



A DEAD SEA JOURNEY: BIKING THROUGH THE NEGEV



Discovering beauty, fragility and danger in Israel's desert frontier

Story and photos by Uriel Heilman

It's late morning at the lowest place on Earth, and I'm getting ready to begin a two-day bicycle journey at the Dead Sea.

The desert springs and waterfalls of Ein Gedi are on my right, and to my left is the glistening sea at 1,400 feet below sea level. It's said to be one of Israel's most unique and beautiful sites.

But just 50 yards away lies an apparent post-apocalyptic landscape: a closed-off road with buckled and cracked asphalt, sinkholes where the surface of the earth has collapsed, abandoned buildings sitting at odd angles. "Do Not Enter" signs everywhere warn of danger.

This is exactly why I've come.

The Dead Sea has been in rapid retreat for decades, ever since Israel, Jordan and Syria began diverting freshwater upstream and depriving the sea—technically, a saline lake—of inflows from the Jordan River. Mineral extraction and climate change accelerated the shrinkage, and about 40 years ago the sea's southern basin dried up to the point that it effectively split from the north.

Today, the southern Dead Sea is something of a mirage: It's actually a series of evaporation pools controlled on the Israeli side by Dead Sea Works, the mineral-extraction company that harvests potash, bromine, magnesium and salt from the sea. The pools are connected to the genuine Dead Sea by a narrow

Uriel Heilman's bike route along the Dead Sea.

manmade channel lined with land mines on its eastern side, flanking Jordan.

I'd come to learn more about the distinctive geological features of this rapidly changing landscape, the challenges to wildlife and the environment, and the new post-Oct. 7 security concerns in the Israeli communities along the Jordanian border.

My journey would take me along the sea's western shore and, eventually, into the desert at Mt. Sodom—where a great salt pillar called Lot's Wife connects the area's geography to the Bible. I'd end my trip at the remote desert border town of Ein Tamar, where four months earlier a pair of terrorists disguised in Israeli army uniforms snuck across from Jordan and opened fire, injuring two Israeli soldiers before being shot dead.

The greatest hazard

Before leaving, my wife and I discussed what constituted the greatest hazard of my solo ride: Rockets from Yemen? My journey took place in late March, when the Houthis were attacking Israel almost daily. Sinkholes? Dehydration? Snakes?



The Sodom salt faults, where three seasonal rivers spill into the Dead Sea basin to create saline and freshwater springs, and form an oasis attracting birds and other wildlife. The Dead Sea, whose water is known for its restorative benefits, is located at the lowest place on Earth.

No, I said: Israeli drivers. Route 90, which runs beside the sea, is notoriously deadly. I wasn't planning on biking on asphalt, but between sinkholes and the Judean Mountains, there wasn't much room to maneuver.

Riding south from Ein Gedi, I find a dirt path that seems far enough from the sinkholes, whisper a prayer for a safe journey and set off.

Almost all the Dead Sea's estimated 6,000-8,000 sinkholes are in the north. Swallowing up beaches, roads, buildings and a derelict water park, they've rendered much of the Dead Sea unapproachable.

The shrinking sea, which retreats at a rate of about three feet annually, causes fresh groundwater to well up, dissolving the salty ground and triggering unpredictable collapses at the

surface. The sinkholes, which can be over 130 feet wide and 80 feet deep, have destroyed farmland once used to grow dates and have deterred tourists, who can no longer access the sea.

"If we don't do anything to save the Dead Sea, people won't be able to live in places like Ein Gedi because there will be no agriculture and no tourists," warns Nadav Tal, water officer at the environmental organization EcoPeace Middle East. "The Dead Sea is retreating because of man. We caused this thing. We have a responsibility to fix it."

At the current rate, Tal says, the sea will continue retreating for another century. Then, at about 1,740 feet below sea level, evaporation essentially will cease because it will be so salty.

Despite the name, the area around the sea is brimming with life. Freshwater pools fed by underground springs are home to species of fish and microorganisms not found anywhere else on Earth—such as the endangered Dead Sea toothcarp, a tiny silver-colored fish.

Because the harsh conditions in this arid environment make it uninhabitable for most animals, it paradoxically serves as a predator-free haven for other species conditioned to live in the desert.

The mountain canyons are filled with ibex, wolves, hyenas, deer, foxes and porcupines. Among the animals unique to this area are caracals, a feline species; the desert tawny owl, a nocturnal predator; and the Caprimulgus, a nocturnal bird found almost exclusively in the salty areas near Sodom.

"They have adapted to the extreme conditions of the desert, and here they don't have a lot of competition from the more generalist animals," said Oded Keynan, a researcher with the Dead Sea-Arava Science Center.



A surefooted ibex, a species of wild goat, navigates the rocky desert canyons with agility. It was once believed that these animals had wings and could fly.

"The life in the desert offers them a real advantage: They can live with very little water, salty water, high temperatures," said Keynan, who lives in Ein Tamar. "The same thing with the flora. Plant life here produces materials that enable them to deal with highly saline water and dryness and sun and high



Photo: Leo za1/Wikimedia Commons

Distinguished by their long, tufted ears, caracals thrive in a variety of habitats across Africa, the Middle East and parts of Central Asia.

temperatures. Studying them, we've found they have medicinal properties that could help us. We'll lose that medical knowledge if we don't protect the nature."

On to Masada

Biking south, the sinkholes give way to flat terrain and I soon reach Masada, the hilltop fortress where 2,000 years ago an outnumbered Jewish community under attack by Roman legionnaires committed mass suicide rather than falling victim to their enemies. After the Oct. 7 atrocities, I realized for the first time how this seemingly confounding choice could be a preferable alternative to falling into enemy hands.

Today, Masada also marks the Dead Sea's southern terminus, although your atlas might show it as the lake's midpoint.

After a lunch break at the Bar Yehuda Airfield near Masada, I apply a fresh layer of sunscreen, resume riding and soon spot the turquoise channel that connects the Dead Sea proper to the evaporation pools in the southern basin.

My tires suddenly sink into the salty mud of the seabed, and I must traverse the area by foot. When I reach the saltwater channel, the water looks so inviting—even as I know it's just an oleaginous, manmade conduit that helps maintain the



Salt banks build up along the shore of Evaporation Pool No. 5, just north of the hotels of Ein Bokek.

fiction that the Dead Sea hotels are beside the sea. The channel is some 20 feet wide and lined with signs warning of land mines. The Israel-Jordan border runs through the dried-up lakebed.

I cycle along for about 10 miles, alone except for a pair of tan-and-white gazelles, who blend in seamlessly with the desert.

As the hotels at Ein Bokek come into view, the "sea" suddenly reappears. It's Evaporation Pool No. 5, but for most tourists the illusion perseveres: The water looks like the sea, there's a picturesque boardwalk, waves lap up against salt formations along the shore and the water is dotted with tiny salt islands that have become Instagram favorites.

I roll toward the hotels on a paved beachside bike path and head for my hotel spa, where two warm saltwater soaking pools—and freshwater hot tubs—await. At sunset, jackals howling in the mountains serenade me to dinner.



Hotel guests enjoy a salty dip in the Dead Sea, technically Evaporation Pool No. 5.

The last remaining wilderness

The next morning, refreshed and rehydrated, I leave the Dead Sea behind, taking a single-track bike trail, Nahal Pratsim, deep into a desert canyon where the only sign of civilization is a surveillance blimp in the sky watching over Israel's Dimona nuclear facility. In this tiny country, the desert is the last remaining wilderness, and much of it is set aside for military use.

The trail narrows and the canyon's walls close in, offering me some rare shade. But I dare not dilly-dally in the shadows: The sandy canyon walls are so brittle they can collapse at any moment.

I follow the serpentine route for over an hour until the "flour caves," where I rise up onto the desert plateau. I pedal toward a distant sign where I find an old army artillery box labeled "Trail Library." It's filled with books.

Soon I see the Dead Sea Works factory, with its dystopian-looking pipes and smokestacks. At the Moshe Novomeiski Visitor Center, guide Leon Romanchuk demonstrates the processes by which Dead Sea Works' parent company, ICL Group (formerly Israel Chemicals Ltd.), extracts minerals from the seawater.



The fragile walls of the beautiful but dangerous canyons located in Nahal Pratzim are patterned with marble-like striations.



Dead Sea Works' main facility in Sodom, where potash, bromine, magnesium and salt are extracted from the water. The original company was founded in 1929. It now makes table salt, deicers and cosmetics, and is the world's 4th largest producer of potash.

Romanchuk blames the sea's shrinkage primarily on upstream diversion of freshwater for drinking and agriculture; ICL returns to the sea about two-thirds of the water it extracts, accounting for "just" 25% of the sea's annual retreat. If not for the channel ICL built to ferry water from the northern Dead Sea to the evaporation pools, he says, there'd be no water where the hotels are located and tourism would dry up.

The salt ICL brings in with that water creates another problem, however: salt buildup on the seabed. That raises water levels, threatening the hotel zone with flooding. In 2012, Israel's government ordered ICL to scrape out the salt, and today ICL removes some 565 million cubic feet of salt from the sea annually. Environmentalists and the company are at odds about where to put it.

Meanwhile, the minerals ICL extracts make their way into everything from mobile phones to food—hailed away via an 11-mile conveyer belt, then to trucks and finally onto ships at Ashdod's port.

ICL's work is not without controversy. An Israeli State Comptroller's report in March cited the company for burying waste byproducts, water leakage from its evaporation pools and

ecologically damaging seepage of potash from its conveyer belt. Critics want more protection for local wildlife habitats.

"We need to find the balance between society, economy and nature," Romanchuk says, echoing the company line.

Back on my bike, I head to my final destination: Ein Tamar, an isolated town of 350 flanked by the Jordanian border. Despite the barbed-wire fences, mines and army patrols, it's not a hermetic border: Smugglers have long trafficked illicit arms and drugs through the area.

Since Oct. 7, the main concern is security. Iran has been using the Israel-Jordan frontier to smuggle weapons to Palestinians in the West Bank in a bid to radicalize the region, and the specter of Ein Tamar being infiltrated or overrun by terrorists is omnipresent. If Islamic extremists were to topple the monarchy in Jordan, whose population is 50% of Palestinian origin, the danger would be acute.

As I bike around Ein Tamar, I encounter a member of the local security squad, Michael, sitting on his front porch, his automatic weapon by his side. His job is to defend the town, but he's also protecting his family. Just yards away is the town's perimeter fence, which is full of holes.

The border is three miles away and there's military in the area, but not as much as he'd like.

"We feel a greater military presence but also more tension since Oct. 7," said Michael, who withheld his full name.

It's getting late and I need to catch the last bus northward before dark. My legs throbbing, I cycle out of town past a hidden spring, hiking trails that snake into the desert and a wildlife sanctuary with stunning views. The setting sun paints Jordan's mountains a brilliant red.

The peaceful vista belies the hidden dangers at the Dead Sea—for border communities vulnerable to terrorists, animals at risk from industrial manufacturing and beaches threatened by sinkholes.

But for the moment the breathtaking vista blots out these concerns. All I can think of is planning my next desert adventure. 🌄



Appearing in the aftermath of a rare Dead Sea downpour, a rainbow makes for a spectacular sight.