> About one in seven plant and animal species in the Kingdom and the Arabian Peninsula can be found nowhere else on Earth.
>
> **Chris Boland**
> Environmental consultant

NATURAL PEST CONTROL

Guardians of the desert ecosystem

How wildcats control pests, protect public health and support environment

Haifa Alshammari Riyadh

During the summer of 2024, two desert lynx kittens were born in Taif as part of Saudi Arabia's efforts to protect and increase the population of caracals.

Although caracals are critically endangered, wildcats in general play a vital ecological role in the Kingdom. They act as natural pest control, and Saudi Arabia is committed to conserving these species while boosting their populations.

Despite the Kingdom's harsh, arid climate, conditions allow wildcats not only to survive but also to flourish.

Among the terrestrial species in Saudi Arabia are sand cats, Arabian wildcats, and the desert lynx.

Felis margarita, or sand cats, are small — around 40-60 cm — with pale sandy fur that helps them blend into the desert. They have broad heads, large ears, and long hair on the bottoms of their feet to walk on hot sand.

"It is small in size and does not mate with other cats. It is the only cat species in the world with hair on the soles of its feet instead of skin to prevent it from sinking into the sand," said Obaid Alouni, a Saudi environmentalist.

Raising sand cats as domestic pets is gaining popularity, Alouni said, but adoption is easier when they are kittens, as they remain wild animals.

Arabian wildcats (Felis lybica), found across the Arabian Peninsula, also play a vital role.

"They are wild cats that live independently without human intervention," Alouni told Arab News.

They resemble domestic cats but have thicker, sandy to grey-brown coats with faint stripes or spots and ringed tails with blunt tips.

Alouni warned that pure populations could be threatened by hybridization with domestic cats.

The caracal, or desert lynx, is critically endangered. "The lynx is classified in size between large and small, and is distinguished by its jump, which can reach 3 meters or even 4 meters in the sky," Alouni described.

Locally known as Al-Washaq, desert lynx have reddish-tan coats, long legs, and black-tufted ears, feeding on birds, rodents, and sometimes small antelopes.

They are protected under Saudi law.

DID YOU KNOW?

1 **Sand cats are the only cat species with hair on the soles of their feet, allowing them to walk on hot sand without sinking.**

2 **Caracals, locally known as Al-Washaq, are native and endangered, capable of jumping 3 to 4 meters in a single leap.**

3 **Pure populations of the Arabian wildcat are at risk due to hybridization with domestic cats.**

Saudi Arabia regulates grazing to preserve nature

MESHAL AL-HARBI

In a strategic move that underscores the Kingdom's commitment to safeguarding its natural resources and preserving one of its most significant cultural legacies, Saudi Arabia is advancing with determination the regulation of its grazing sector, as part of a national approach aimed at achieving a balanced integration of environmental, economic and social development.

Grazing is no longer regarded as simply a traditional activity; it has emerged as a fundamental component of national sustainability policies. Natural rangelands account for approximately 73 percent of the Kingdom's land area and represent a critical resource for the support of livestock production and the rural economy.

Reflecting the commitment of the wise Saudi leadership, a directive has been issued to designate 26 grazing sites across the Kingdom's regions, covering a total area of approximately 8 million hectares (80,000 sq. km).

The National Center for Vegetation Cover Development and Combating Desertification aspires to play a vital role in helping to realize this ambitious vision, by safeguarding these sites and conducting rigorous scientific studies to assess the condition of vegetation cover and determine grazing capacity.

To date, these studies have been completed at 10 sites and serve as the scientific foundation for issuing grazing permits, and defining authorized grazing periods and designated areas.

Meshal Al-Harbi is director general of the General Department of Natural Rangelands at the National Center for Vegetation Cover Development and Combating Desertification.

Grazing regulation in the Kingdom is implemented within specific seasons that respect the natural life cycle of vegetation.

This scientific approach to grazing management enhances the sustainability of rangeland and helps achieve a careful balance between the benefits of grazing and the preservation of natural resources for future generations.

In practice, the regulation of grazing has delivered notable outcomes that affirm its economic and social viability.

In Jabla National Park, located in Al-Dawadmi governorate in Riyadh region, a pioneering experiment was carried out to regulate camel grazing through the issuance of official permits to their owners. After only one grazing season, a field survey indicated a 76 percent reduction in the cost of manufactured feed as a result of the increased reliance on rich, natural rangelands and improved productivity.

In the Ma'ila rangelands of the Northern Borders Province, sheep grazing was organized for approximately 7,000 animals. This resulted in a 100 percent reduction in feed costs during the grazing season.

Such models have strengthened the trust between herders and the center, by demonstrating that environmental protection can result in direct economic benefits for local communities.

The center has launched an electronic system for issuing grazing permits through its "Nabati" platform, marking a step forward in the comprehensive automation of grazing-regulation processes.

The acacia tree grows naturally in the desert. It is a desert umbrella tree.

Oubaid Alouni
Environmental consultant

Business GREEN & BLUE

ENVIRONMENT

Protecting Acacia trees from beetles

Expert warns against insecticides that could harm the ecosystem

Haifa Alshammari Riyadh

The acacia tree is of significant importance to both the environment and culture in Saudi Arabia. It provides shelter for migratory birds and protects travelers and Bedouins in the Arabian Peninsula's hot desert.

Among the many environmental benefits of the acacia tree is its ability to prevent desertification; its roots improve soil fertility; it provides shade and lower temperatures; it stores carbon and reduces carbon dioxide levels; and it stabilizes dunes in desert areas.

An invasive beetle — scientific name Agrilus planipennis Fairmaire — has been attacking trees for years, killing many of them in the Kingdom, including perennial trees.

Oubaid Alouni, an environmental consultant and former consultant at the National Center for Vegetation Cover Development and Combating Desertification, explained the role of the acacia tree in the ecosystem and how the pest threatens its existence.

He outlined the different types of acacia trees in Saudi Arabia.

"The acacia tree grows naturally in the desert. It is a desert umbrella tree and is divided into two types; the Iraqi acacia and the Najdi acacia, and reaches around 55 types in total," Alouni said.

There is also another type of acacia tree that grows in Asir, locally known as Al-Kanhbal, scientific name Vachellia origena, that differs from the Najdi acacia, which has long branches and provides ample shade.

The acacia tree is threatened by the Agrilus planipennis Fairmaire as this species relies on the tree for nutrients. "This insect reached Saudi Arabia through imported wood, as they found larvae inside wood imported from Russia," Alouni said.

The pest is a highly destructive wood-boring beetle feeding on the phloem of ash trees. It is also known as the Emerald ash borer, and is native to China, Japan, South Korea, Mongolia and Russia.

This bug is typically a small, metallic green beetle, around half an inch (about 1.2 to 1.5 cm in length), and one of its distinguishing features is that when the wing covers are lifted, the upper abdomen is bright red.

Its life cycle involves multiple stages. The first is the egg stage, during which females lay 40-53 eggs. Then comes the larva, the longest stage of the beetle's life cycle, lasting almost a year.

"The larva lives inside the tree for one to two years, eating the layer between the bark and the main trunk," Alouni said.

After that, it goes through a shorter stage, as a pupae, that lasts about 20 days.

Finally, it reaches the adult stage and is known for chewing through the wood and emerging from trees, forming a small, D-shaped exit hole about 3 to 4 mm wide. This stage of its life is usually short, lasting about 20 days.

The pest is now attacking olive trees in the US, Alouni said.

He believes that a particular bird species, the woodpecker, is one of the most effective ways to reduce the numbers of the beetle.

"It's called the Arabian woodpecker, yet it only exists in Asir and in small populations, too," he said.

According to Alouni, the Arabian woodpecker hears the insect inside the tree, hits the branch with its beak and removes it.

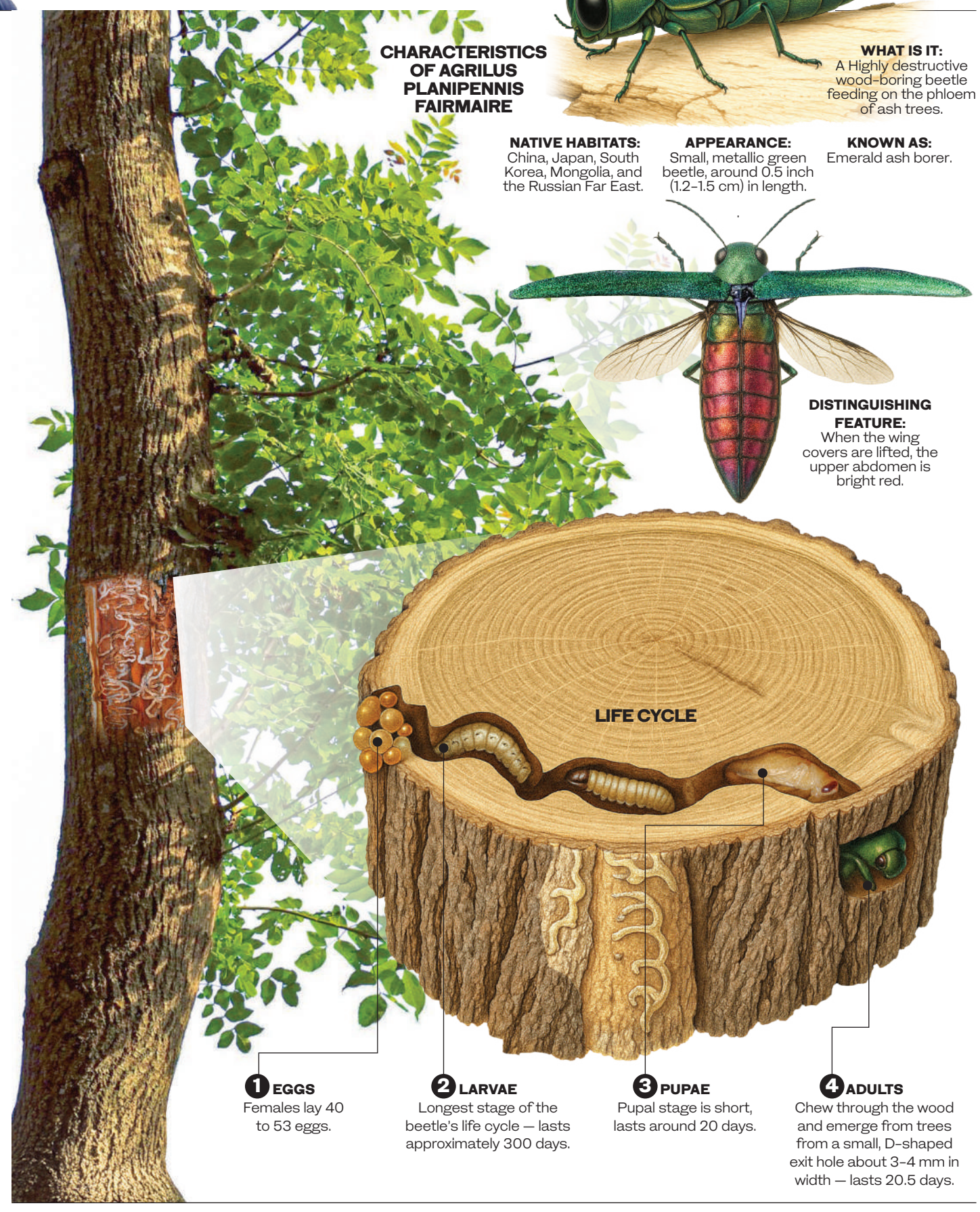
Chemical methods can also be used, but Alouni does not endorse these due to their environmental risks.

DID YOU KNOW?

1 **Some of the finest honey in the Kingdom is produced from acacia and jujube trees.**

2 **Acacia trees help reduce sand encroachment in the desert and provide shelter for several bird species.**

3 **The acacia tree can withstand drought for up to 10 years, even severe drought.**



Carbon markets can't wait for another debate

MUKHTAR BABAYEV

Carbon markets are stalling right when we need them most. Governments are currently finalizing their national plans to cut emissions ahead of the next UN Climate Summit, COP30, in Brazil.

This may be our last chance to keep the Paris Agreement's temperature goals within reach. To do that, we need to use every tool available, including carbon markets.

Years of disappointing results have shaken faith in these mechanisms. Many companies fear that using carbon credits will lead to accusations of greenwashing. The value of voluntary carbon market transactions has dropped by three quarters in three years.

Carbon markets were once dismissed as an excuse not to cut emissions. Yet similar thinking also questioned the need to adapt to climate change rather than focus on averting it. But around the world, and particularly in the Middle East, we can already see the dangers of a changing climate.

To be clear, our top priority must always be deep, rapid and sustained emission cuts at source. Demand for carbon credits must be over and above our best efforts to decarbonize.

This is the most effective way to address the climate crisis. However, we also face the reality that some sectors, such as steel, aluminum and cement, are incredibly hard to decarbonize in the short term. This is where carbon markets can help.

Mukhtar Babayev is the COP29 president.

When designed well, they could create essential efficiencies. To take the most basic example, a tree planted in the Congo Basin is cheaper and absorbs more carbon than a tree in Canada. These costs matter — the savings they provide to hit our climate goals are estimated to be as great as $250 billion a year. This money can then be reinvested for even greater ambition and progress on climate change.

Carbon markets also provide benefits for both climate and people.

However, we must acknowledge the skepticism. Some of the early steps taken were misguided. Forests were chopped down to plant new ones and bogus credits battered confidence. A carbon credit is worthless if we can't be confident that it does what it says it does.

Fortunately, much work has been done to learn from the past and build a better system. Last year at COP29 in Azerbaijan, we concluded a decade-long process to agree stringent new standards for high-integrity carbon markets under the UN.

Countries have a framework for new credits that represent real, additional and verified emissions reductions. And we have agreed routes to improve these standards over time.

This framework should now be the baseline. Carbon markets are not a silver bullet. But they are a necessary piece of the puzzle. COP30 can then be a moment when we send a strong signal that carbon markets are legitimate in principle and possible in practice. We don't have the luxury of leaving this tool on the shelf.

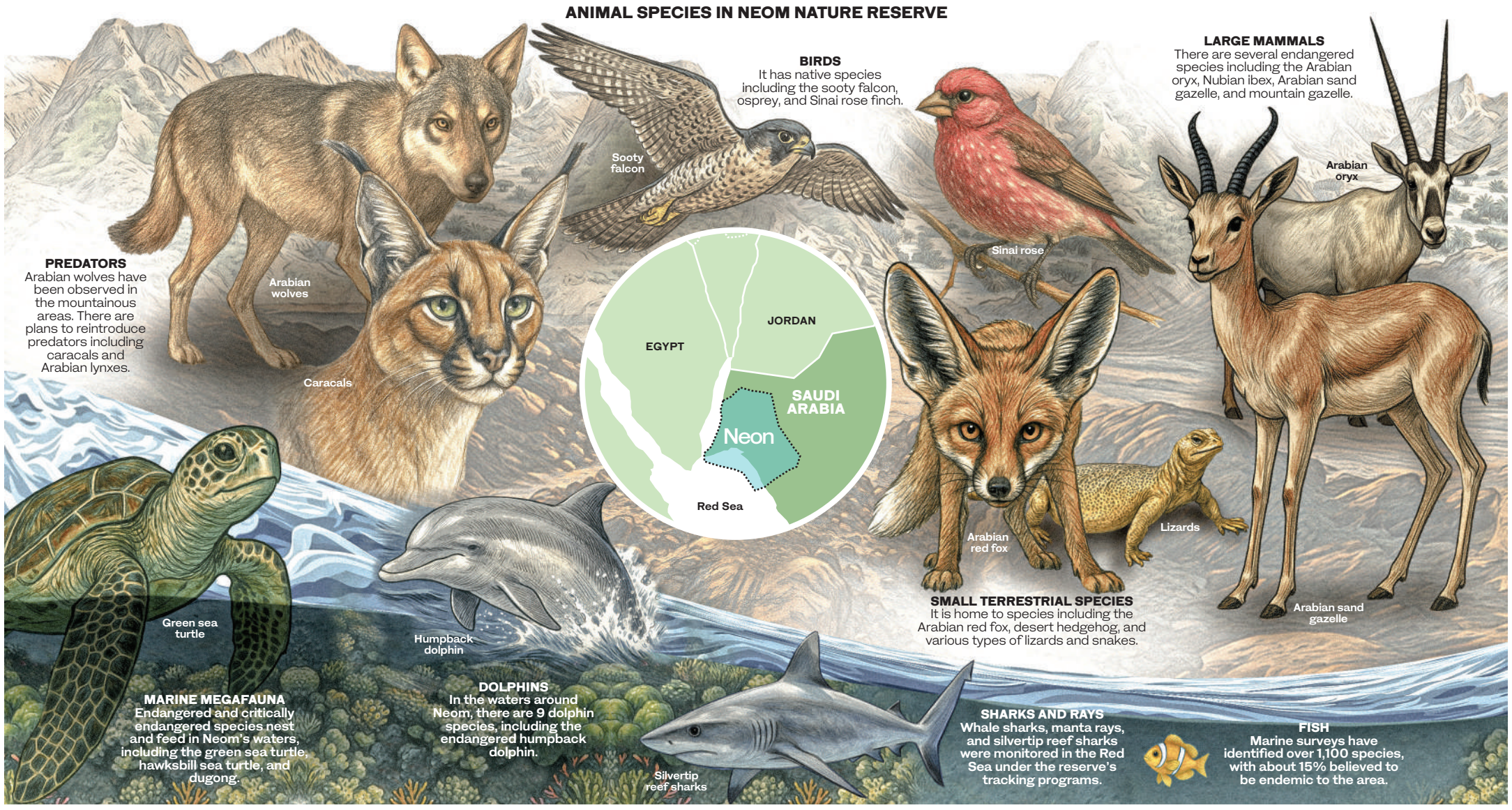
One of our breakthroughs has been the implementation of artificial nesting platforms for sooty falcons and ospreys.

Mishari Alghurair
Marine species conservation manager at Neom

FLORA & FAUNA

Inside Neom's biodiversity revolution

Conservationists are reintroducing iconic wildlife species to restore balance



Haifa Alshammari Riyadh

In the Neom Nature Reserve, Saudi Arabia's conservationists are reshaping the future of biodiversity and ecological restoration.

Tasked with protecting some of the Kingdom's most unique ecosystems, these experts are pioneering approaches in one of the world's most ambitious environmental initiatives.

Tariq Aljohany, a field restoration specialist at Neom, has spent years studying local flora and fauna and knows the desert intimately. He recently told Arab News about the hands-on work underway.

"I'm responsible for collecting seeds of native species across Neom. These seeds are then propagated at Neom's Mneifa Plant Nursery, where we grow plants for active restoration efforts — reintroducing species that should be part of our landscape but have disappeared due to overgrazing and off-road driving."

The reserve underpins Neom's pledge to preserve 95 percent of its area for nature. As part of a larger plan to restore 1.5 million hectares of habitat, Neom aims to plant 100 million native trees, shrubs, and grasses and revitalize vital wildlife populations, including Arabian oryx, mountain gazelles, and sand gazelles. This year, the reserve reintroduced over 1,100 animals across six species. Bushra Alabdulhafith, a wildlife conservation science lead at Neom, described how her childhood shaped her environmental mission. "Some of my fondest childhood memories are of racing up great sand dunes, visiting wadis during the rainy season, or camping with my family in winter. Being in nature brought me peace and a sense of belonging, which fueled my goal to actively protect it," she said.

Alabdulhafith leads Rewilding Program releases and monitors species including Arabian oryx, sand and mountain gazelles, Nubian ibex, and red-neck ostriches. She expressed her excitement over Neom's first raptor-release program.

Neom is not only a sanctuary for terrestrial species but also for marine megafauna. The Red Sea waters provide refuge for dolphins, turtles, and dugongs.

Mishari Alghurair, marine species conservation manager at Neom, leads a cross-functional team focused on protecting key species. Their initiatives include satellite tracking of turtles and seabirds, developing conservation plans for marine mammals, and creating artificial nesting habitats.

"One of our most exciting breakthroughs has been the successful implementation of artificial nesting platforms for sooty falcons and ospreys on the Neom islands. These structures have provided safe breeding sites, leading to increased nesting success rates and population growth where natural habitats were under pressure," he said.

DID YOU KNOW?

1 Neom Nature Reserve aims to plant 100 million native trees, shrubs, and grasses to rejuvenate the Kingdom's natural environment.

2 The reserve serves as the foundation for Neom's commitment to protect 95 percent of its area for nature.

3 The world's most extensive coral garden is within Neom, a collaboration with KAUST.

Saudi Arabia's role in the aerosol paradox

ADNAN MASOUDY AND HASSAN ALZAIN

The year 2024 was the warmest ever recorded. Global average temperatures reached 15.10°C, about 1.60°C above the 1850-1900 pre-industrial baseline.

It was the first time the world spent an entire year above 1.5°C, a threshold that will shape climate politics for years to come.

Hidden in this milestone lies a paradox. Human-made aerosols, including particles from shipping, agriculture, and dust, have been shading the planet. They scatter sunlight and brighten clouds, masking around 0.4 to 0.5°C of warming. Without them, the world would already be hotter.

As countries act to clean the air, health improves immediately. Yet with fewer reflective particles in the atmosphere, more sunlight reaches the surface. This exposes the greenhouse heat that has long been concealed, leading to faster near-term warming if greenhouse gases are not cut at the same time. Global models now suggest that without parallel methane and carbon dioxide minimization, the removal of aerosols could accelerate surface warming by several years, underscoring the need for integrated air and climate policy.

New research in 2025 shows that declining aerosols are already intensifying heatwaves in Asia, Europe, and the Middle East. Duration and severity are rising faster than greenhouse gases alone would predict. In the Gulf region, reduced atmospheric haze has allowed stronger solar penetration, adding measurable heat to urban microclimates and coastal waters during summer peaks. Achieving cleaner air offers one of the fastest ways to save lives and build healthier, more resilient communities. This urgency resonates with the International Day of Climate Action 2025 on Oct. 24.

Adnan Masoudy is manager of corporate sustainability, environment, and biodiversity at Ma'aden and Hassan Alzain is author of an award-winning book "Green Gambit."

Linking aerosols to this global day can highlight how local monitoring and immediate action can complement the broader push for systemic climate solutions. It also reframes Saudi Arabia's environmental modernization as a strategic opportunity to lead a global dialogue on balancing clean air with stable climate outcomes for all.

Saudi Arabia is well placed to help the world navigate this paradox. The National Center for Environmental Compliance now runs around 240 monitoring stations nationwide. They track fine particles and key gases, collecting data every five minutes, and cover many strategic areas, including major cities and pilgrimage centers.

These stations provide more than information; they are tools for prevention, forecasting, and early action that can help protect communities from haze and heat events while positioning the Kingdom as a leader in environmental resilience. This system gives Saudi Arabia one of the densest air-quality networks in the developing world, able to detect local aerosol shifts faster than most national systems can today.

We depend, and will continue to depend, on the ecosystem services provided by soils.

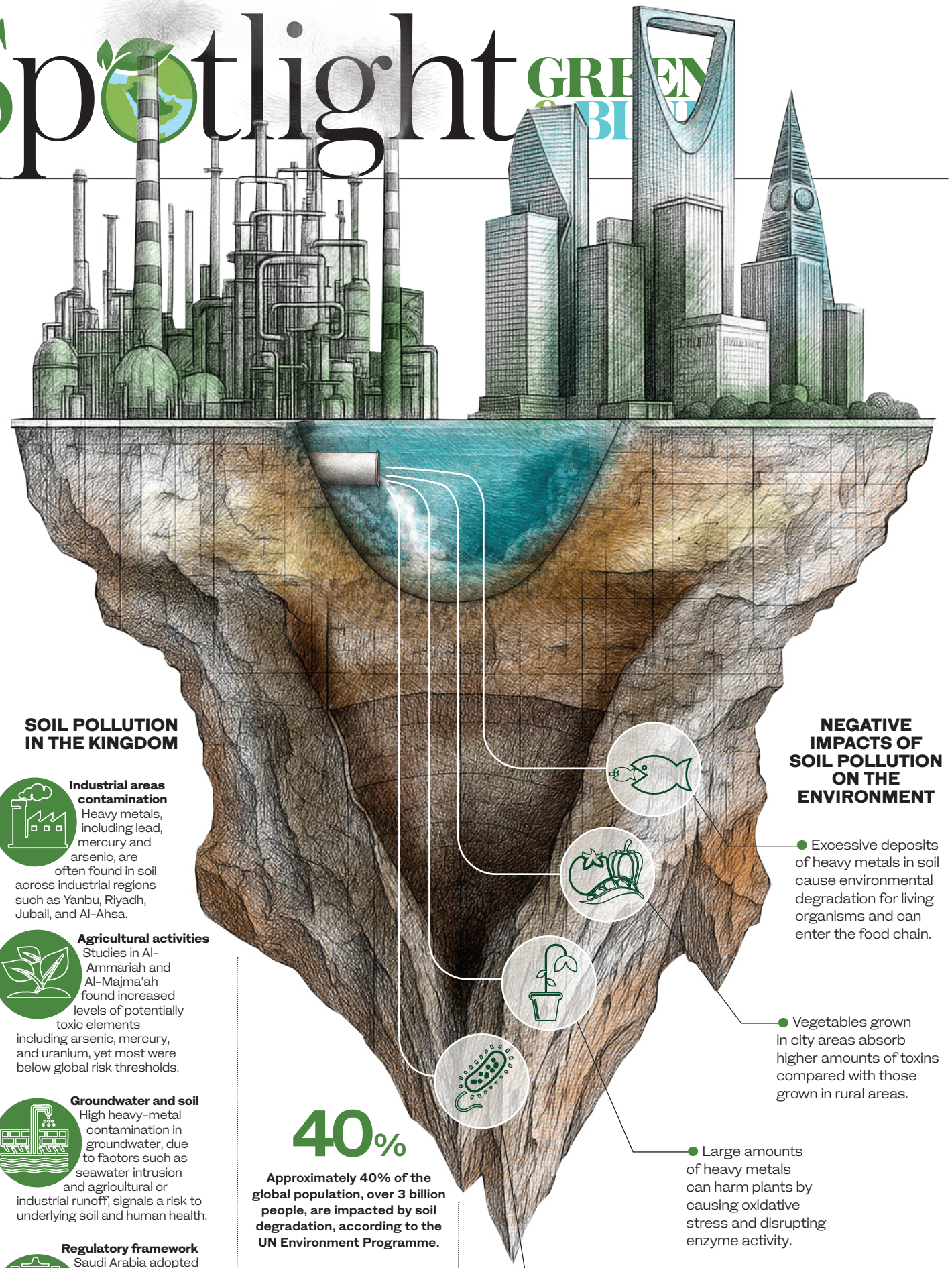
Abdelkader Bensada
Program management officer at UNEP

Spotlight GREEN & BLUE

SAUDI ARABIA

Safeguarding soil for future generations

Tackling soil pollution to protect the Kingdom's health, food security and environmental resilience



Haifa Alshammari Riyadh

Soil pollution underpins some of the most urgent threats to human health, food security and climate resilience.

Environmental agencies have long warned about the consequences — biodiversity loss, degraded farmland, polluted groundwater and higher disease risks. "We depend, and will continue to depend, on the ecosystem services provided by soils," Abdelkader Bensada, a soil expert at the UN Environment Programme, said about the risks of soil pollution on food security and health.

Heavy metals and industrial and agricultural chemicals can accumulate in soil, reduce fertility, infiltrate aquifers and ultimately enter the food chain.

Contaminants can enter soils accidentally or intentionally through human activity, including the application of fertilizers and pesticides and the use of untreated wastewater for irrigation. Urban expansion and desertification compound these pressures, sealing soils under concrete, stripping vegetation and accelerating erosion.

Saudi Arabia, with its expanding industrial base and rapid urban development, has been mapping and managing these risks more aggressively in recent years.

In 2023, King Saud University's Department of Geology and Geophysics published a study that identified increased levels of potentially toxic elements, including arsenic, mercury and uranium. Reassuringly, most were below global risk thresholds. Even so, the findings underscore the need for early interventions that prevent hotspots becoming health emergencies.

Policy has moved in tandem with science. Guided by Vision 2030, Saudi Arabia is weaving environmental protection into its economic transformation.

A key step came in 2020 with the adoption of the Executive Regulation for Soil Pollution Prevention and Remediation, issued by the Ministry of Environment, Water and Agriculture.

The regulation sets protection standards, remediation requirements, site monitoring protocols, and penalties for violations — giving regulators and industry a clear rulebook for preventing and cleaning up contamination.

Institutions have been retooled to enforce those rules. The establishment of the National Center for Environmental Compliance signaled a shift toward continuous monitoring and rapid response.

As of May this year, 16 mobilization exercises have been carried out, with NCEC overseeing operations implemented by Marine Operations for Environmental Services.

These exercises pair advanced satellite remote sensing with ship-based pollution control equipment. In industrial zones, authorities are tightening requirements for hazardous waste tracking, storage infrastructure and emergency preparedness.

In agriculture, the focus includes better guidance on fertilizer and pesticide use, promotion of treated wastewater standards and incentives for soil-health practices. Saudi officials also stress that remediation is not the end of the story. Sustainable land management reduces the chance of re-contamination and strengthens climate resilience.

DID YOU KNOW?

1 In terrestrial ecosystems, soils are the most important sink for heavy metal contamination.

2 Some 500,000 premature deaths are attributed to soil pollution globally, according to the EEA.

3 Approximately 40% of the global population is impacted by soil degradation, says UNEP.

A time to be bold and think big on urbanization

RICHARD BUSH

There is a global quest for urban innovation that enables cities to grow efficiently, enhance livability, and reduce pressure on natural resources. Society is now acutely aware of major environmental challenges: climate change, pollution, desertification, deforestation, and biodiversity loss. Less commonly recognized, however, are the profound implications of the thousands of new cities we will need this century to accommodate projected population growth, particularly in Africa, China, India, and the Middle East.

With an estimated 11.6 billion people expected by 2100, we have entered an era of unprecedented urbanization. Humanity is creating what urbanists Greg Clark and Borane Gille describe as a "planet of cities." UN modeling projects the global urban population will rise from 2.6 billion to 9.6 billion, and cities with over a million residents will increase from 275 to about 1,600, meaning more than 1,000 major cities will be built in the next 75 years. The process of building these cities alone may become a major contributor to climate change.

Construction and urban operations already account for roughly 40 percent of annual energy consumption and 36 percent of greenhouse gas emissions. The production of steel, aluminum, cement, concrete, and plastics is energy-intensive and highly polluting. Decarbonizing these materials is vital to reducing emissions across building lifecycles, yet evidence shows we are building and operating cities beyond safe environmental limits. Solving the problem of sustainable cities is daunting but offers enormous potential for innovation, unleashing new technologies and ushering in a green, smart economy. In 2022, I learned that Saudi Arabia was building the world's first sustainable city: NEOM, a transformative, giga-scale project on the northern Red Sea coast. Carbon-neutral, car-free, nature-positive, and powered by renewable energy, NEOM sets bold environmental standards. During my three years as chief environment officer, I witnessed NEOM already reshaping supply chains, supporting clean manufacturing, renewable energy, and circular-economy practices. Other Middle Eastern giga-projects, including Red Sea Global, Diriyah, Qiddiya, and Murrabba, are similarly driving global change.

Richard Bush is the former chief environment officer of NEOM and is recognized for his work across policy, science and innovation in the field of sustainable development.

Ambitious projects like NEOM demonstrate that systemic innovation can benefit the construction industry, future cities, and society at large. Business will be central to this transition, as sustainability increasingly offers competitive advantage. Global initiatives such as the First Movers Coalition and the First Suppliers Hub illustrate how collective action and strategic collaboration can accelerate decarbonization across industries. Saudi Arabia's example, combining creativity, determination, and proactive collaboration, shows that sustainable urban futures are achievable. My experience at NEOM has reinforced my confidence that humanity can navigate the rise of cities while protecting the planet and ensuring livable, resilient communities for generations to come.

> The presence, or absence, of dugong tells us a lot about the health of an ecosystem.
>
> **Mirey Atallah**
> Head of the UN Environment Programme's Climate for Nature Branch

Spotlight GREEN & BLUE

SAUDI ARABIA

A safe harbor for the dugong

How the Kingdom is protecting sea cows, safeguarding fragile habitats, and ensuring species survival

Haifa Alshammari Riyadh

Once mistaken for mermaids by weary sailors, the dugong — shy, slow-moving marine mammals — now face a very real threat of extinction.

Their closest relative, Steller's sea cow, vanished in the 18th century after relentless hunting. Conservationists warn that unless strong protections are put in place, dugongs could meet the same fate.

But in Saudi Arabia, herds of this elusive species are finding refuge. Along the Red Sea and Arabian Gulf coastlines, dugongs graze peacefully in seagrass meadows — a vital habitat that the Kingdom is determined to safeguard.

"The presence, or absence, of dugong tells us a lot about the health of an ecosystem, its diversity and levels of pollution," said Mirey Atallah, head of the UN Environment Programme's Climate for Nature Branch, commenting on regional conservation efforts.

Dugongs, nicknamed "sea cows," feed exclusively on seagrass in shallow waters. They have fusiform bodies, dolphin-like flippers, and broad tails, but their most striking trait is their reproductive pace.

Females give birth only once every three to seven years, and calves stay with their mothers for up to two years. This slow cycle makes dugongs highly vulnerable to population collapse.

Saudi Arabia is one of the few countries where their survival is being actively secured. The National Center for Wildlife has introduced satellite tracking and long-term studies to monitor dugong movements.

Red Sea Global, the developer behind regenerative tourism projects The Red Sea and AMAALA, has also made dugong protection part of its environmental commitments.

"Dugong are a threatened species and, ecologically, highly distinctive. There is no other similar species in the region," RSG said in a statement.

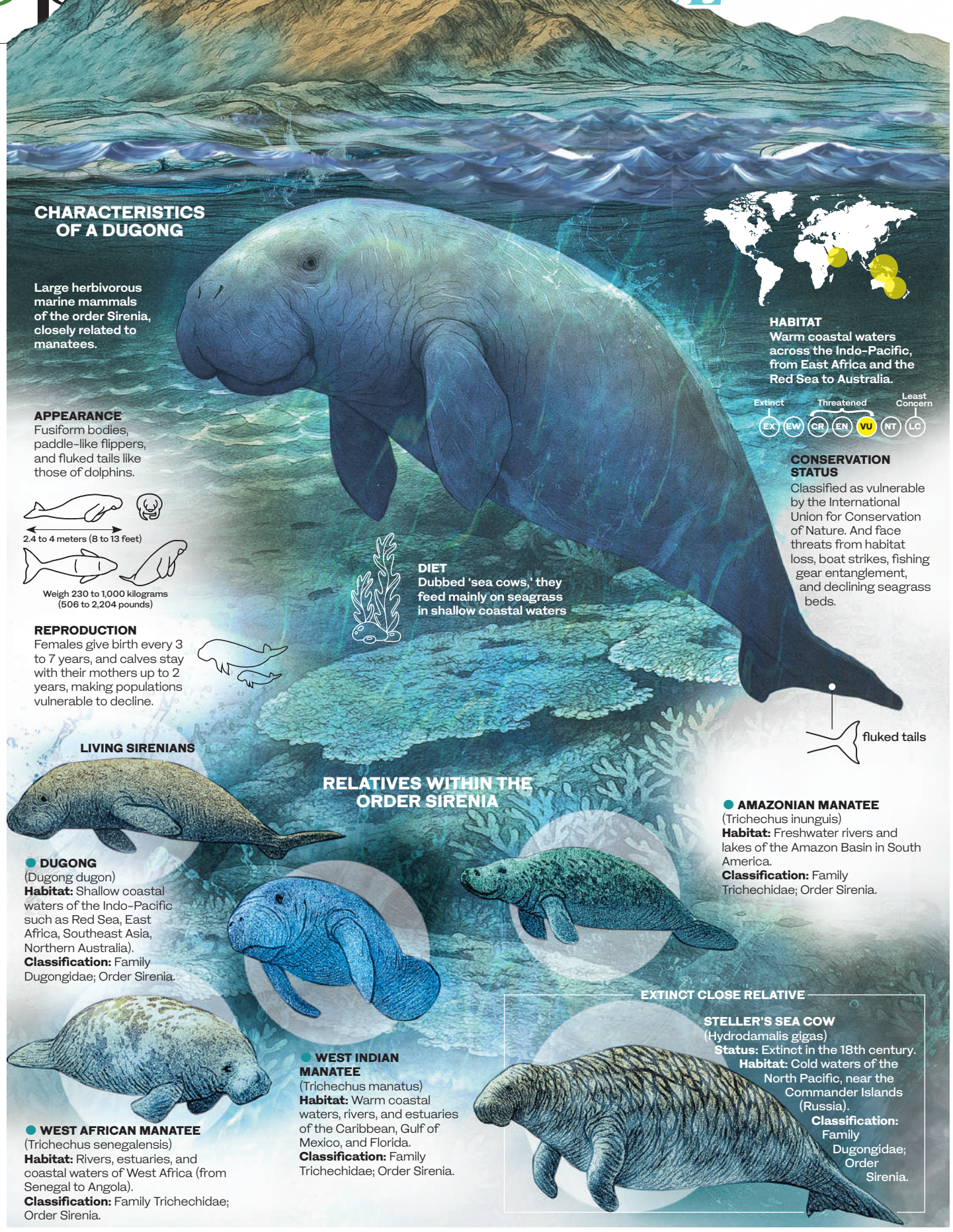
Its scientists are studying foraging grounds and migratory pathways, using drones and even testing machine-learning tools to detect dugongs in aerial surveys. With its extensive seagrass beds, RSG believes the area could become a regional stronghold for dugongs.

The Kingdom's coasts are among the species' last global sanctuaries. The Red Sea offers vital feeding grounds, while the Arabian Gulf is home to one of the world's largest populations, estimated at around 7,000 animals.

These numbers reflect the Gulf's rich seagrass meadows and favorable conditions for seasonal migration.

To ensure their safety, Saudi authorities have introduced strict legislation; hunting or harming dugongs can incur fines of up to SR1 million ($266,465).

If conservation succeeds, future generations may continue to glimpse dugongs gliding through Saudi waters — reminders of how legends of mermaids were born, and of how human care can keep myth and nature alive.



DID YOU KNOW?

1 **A dugong can consume up to 40 kg of seagrass daily, maintaining the health of marine plants.**

2 **Dugongs are between 2 and 3.5 meters in length and weigh 300 to 500 kg.**

3 **They have thick skin, a dolphin-like tail, and live in small groups.**

> **Dugong are a threatened species and, ecologically, highly distinctive. There is no other similar species in the region.**

Saudi Arabia's water sector turns scarcity into opportunity

ARIF ALKALALI

Arif Alkalali is a senior water consultant at the Saudi Ministry of Environment, Water and Agriculture

Green water refers to moisture held in soil and consumed by plants, while blue water describes water in lakes, rivers and aquifers. In Saudi Arabia, both are scarce. Yet despite this extreme aridity, the Kingdom has emerged as a global leader in water governance.

The UN-Water body recently recognized Saudi Arabia as the SDG 6 Country Acceleration Case Study for its progress on integrated water resource management, represented by SDG 6.5.1. That recognition is supported by measurable progress.

Between 2020 and 2023, the Kingdom's score on this indicator jumped from 57 percent to 83 percent — a remarkable leap achieved not by changes in climate, but by the strength of its management, governance and long-term planning.

These improvements are enshrined in Vision 2030, which sets water security at the core of sustainable development.

Saudi Arabia's journey of water innovation dates back more than a century. The late King Abdulaziz ordered the construction of Red Sea water condensing machines in the early 20th century, a prescient recognition that science and technology were essential.

Political commitment has remained constant; the Basic Law of Governance anchors the principle that resources must be developed for the benefit, security and prosperity of society, within a sound scientific framework.

That principle now drives the National Water Strategy, which brings together 10 programs spanning policy, emergency planning, resource development, research and innovation.

The strategy has created a uniquely integrated and coordinated system, with clear institutional mandates and sustainable financial models.

This coherence has produced tangible results. Since the strategy's launch, Saudi Arabia has nearly doubled drinking water production, doubled the capacity of its water conveyance and storage systems, and achieved clean water access for almost 100 percent of the population. At the same time, the reuse of water has nearly tripled.

Privatization is central to sustaining these gains. The Saudi Water Partnership Company now oversees investments worth SR47 billion ($12.5 billion) across the water supply chain, creating opportunities for innovation, efficiency and private-sector participation.

By driving down the cost of desalination and investing in clean energy, the sector has reduced its carbon footprint in line with the Kingdom's pledge to achieve net zero by 2060.

Innovation underpins this transformation. Saudi Arabia is developing plans to reuse 90 percent of urban and industrial water, mining wastewater for precious metals, experimenting with lower-salinity seawater for agriculture, and deploying groundwater metering.

Each of these steps reflects a broader ambition: To transform water scarcity into a platform for technological progress and economic opportunity.