KAUST is located on the shores of the Red Sea, surrounded by a relatively undisturbed marine ecosystem. KAUST faculty and students teach and study the biodiversity of the University's natural surroundings. These efforts are led by the Red Sea Research Center.

Members of the KAUST community outside the Red Sea Research Center also recognize the importance of this unique marine ecosystem, considering it to be an integral element of the University's educational and social responsibility mission. In fact, the significance of the marine habitat is highlighted in the University's Environmental Stewardship Policy, which states that "protecting the precious marine environment surrounding the University" is an important goal for the University.

A baseline survey of the marine environment led by HSE with special emphasis on the coastal areas adjacent to the University has identified a variety of habitats within the KAUST shoreline and shallow waters, including intertidal sand and mudflats, mangroves, seagrass, sabkha, sandy and over-rock shores, microalgae and coral communities in the lower intertidal and upper subtidal zones.

LEGEND

- Seagrass
- Coral Reef
- Mangrove
- Seagrass Bed
- Macroalgae
- Halophyte
- Intertidal Mudflat
- Lagoon Sand
- Intertidal Sandflat
- Sandy Shore
- Shallow Water Sand
- Deep Water Sand
- Sand Over Rock





Shallow water areas around KAUST shoreline.





CORAL REEFS

Corals are often known as "the rainforests of the sea," and the reefs they form are some of the most biodiverse ecosystems on earth. Corals form a delicate habitat that provides food and shelter for many living organisms that depend on the reef ecosystem for their survival. Furthermore, coral reefs host enormous educational and recreational activities.

A study of marine areas around KAUST identified around 181 species of coral. The most commonly recorded species belong to the Acropora, Dipsastrea (formerly Favia), Montipora, Goniopora and Favites genera. The study also recorded intact and diverse coral reefs slightly away from KAUST in the open waters of the Red Sea.

STAGHORN CORALS
ACROPORIDAE, *Acropora*

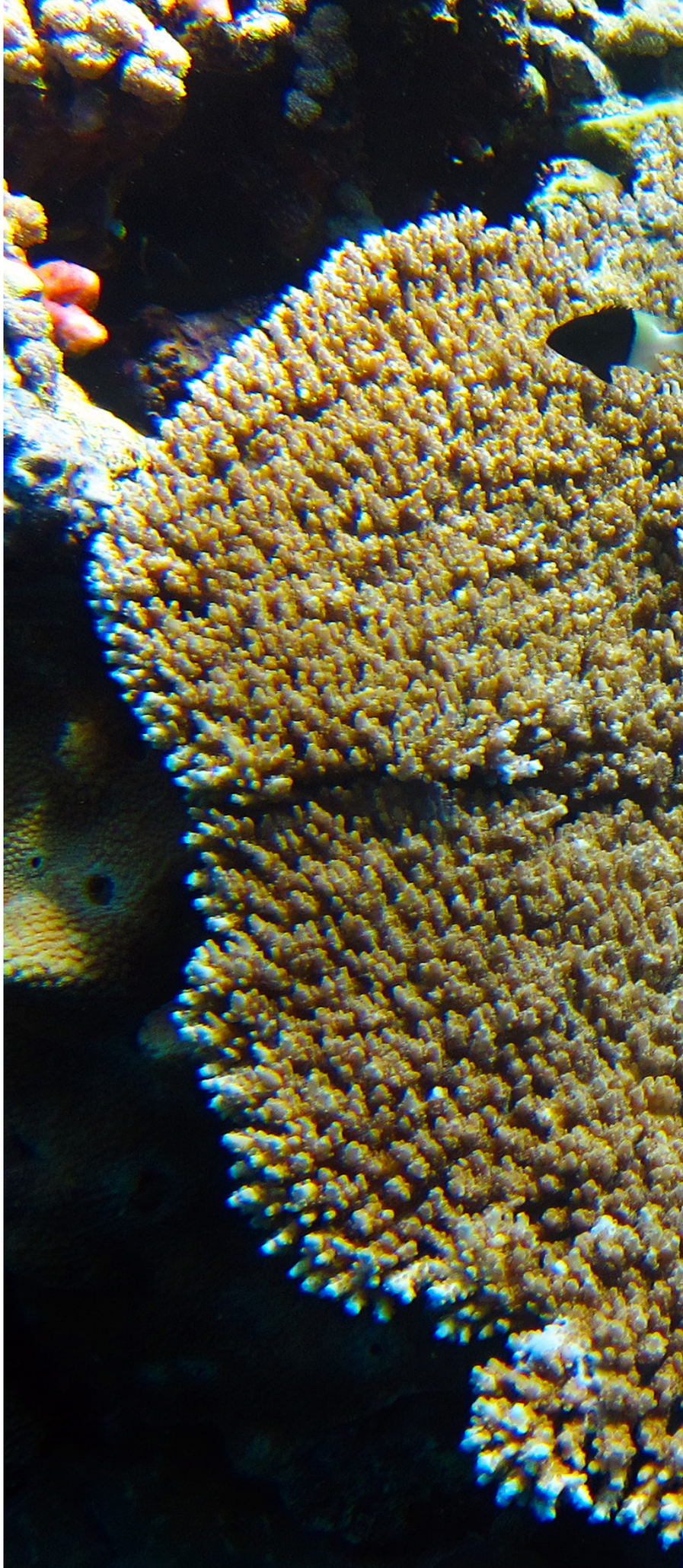
▶ **Right** A tabular colony of *Acropora cytherea*

▼ **Top left** *Acropora secale*

▼ **Bottom left** *Acropora variolosa*















ANEMONES families Stichodactylidae and Actiniidae

◄ **Left Page** Carpet anemone with anemonefish ▲ **Above** Magnificent anemone

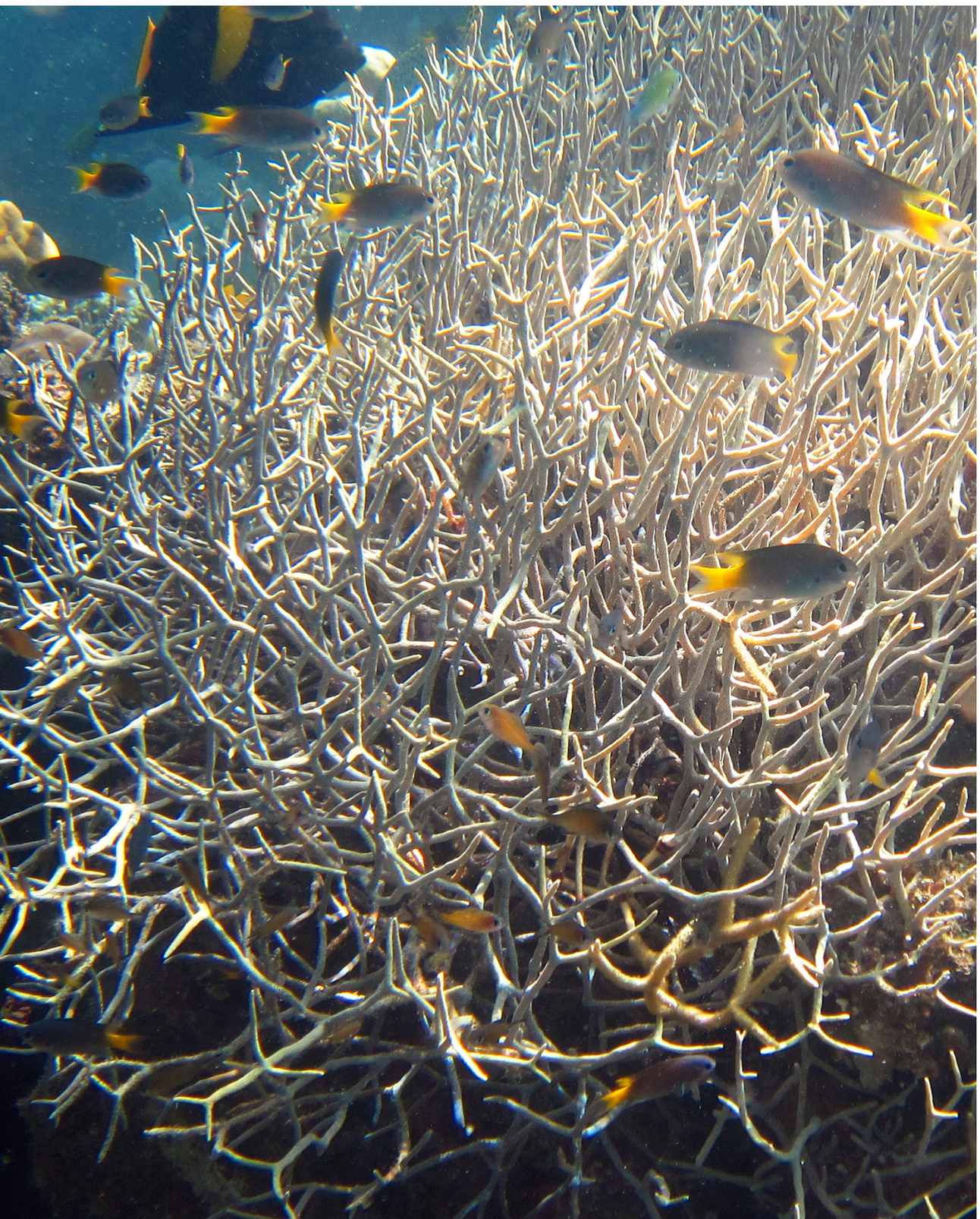
▼ **Left Below** Magnificent anemone ▼ **Right Below** Bubble anemone



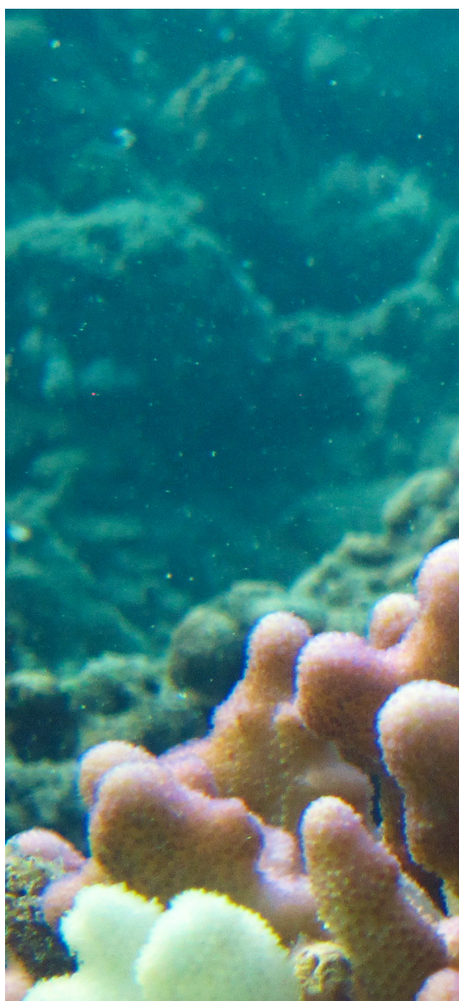


COMPLEX BRANCHING HABITAT

- ▸ **Right Top** Finely branching growth forms of corals, algae, and sponges provide important habitat for small fishes and countless invertebrates
- ▸ **Right Bottom** *Stylophora pistillata*
- ▾ **Left Bottom** Damselfishes and angelfishes seek refuge within the branches of soft and hard corals, venturing out to forage

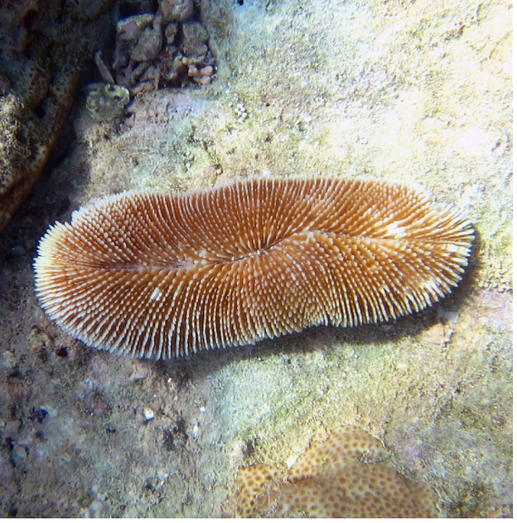














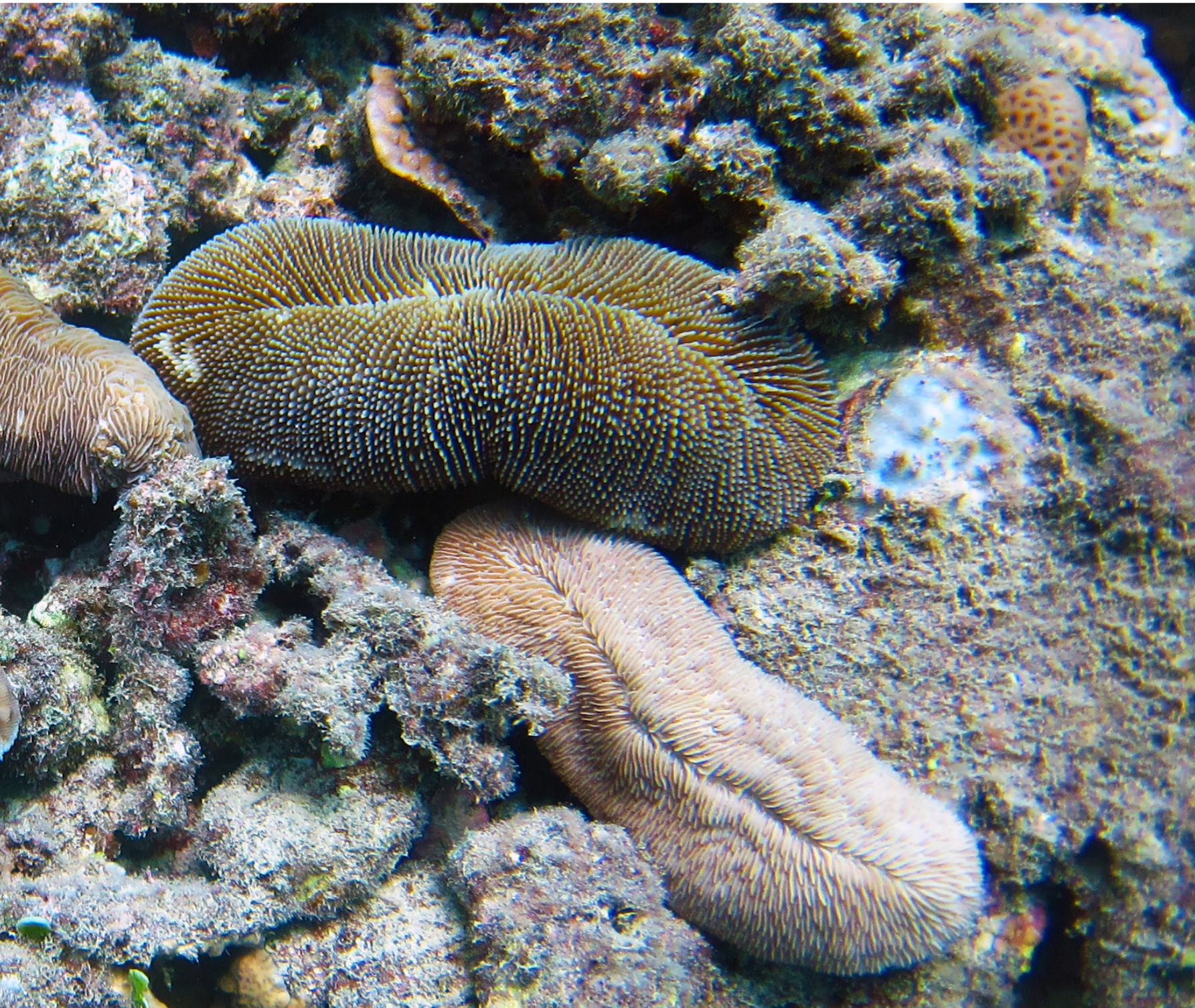


MUSHROOM CORALS Fungiidae

◂ **Left Top** *Ctenactis echinata*

◂ **Right Top** *Fungia fungites*

▾ **Bottom** Mushroom corals are among the only corals that can live unattached to the reef.
They can move (very slowly) and have an interesting tendency to aggregate with other mushroom corals.

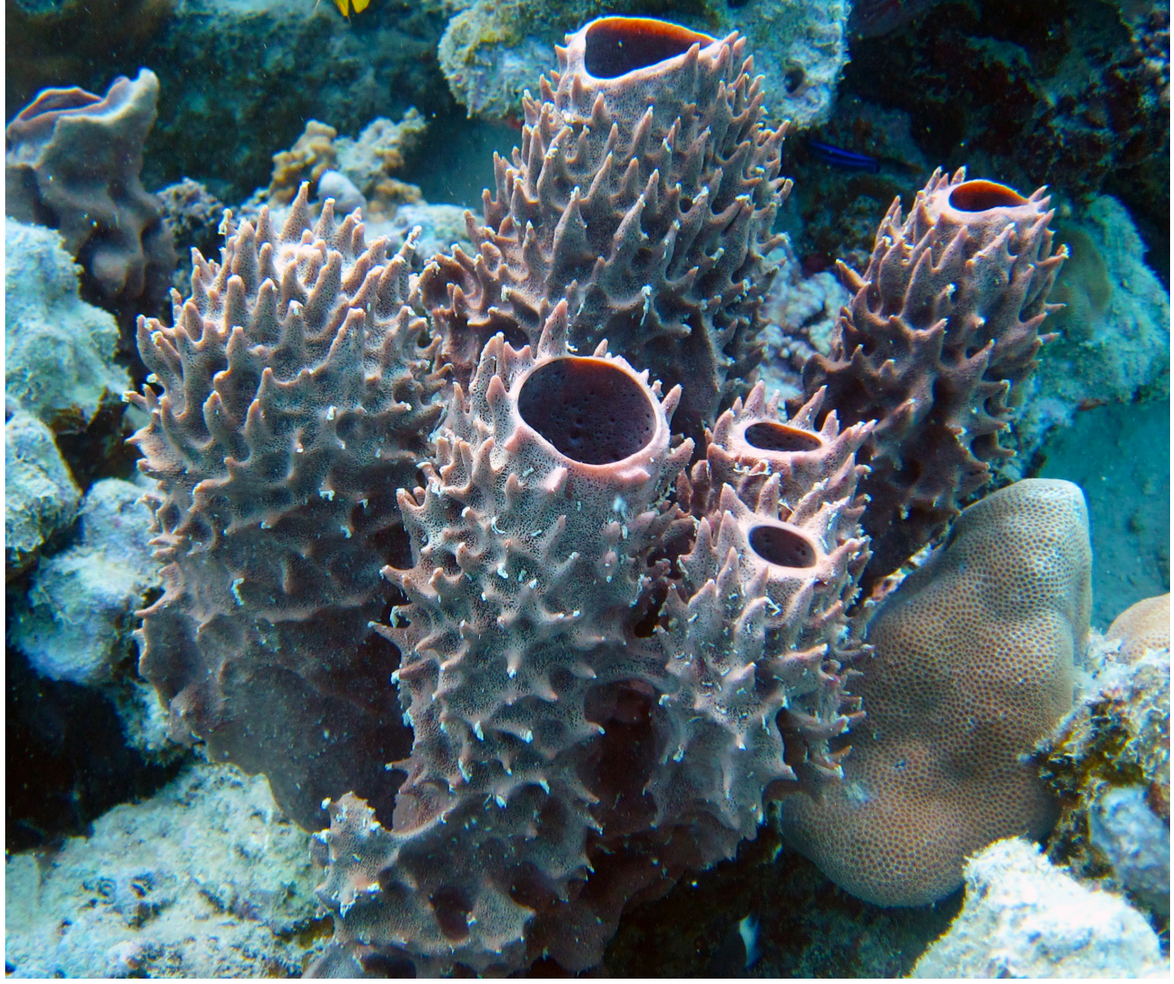


LEATHER CORALS
genus *Sarcophyton*

▸ **Right** Rough leather coral
▾ **Bottom** Slimy leather coral







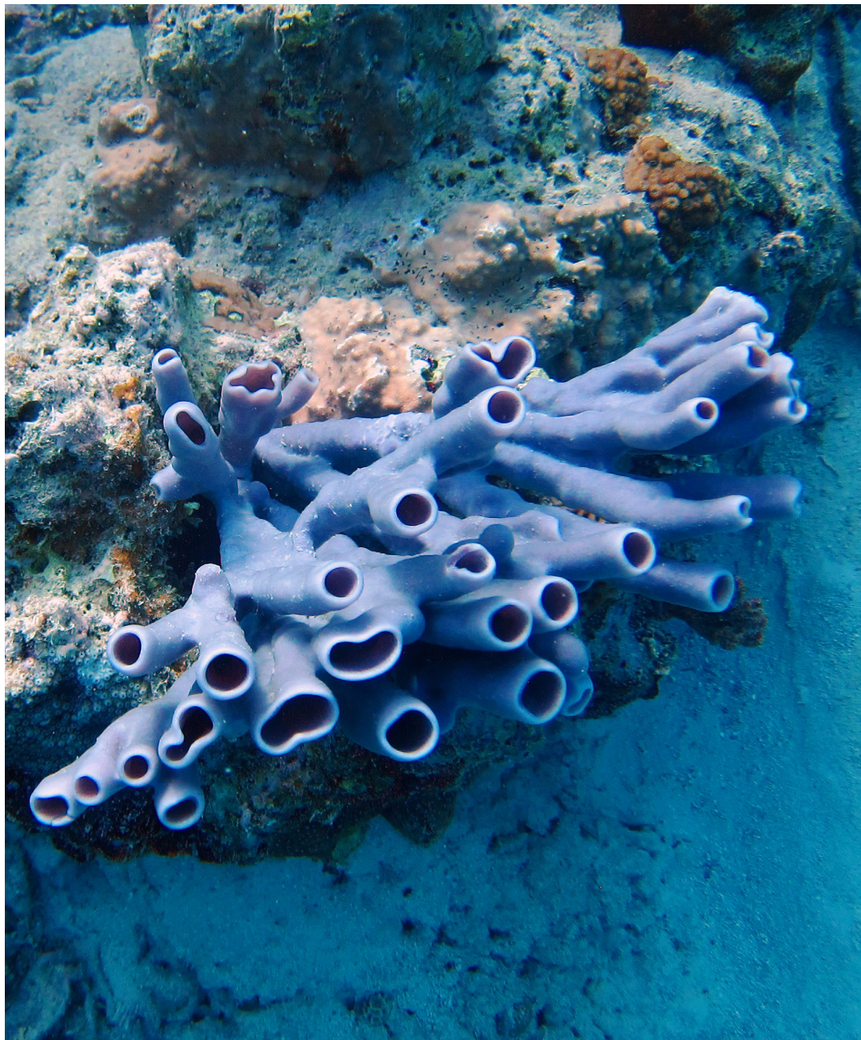
SPONGES Porifera

◂ **Left Top** Prickly tube-sponge,
Callyspongia crassa

▾ **Left Bottom** Red boring sponge,
Pione cf. *vastifica*

▾ **Right Bottom** Blue tubular sponge,
Haliclona sp.

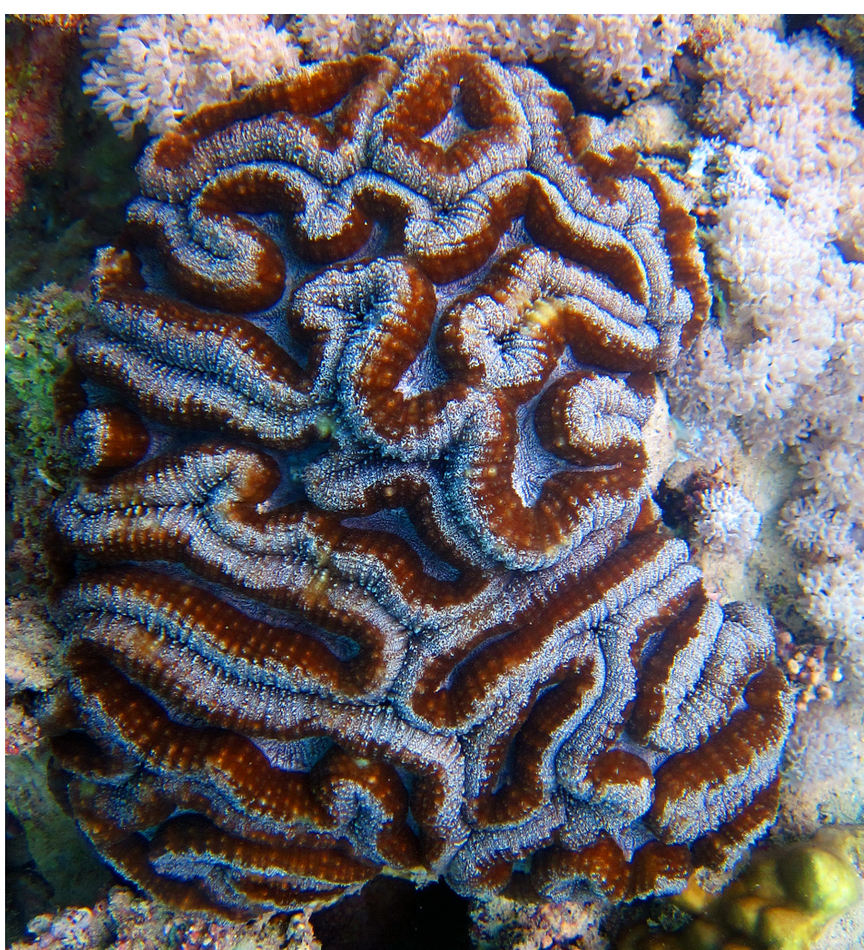




▲▼ ASCIDIAN, *Botryllus eilatensis*

▼ STONY CORAL, *Lobophyllia* sp.





▲ ASCIDIAN, *Didemnum* sp.

▼ FEATHER HYDROIDS, Plumulariidae



◂ **Left** Common clam,
Tridacna maxima

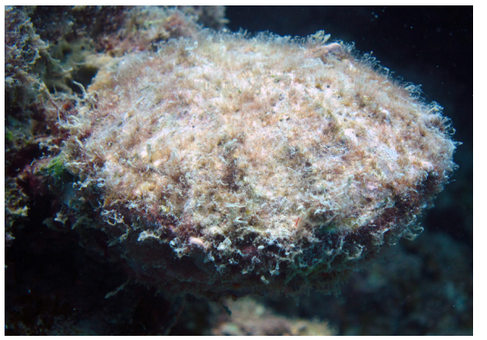
▾ **Right Top** Seba's spider conch,
Lambis truncata sebae

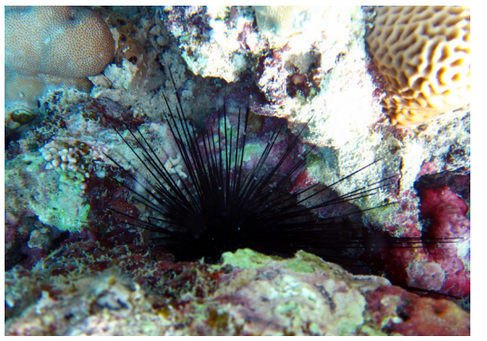
▾ **Right Middle** Pearl oyster,
Pinctada margaritifera

▾ **Right Bottom** Sea urchin,
Diadematidae











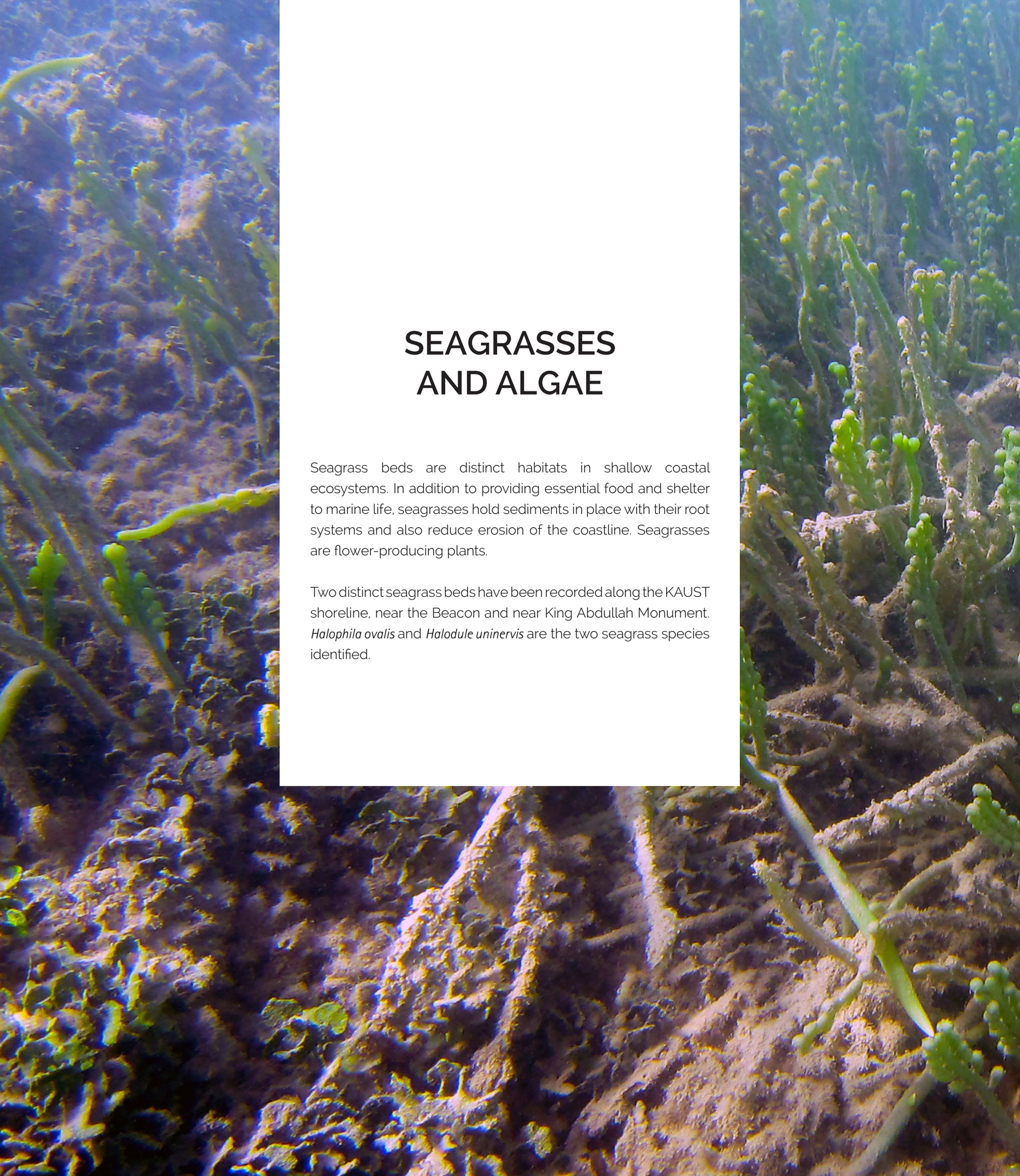


CORAL BLEACHING

Coral bleaching is a complex phenomenon that occurs when corals become stressed. Under such stressors as unusually high sea surface temperatures for prolonged periods, corals expel the algae that live within the coral tissue. Because these algae serve as the corals' main energy source, coral colonies turn a deathly white in the absence of the algae. If the adverse conditions continue, the corals experiences difficulties and die, in turn affecting the coral reef ecosystem that depends on healthy corals for survival.

Coral bleaching has the potential to reverse: algae may be able to return to the corals and help to revive and replenish the reef. However, if high temperatures and fluctuating nitrogen levels continue for an extended period, the corals cannot recover and they eventually die. With a recent rise in the incidence of coral bleaching occurring on reefs around the world, KAUST researchers are seeking to advance our understanding of the phenomenon and how to help corals survive in future.

To learn more about how KAUST researchers are innovating solutions to address global challenges, such as coral bleaching and climate change, visit KAUST Discovery (www.discovery.kaust.edu.sa). KAUST Discovery promotes the University's research by telling stories about the University's researchers and their scientific discoveries.



SEAGRASSES AND ALGAE

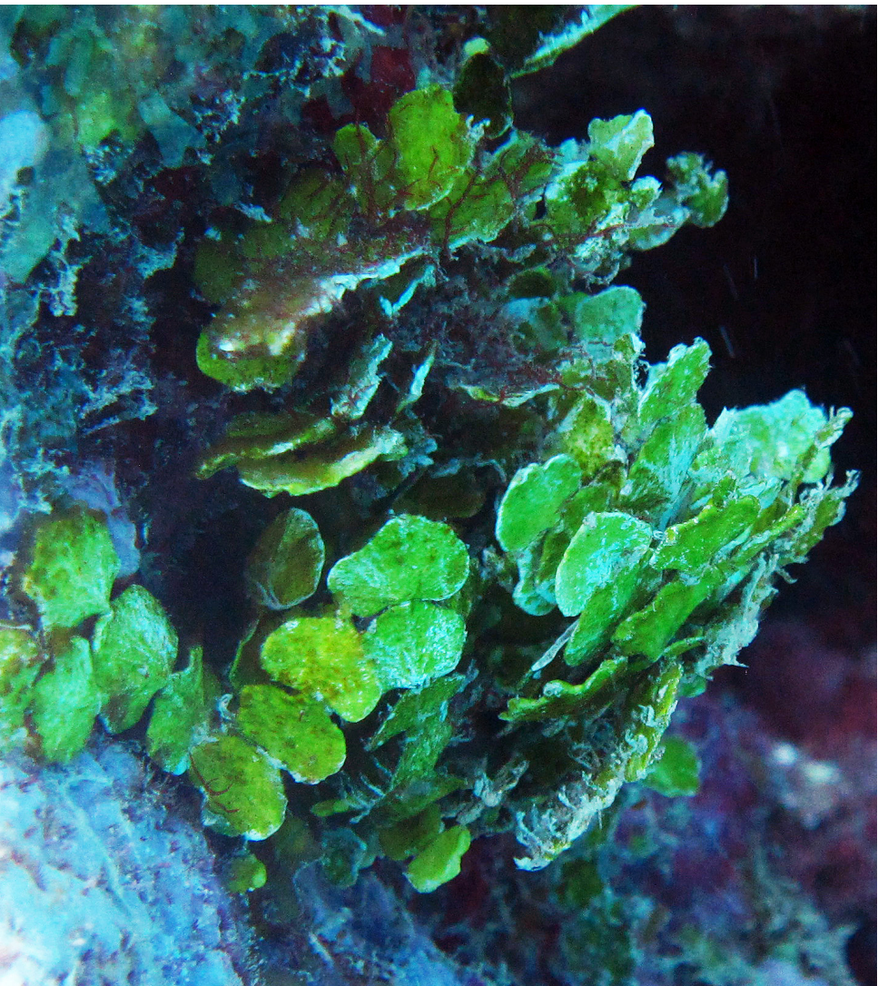
Seagrass beds are distinct habitats in shallow coastal ecosystems. In addition to providing essential food and shelter to marine life, seagrasses hold sediments in place with their root systems and also reduce erosion of the coastline. Seagrasses are flower-producing plants.

Two distinct seagrass beds have been recorded along the KAUST shoreline, near the Beacon and near King Abdullah Monument. *Halophila ovalis* and *Halodule uninervis* are the two seagrass species identified.

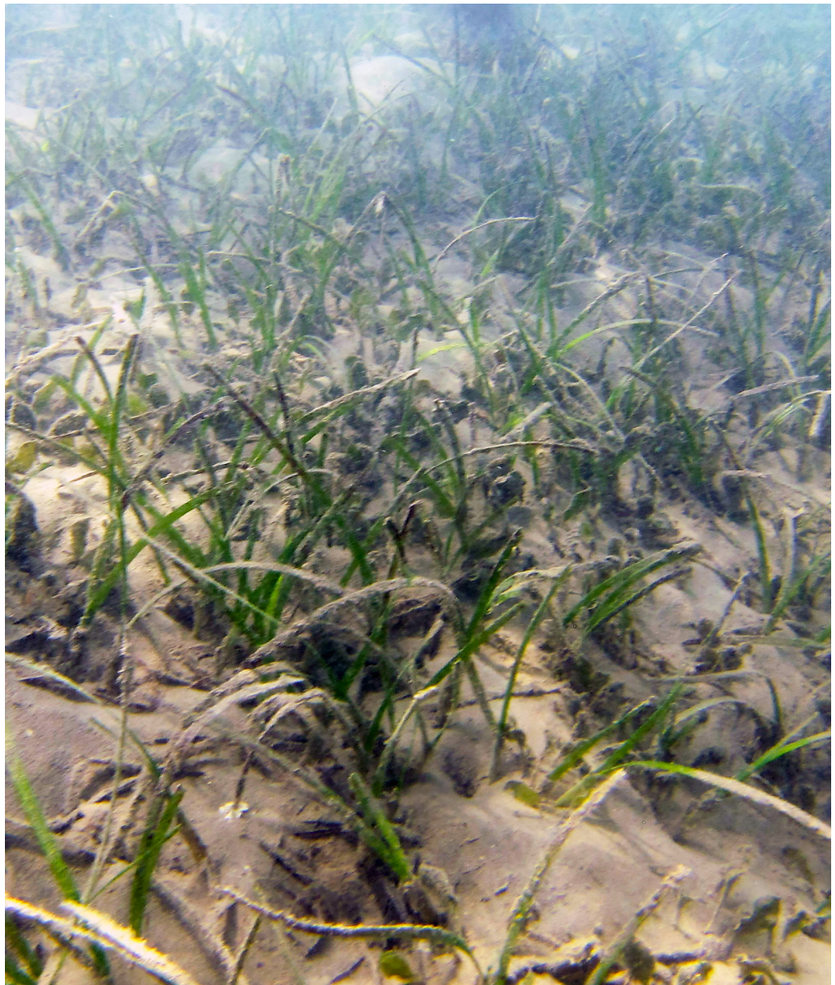


▲ **Clump seagrass**
Cymodocea serrulata

▼ **Macroalgea**
Halimeda



▼ **Ribbon seagrass**
Halodule univervis





▼ **Papillose laurencla**
Laurencia papillosa



▲ **Triangle turbinweed**
Turbinaria decurrens

▲ **Funnelweed**
Padina cf. *gymnaspora*



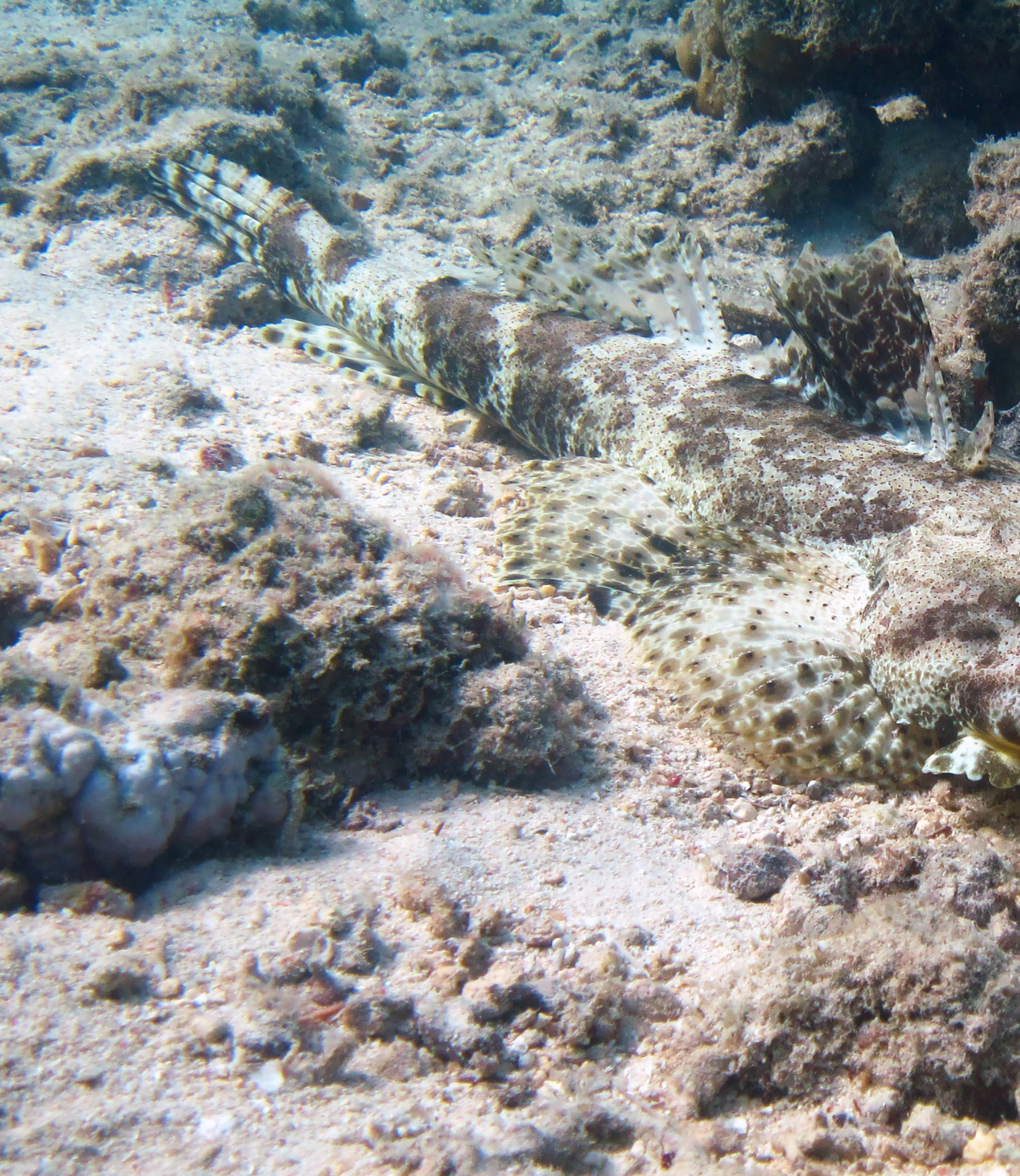


MARINE FAUNA

The diversity of fish found on reefs around KAUST is amazing. Species range from large predators, such as sharks, grouper, and barracuda that prey on other fish, to small and colorful fish, such as clownfish or angelfish that eat plankton, algae, and other small food items. These fish are vibrant in color and offer great opportunities to attract educational and recreational activities.

Around 136 species of fish have been recorded at reef sites around KAUST. Wrasses are the most predominant species followed by damselfish, parrotfish, butterflyfish, groupers and surgeonfish. A group of dolphins has also been observed around KAUST.





FLATHEADS AND SCORPIONFISHES

◂ **Left** Indian Ocean crocodilefish *Papilloculiceps longiceps*

▾ **Bottom** Common lionfish *Pterois miles*







GROUPERS

▲ **Left** Coral hind *Cephalopholis miniata*

▲ **Right** Summana grouper *Epinephelus summana*



SWEETLIPS

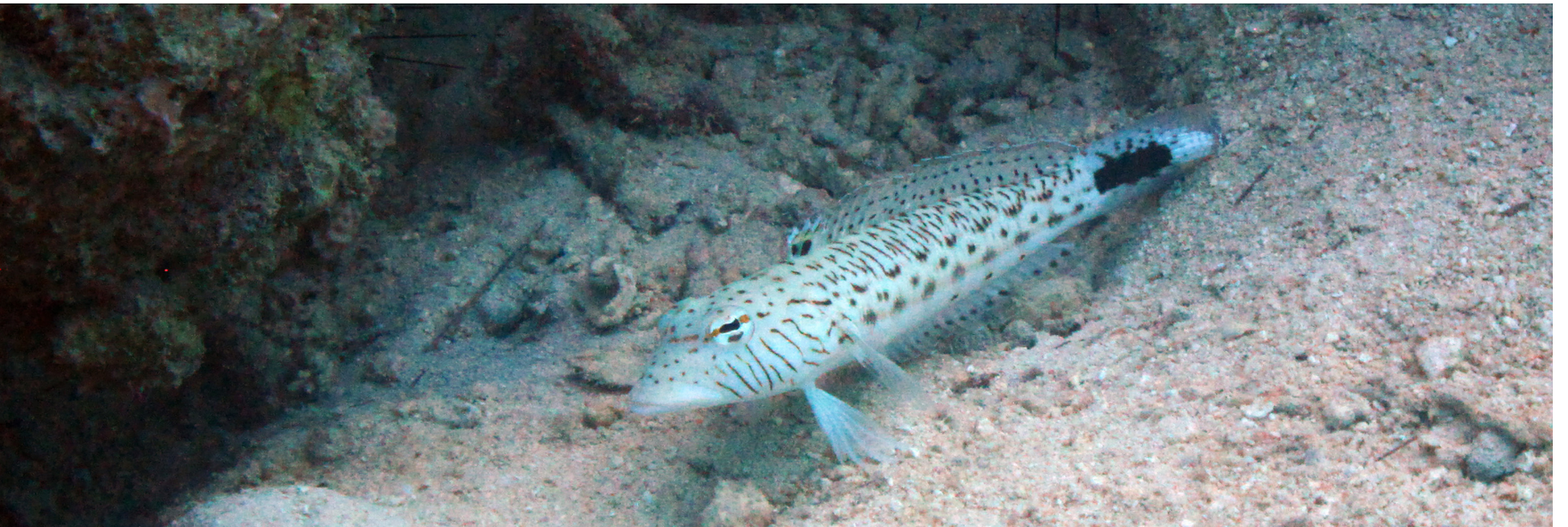
▲ **Blackspotted sweetlips** *Plectorhinchus gaterinus*

STINGRAYS

▲ **Bluespotted stingray** *Taeniura lymma*

SANDPERCHES

▼ **Speckled sandperch** *Parapercis hexophthalma*





SEA TURTLES

▲ **Hawksbill turtle** *Eretmochelys imbricata*





















CRAB

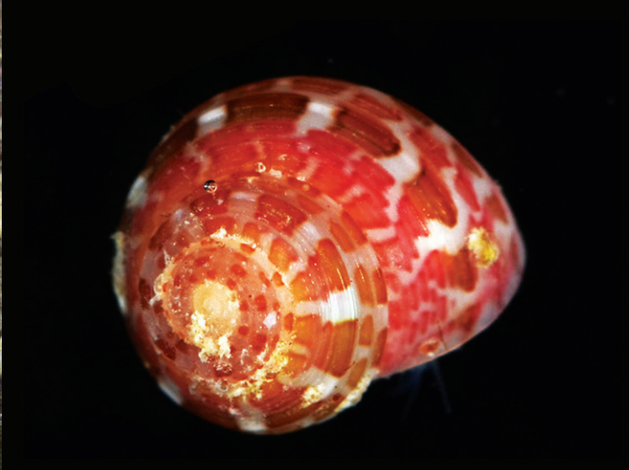
▲ **Common sally-light-foot** *Grapsus tenuicristatus*

▼ **Mottled sally-light-foot** *Crapsus albolineatus*



INFAUNA

The vast majority of species on coral reefs live out of sight for most visitors. There are countless species of worms, crustaceans, mollusks, and other invertebrates that make their homes hidden in the rubble, buried just beneath the sand, or living within cracks and holes of the reef structure itself. These organisms, known as "infauna", can usually only be discovered with specialized sampling techniques. When examined closely, they reveal fascinating and beautiful forms.



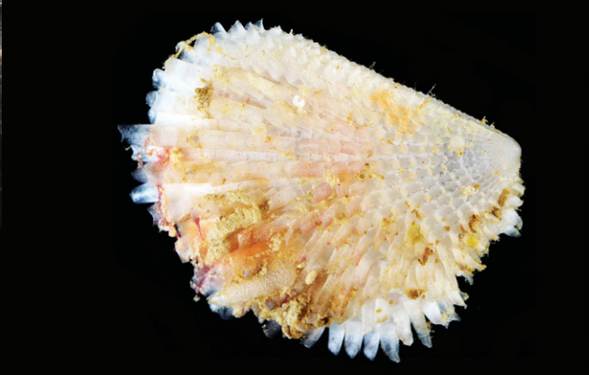
Turbo



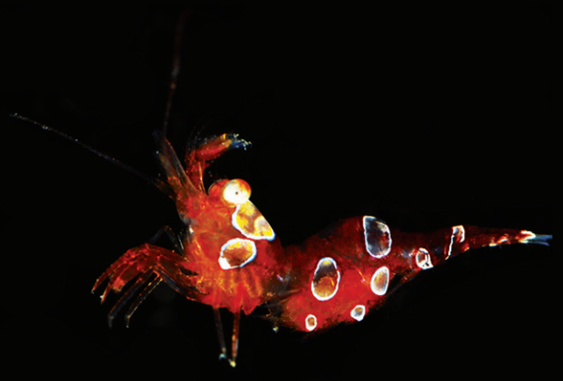
Galathea



Thalamitoides spinigera



Lima



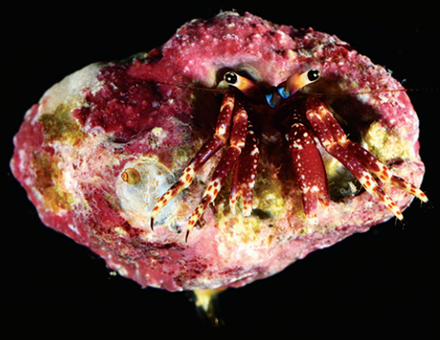
Thor amboinensis



Saron marmoratus



Chiridota



Calcinus rosaceus



Callioplanidae



Red Sea anemonefish
Amphiprion bicinctus



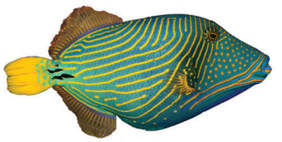
Ehrenberg's snapper
Lutjanus ehrenbergi



Black spotted emperor
Lethrinus harak



Common lionfish
Pterois miles



Orange-stripped triggerfish
Balistapus undulatus



Doublebar bream
Acanthopagrus bifasciatus



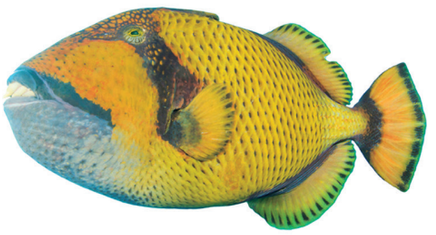
Scissortail sergeant
Abudefduf sexfasciatus



Indo Pacific sergeant
Abudefduf vaigiensis



Dusky gregory
Stegastes nigricans



Titan triggerfish
Balistoides viridescens



Picassofish
rhinecanthus assasi



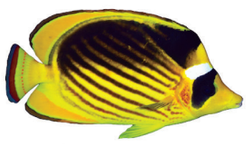
Sulphur damselfish
Pomacentrus sulfureus



Half and half chromis
Chromis dimidiata



Bluegreen chromis
Chromis viridis



Red Sea raccoon butterflyfish
Chaetodon fasciatus



Exquisite butterflyfish
Chaetodon austriacus



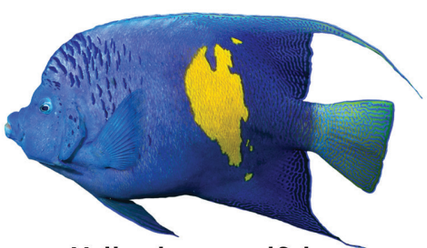
Threadfin butterflyfish
Chaetodon auriga



Red Sea bannerfish
Heniochus intermedius



Silver mono
Monodactylus argenteus



Yellowbar angelfish
Pomacanthus maculosus



Yellowtail tang
Zebrasoma xanthurum



Arabian angelfish
Pomacanthus asfur



Lined bristletooth
Ctenochaetus striatus



Speckled sandperch
Parapercis hexophthalma



Guilded pipefish
Corythoichthys cf. *schultzi*

Dark spotted ray
Himantura uarnak



Giant moray
Gymnothorax javanicus



Spotted eagle ray
Aetobatis narinari



Blue-spotted ray
Taeniura lymma

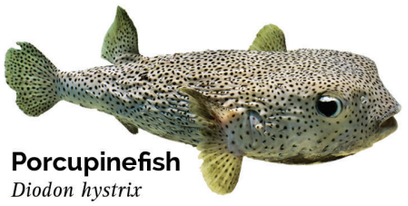
Sicklefin lemon shark
Negaprion acutidens



Whitetip reef shark
Triaenodon obesus



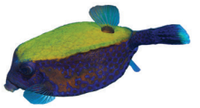
Smooth cornetfish
Fistularia commersonii



Porcupinefish
Diodon hystrix



Masked pufferfish
Arothron diadematus



Bluetail trunkfish
Ostracion cyanurus



Lyretail anthias
Pseudanthias squamipinnis



Black spotted sweetlips
Plectorhinchus gaterinus



Spotfin squirrelfish
Neoniphon sammara



Arabian cardinalfish
Cheilodipterus linneatus



Fourline wrasse
Larabicus quadrilineatus



Indian bird wrasse
Gomphosus caeruleus



Chiseltooth wrasse
Pseudodax moluccanus



Yellowfin goatfish
Mulloidichthys vanicolensis



Red Sea goatfish
Parupeneus forsskali



Chequerboard wrasse
Halichoeres hortulanus



Slingjaw wrasse
Epibulus isidiator



Mangrove snapper
Lutjanus argentimaculatus



Blotcheye soldierfish
Myripristis murdjan



Crescent wrasse
Thalassoma lunare



Klunzinger's wrasse
Thalassoma rueppellii



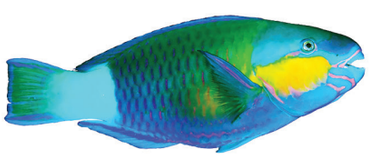
Summana grouper
Epinephelus summana



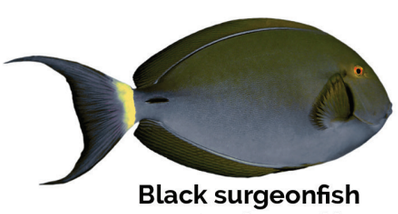
Peacock grouper
Cephalopholis argus



Coral hind
Cephalopholis miniata



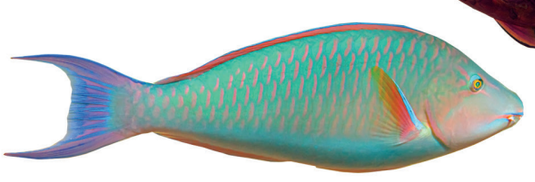
Bullethead parrotfish
Chlorurus sordidus



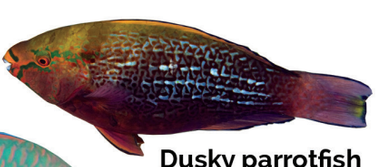
Black surgeonfish
Acanthurus gahhm



Sohal surgeonfish
Acanthurus sohal



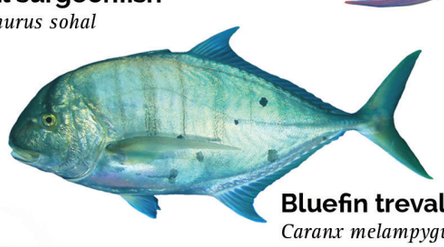
Indian longnose parrotfish
Hipposcarus harid



Dusky parrotfish
Scarus niger



Bluespine unicornfish
Naso unicornis



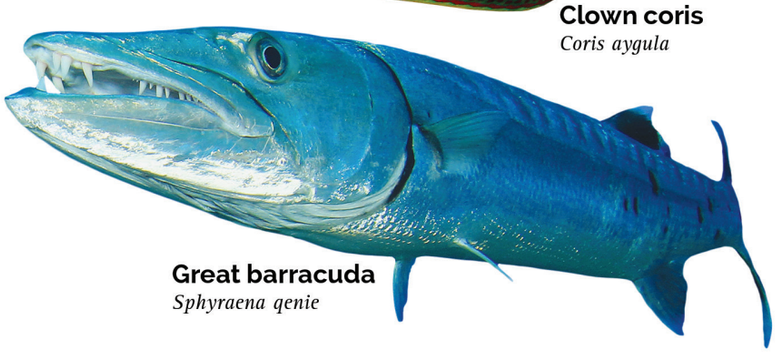
Bluefin trevally
Caranx melampygus



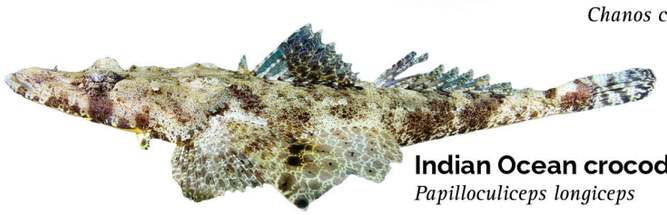
Clown coris
Coris aygula



Milkfish
Chanos chanos



Great barracuda
Sphyraena qenie



Indian Ocean crocodilefish
Papilloculiceps longiceps

FishKAM

FishKAM is a live, underwater, high-definition camera that showcases the rich marine biodiversity in our own backyard. It is installed at the University's Nature Conservation Area near the King Abdullah Monument. FishKAM highlights some of our local biodiversity and also aims to serve as an educational tool for the KAUST community.


LIVE From KAM
جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology
Health, Safety and Environment



MANGROVES

KAUST is home to a vibrant and thriving mangrove forest that spans over 91 hectares. The mangrove plant found at KAUST has the scientific name ***Avicennia marina***, also commonly called grey mangrove or white mangrove. Over the last decade, an increase in the mangrove area by about 20% was recorded at KAUST.

Mangrove forests protect our shores from erosion, help mitigate climate change by sequestering high amounts of CO_2, and host a broad range of fauna, both marine and terrestrial. They also produce compounds that have potential value to the pharmaceutical industry.

The great Muslim philosopher and natural historian, Abu-Ali al-Husayn Ibn-Sina, described the natural history of the Red Sea, including the life cycle of the mangrove species most dominant in the Red Sea. He was known to the western world as Avicenna (980-1037), which explains the scientific name of our common mangrove. One of the buildings on KAUST's academic campus also bears his name.













BIRDS
AND BUTTERFLIES

Birds and sighting map
Butterflies




D
Red Sea
King Abdullah Monument Access Road
King Abdullah Monument Link Road
A
Red Sea
Safaa Oasis
Unity Boulevard
Safaa
B
Garden Residential
King Abdullah Boulevard
King Abdullah Boulevard
Wind Turbine Farm
Bayt Al Hikmah Boulevard
Island Residential
King Abdullah Boulevard
Research Park
Town Center
Academic Campus
Unity Boulevard
Research Incubator
Central Services
Yacht Club
CMOR
Cup Utility Plants
C
South Future Extension
Northern Beach
Thuwal Marina
Future Development
Southern Beach
National Guard
External

BIRDS AND SIGHTING MAP

KAUST is an ideal environment for bird life with its variety of habitats, including mudflats, mangroves, lakes, parklands and gardens. Over 250 bird species have been identified at KAUST since the opening of the University.

KAUST lies on a major bird migratory route. In the autumn, migrating birds leave their breeding grounds in Central Eurasia and along the Red Sea enroute to their winter homes in North and East Africa. In the spring, they make the return journey. Most birds break their long journeys into a series of shorter legs and make multiple stops on the way. KAUST is ideal for this purpose because there is a variety of food to help replenish energy supplies, places with fresh water to drink and a variety of vegetation to provide cover from predators. Species of Swallow, Crake and Warbler along with both Blue-cheeked and European Bee-eaters favor the gardens and wooded areas. Many water birds prefer the mudflats or mangroves with Waders, Flamingos, Cranes and Herons among the most frequently observed species.

Other birds seen at KAUST are residents who are present throughout the year and many of which also breed here. Crab Plovers, Ruepell's Weavers and Black Bush Robins are among the local birds who have made KAUST their permanent home.

There are excellent opportunities to observe birds at KAUST. Observation hides exist at the Safaa Golf Course and on South Beach. The Nature Conservation Area and the Island Mangroves are other fruitful places to explore the variety of avian wildlife on our doorsteps.



LEGEND

Bird Watching Hotspots









▲ **Top Left** African Silverbill *Euodice cantans*
▼ **Bottom** Striolated Bunting *Emberiza striolata*

▲ **Top Right** Daurian Shrike *Lanius isabellinus*
▸ **Right Page** Ruefell's Weaver *Ploceus galbula*











▲ **Top Left** Blue-cheeked Bee-eater *Merops persicus*
◂ **Left Page** Green Bee-eater *Meropos persicus*

▲ **Top Right** European Roller *Coracias garrulus*
▾ **Bottom** Turtle Dove *Streptopelia turtur*



▲ **Top** Demoiselle Crane *Grus virgo*

▶ **Right Page** Great Cormorant *Phalacrocorax carbo*

▼ **Bottom** Caspian Tern *Hydroprogne cassia,* Slender-billed Gull *Chroicocephalus genei*





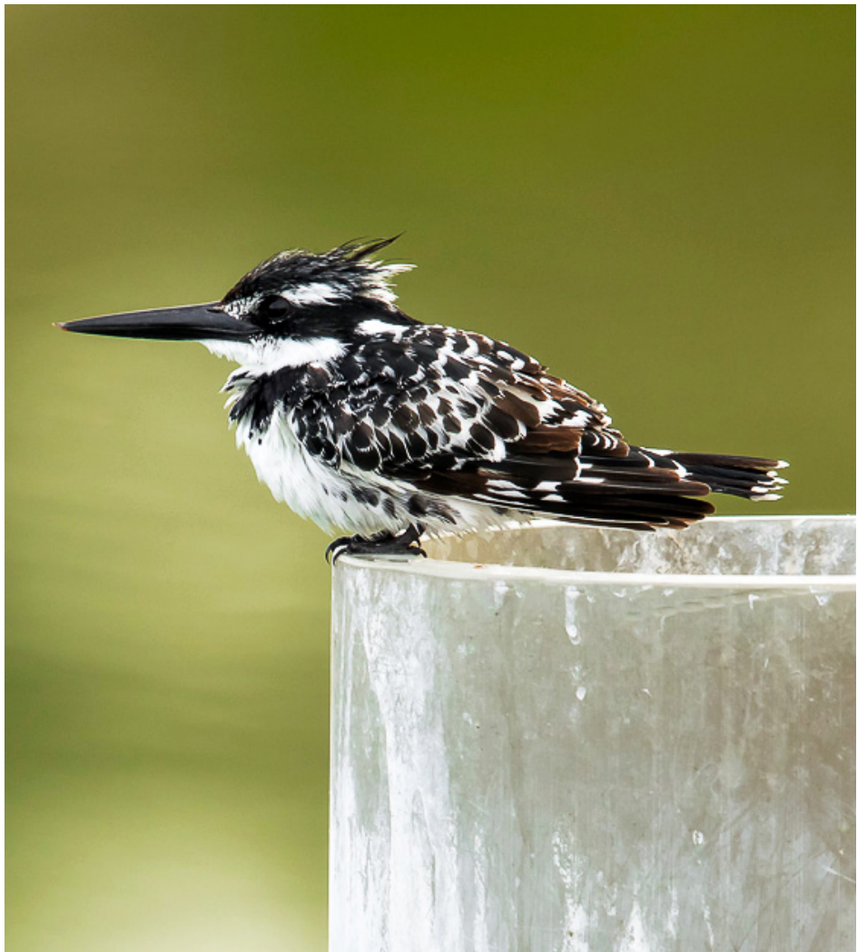




▲ **Top** Long-legged Buzzard *Buteo rufinus*
▼ **Bottom Left** Common Kingfisher *Alcedo atthis*

▸ **Right Page** Short-eared Owl *Asio flammeus*
▾ **Bottom Right** Pied Kingfisher *Ceryle rudis*













▲ **Top** Hoopoe *Upupa*

◂ **Left**

White-spectacled Bulbul *Pycnonotus xanthopygos*

Eastern Cinereous Bunting *Emberiza cineracea semenowi*

▾ **Bottom** Whinchat *Saxicola rubetra*







▲ **Top Left** Black Bush Robin *Cercotrichas podobe*
▼ **Bottom** White-throated Robin *Irania gutturalis*

▲ **Top Right** Bluethroat *Luscinia svecica*
▶ **Right Page** Lesser Grey Shrike *Lanius minor*







▲ **Top** Spur-winged Lapwing *Vanellus spinosus*
▸ **Right** Spur-winged Lapwing's Egg
◂ **Left Page** Great Cormorant *Phalacrocorax carbo*



▸▸ **Next Page** Sooty Gulls *ichthyaetus hemprichii*







Bluethroat



Green Bee Eater



Nile Valley Sunbird



Ruepell



White Spectacled Bulbul



Glossy Ibis



Laughing Dove



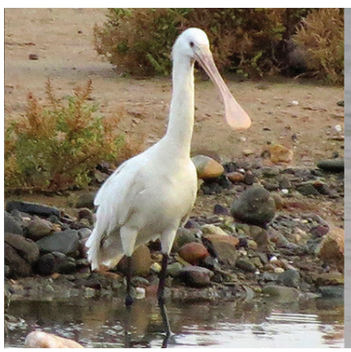
Ruff



Spur-winged Lapwing



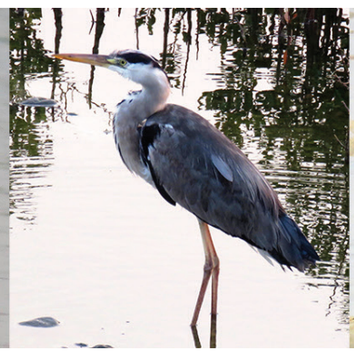
White Wagtail



Eurasian Spoonbill



Greater Flamingo



Grey Heron



Western Curlew



Western Reef Egret



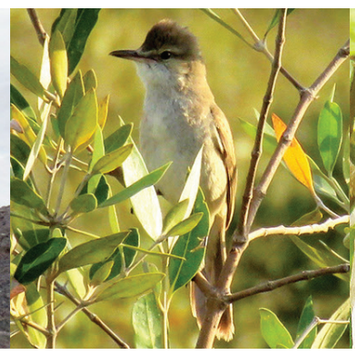
Caspian Tern



Sooty Gull



Ruddy Turnstone



Clamorous Reed Warbler



Mangrove Reed Warbler



Black Bush Robin



Cattle Egret



Common Myna



Common Sandpiper



Eurasian Hoopoe



Yellow Wagtail



Collared Dove



Western Osprey



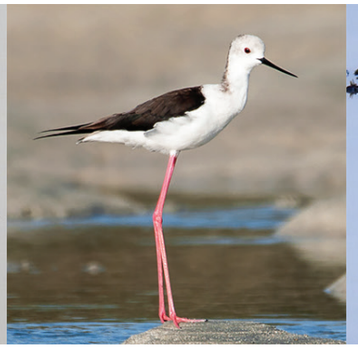
Barn Swallow



Crab Plover



Whimbrel



Black-winged Stilt



Common Redshank



Greater Sand Plover



Greenshank



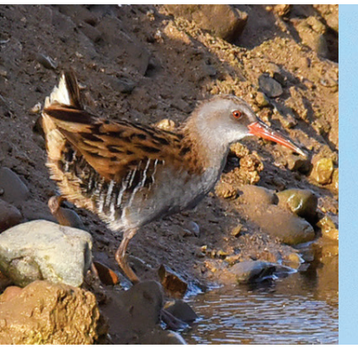
Purple Heron



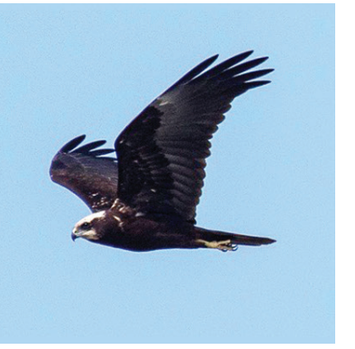
Yellow Bittern



Striated Heron



Water Rail



Marsh Harrier



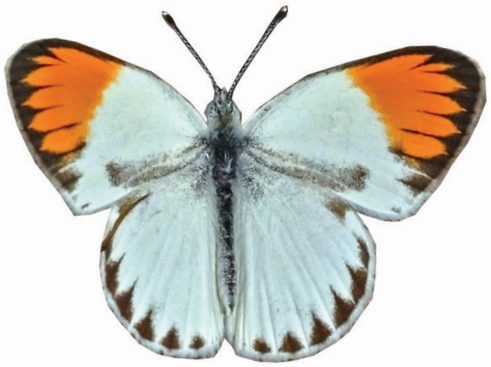


BUTTERFLIES

Larsen's 'Butterflies of Saudi Arabia' indicates that 35 species occur in the Hejaz region which includes KAUST. A species will only be found if the plant species, consumed by the larvae, grows locally. The collection of butterfly records at KAUST stands as 15 butterflies species.



Caper White



Desert Orange Tip



African Lin



Diadem ♀



Diadem ♂



Plain Tiger



Yellow Patch White



Blue Spo



me Butterfly



African Grass Blue



Painted Lady



Yellow Pansy



Grass Jewel



otted Arab

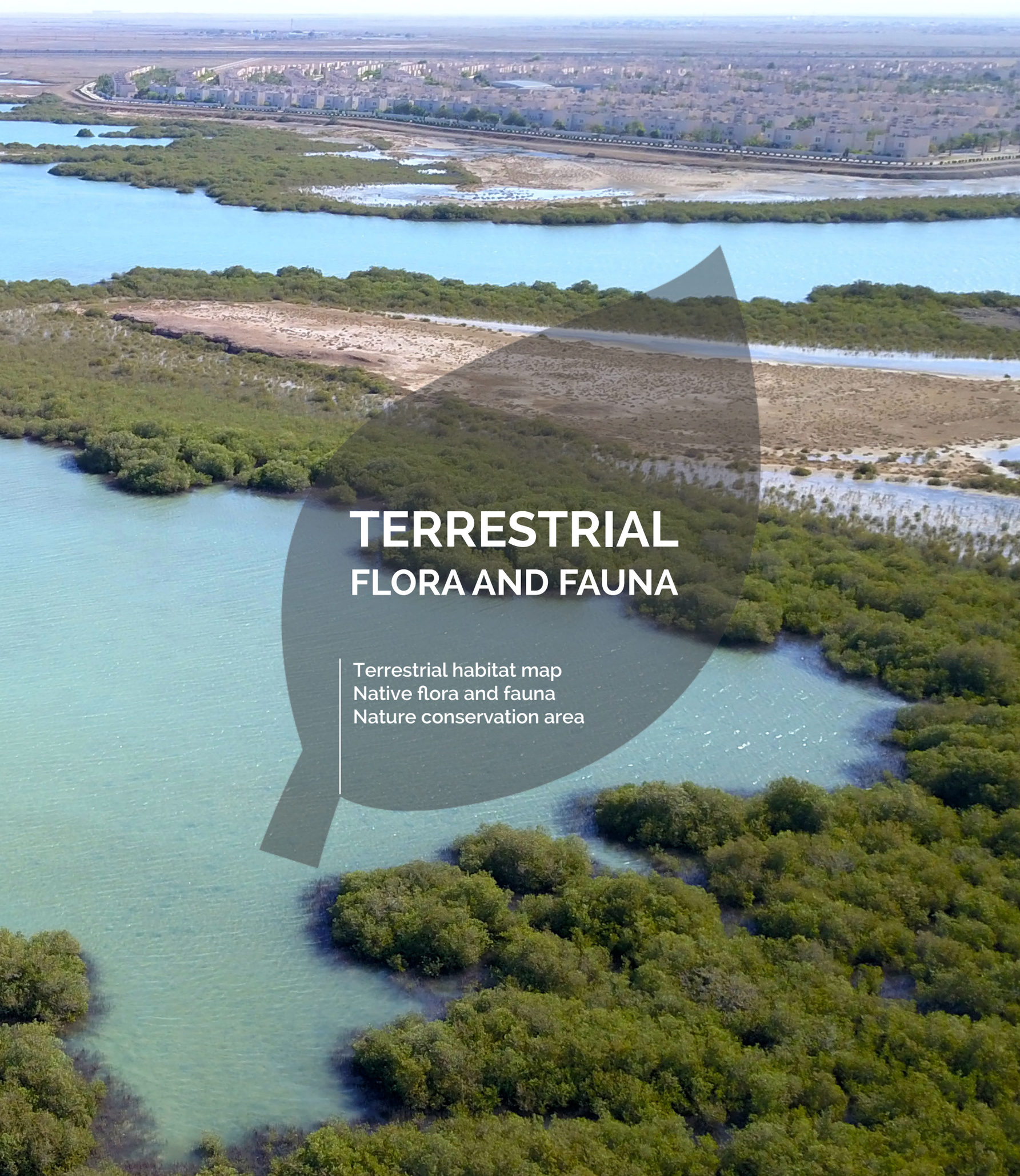


Scarlet Tip



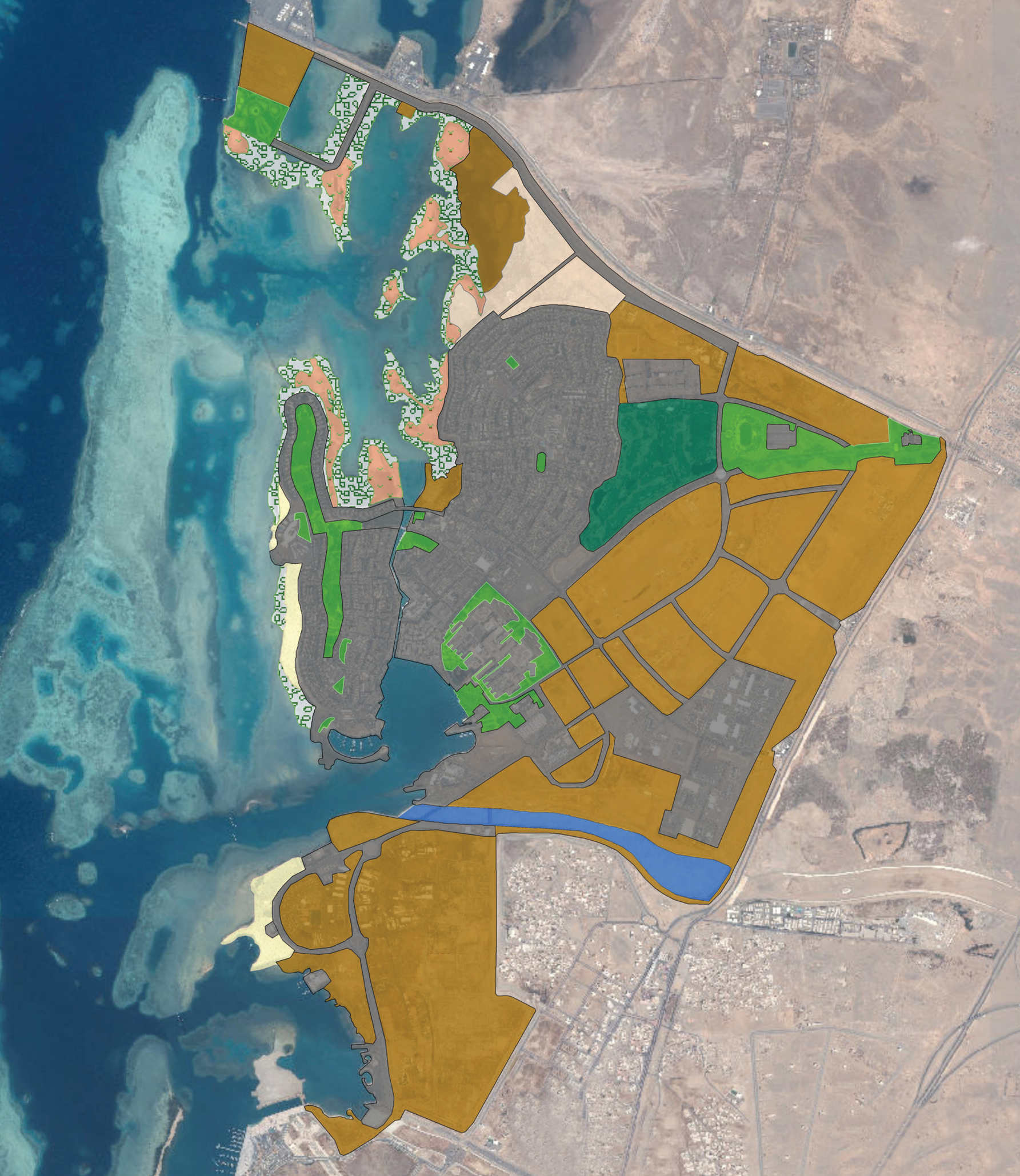
Leaden Ciliate Blue





TERRESTRIAL
FLORA AND FAUNA

Terrestrial habitat map
Native flora and fauna
Nature conservation area



TERRESTRIAL HABITAT MAP



▲ Halophytic vegetation

KAUST's terrestrial landscape can be broadly divided into developed areas, undeveloped areas and natural areas. The natural landscape at KAUST is covered by mangrove forest and a mix of halophytic vegetation, sabkhas (salt-flats just above the water table) and sandy-gravel plains with scattered vegetation. This natural habitat has been supplemented by extensive man-made parks and gardens, including a golf course, and a wide variety of exotic plants.

Around 26 plant species native to the area have been recorded at KAUST. In addition to native flora, there are around 1.3 million square meters of landscaped area, including over 523,000 square meters of public parks, the golf course, lawns and a large quantity of non-native plants belonging to 165 species.

LEGEND

- Beaches
- Golf Course
- Halophytic habitat
- Mangroves
- Park & Public gardens
- Sabkha
- Undeveloped
- Urban & Road
- Wadi (canalised)



▲ *Calotropis procera*



▲ Kapok Bush *Aerva javanica*





▲ Natal plum *Carissa macrocarpa*



▲ **Left** *Suaeda cf aegyptiaca*
▸ **Right Page** Gum arabic tree *Acacia nilotica*



NATIVE FLORA

F Fungi

G Grasses & sedges

T Tree

H Herbs



F Mushrooms



F Toadstools



G Cyperus cf. rotundus



G Chloris barbata



G Chloris virgata



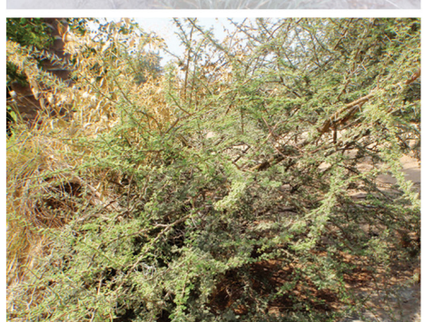
G Cyperus conglomeratus



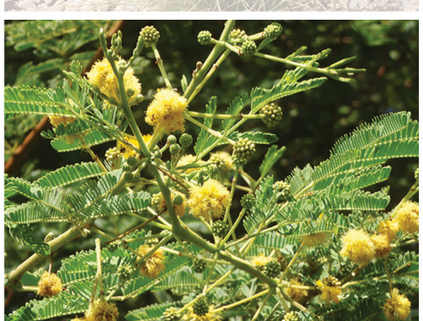
G Panicum turgidum



G Phragmites australis



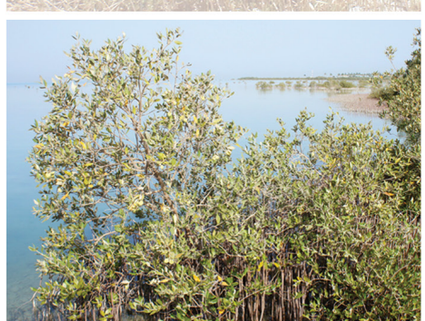
T Acacia tortillis



T Acacia nilotica



T Balanites aegyptiaca



T Grey mangroves Avicennia Marina



T Tamarix cf aphylla



H Aerva javanica



H Anabasis ehrenbergii



H Calotropis procera



H Tetraena coccineum



H Carissa macrocarpa



H Citrullus colocynthis



H Convolvulus deserti



H Dipterygium glaucum



H Euphorbia glomifera



H Halopeplis perfoliata



H Tetraena simplex



H Heliotropium cf curassavicum



H Indigofera cf tritoides



H Lantana camara



H Leptadenia pyrotecnica



H Leucaena leucocephala



H Leucophylum frutescens



H Portulaca portulacastrum



H Salsola imbricata



H Suaeda cf aegyptiaca



NATIVE FAUNA

▲ **Top** Hadramaut sand lizard *Mesalina adramitana*
▼► **Bottom&Right** Desert Hedgehog *Paraechinus aethiopicus*









NATURE CONSERVATION AREA

KAUST is the custodian of a significant span of coastal waters and a well-conserved mangrove area in a unique marine ecosystem. In June 2017, KAUST set aside 152 hectares of protected land and water to form the "Ibn Sina Field Research Station and Nature Conservation Area." This formal designation is a clear testimony of the University's commitment to protecting and enhancing the unique local biodiversity within the walls of the University. This protected area is home to a vast area of mangrove plants as well as popular fish view points and birding hotspots.

The Ibn Sina Field Research Station hosts some long-term experiments and monitoring programs that will help KAUST researchers to gather important information about local biodiversity and its global contribution. The area is named after Ibn Sina, the Arabian philosopher who first classified the main Red Sea mangrove plant as Avicennia marina about ME 800.

In addition to this large Nature Conservation Area, protected areas at the Saffa Golf Course have been established. Seven areas of golf course covering 2.2 hectare are fully protected and a further 4.23 hectares are designated as semi-protected areas. These designated areas will be managed in such a way to provide a productive environment for local and migratory bird species.

LEGEND

Nature Conservation Area

Saffa Golf Protected Area

Saffa Golf Semi-Protected Area



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This book collects images taken in KAUST and its immediate surroundings to capture the true local biodiversity at KAUST. We are grateful to all the contributors to this publication and to the KAUST 10 Committee for their support in printing this book.

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