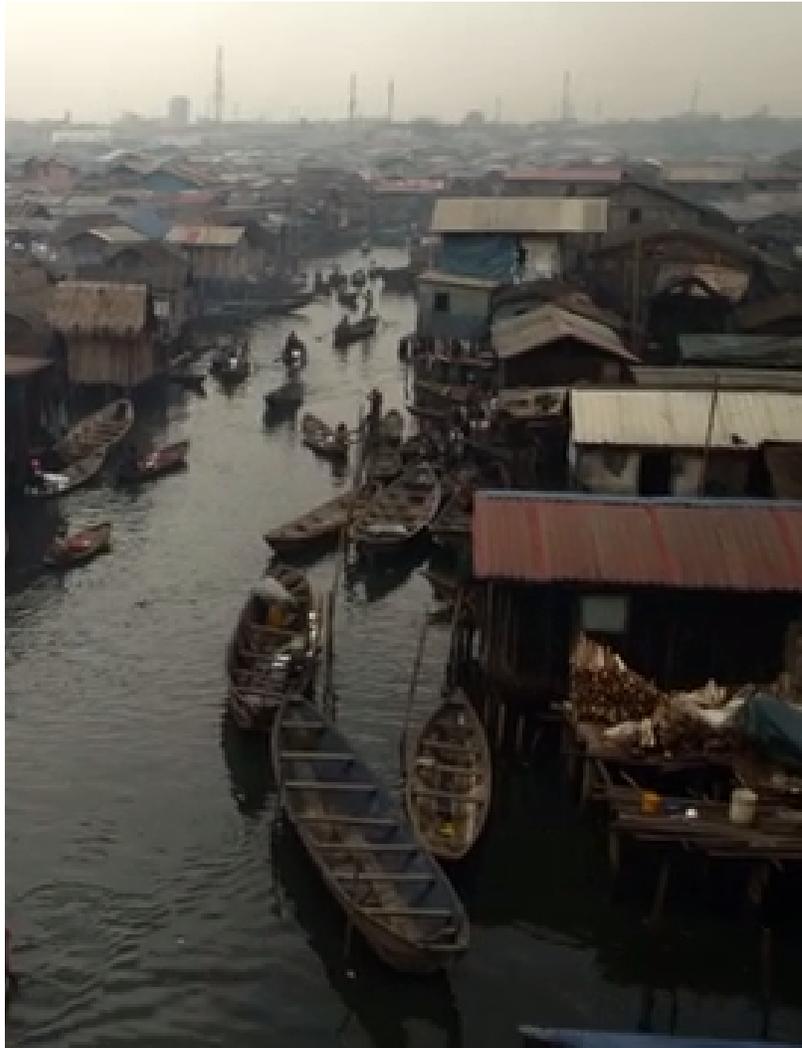


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## THE LONG VIEW

*Edward Burtynsky's quest to photograph a changing planet.*

By Raffi Khatchadourian



*A sprawling slum of houses on stilts, built over a lagoon in Lagos, Nigeria, a city that Burtynsky has described as a “hyper-crucible of globalism.” As Lagos is transformed by the forces of commerce and climate change, it offers a view of what he calls “large-scale systems that impress themselves on the land.”*

MAKOKO, LAGOS / FOOTAGE COURTESY EDWARD BURTYNSKY / THE ANTHROPOCENE PROJECT

Our helicopter was heading over the Niger Delta, across a vast and unstable sky, with gray clouds surging above. I was sitting behind the pilot, and behind me, gazing out a starboard window, was Edward Burtynsky, a Canadian photographer known for his sweeping images of industrial projects and their effects on the environment. For three decades, he has been documenting colossal mines, quarries, dams, roadways, factories, and trash piles—telling a story, frame by frame, of a planet

reshaped by human ambition. For one seminal project, sixteen years ago, he travelled to Bangladesh to shoot decommissioned oil tankers that were being ripped apart by barefoot men with cutting torches. Those images of monumental debris—angular masses that appear to emerge from sediment like alien geology—remain transfixing. Carefully choreographed, shot in hazy and ethereal light, they echo the sublime power of a Turner landscape even as they portray a reckoning with garbage.

Burtynsky had hired our helicopter for four hours, at a rate of two dollars per second, to document the ravages of oil theft in the estuaries along Nigeria's southern coast. Since crude was discovered in Nigeria, in 1956, it has brought wealth and corruption, impoverishment and armed conflict—a global symbol of squandered possibility. “Wherever there is oil, especially in developing countries, by and large there is a lot of pilfering, and society doesn't really enjoy the profits,” Burtynsky had told me. “In the Niger Delta, the pushback from the have-nots has been to go in there and start pirating the oil.” In recent years, parts of the delta have taken on the atmosphere of a war zone: hidden among mangroves and low bush, villagers and local militias have established countless makeshift distilleries to refine crude stolen from pipelines, while dumping tons of oleaginous waste back into the ground. The government has estimated that two hundred and fifty thousand barrels are stolen daily, but nobody really knows. Last year, Nigeria's newly elected President, Muhammadu Buhari, vowed to end the theft, noting, “The amount involved is mind-boggling.”

In the heat of the helicopter's cabin, Burtynsky adjusted a pair of orange-tinted sunglasses on his nose. He was wearing jeans, a T-shirt, and a loose button-down, to shield his arms from the sun. His large frame was compressed into his seat, and—because he would be shooting out an open door—he was buckled to a military-grade safety harness. As sweat dampened his graying hair and goatee, he had begun to take on the faded crispness of an engineer logging too many hours in the field.

At the age of sixty-one, Burtynsky conducts his shoots with unceasing energy—waking at dawn, working past midnight—and rarely succumbs to irritability, an easygoingness polished by years of creative adversity in difficult places. He had gone up in the helicopter two days earlier, but the conditions—bright sunlight that he classified as “snarky”—had been less than ideal. He spent the following day at a military airstrip in

Port Harcourt, the regional capital, debating whether to go up again. He prefers to photograph in bright overcast, when shadows fade away. As he told me, “When the light is soft, you sense the volume of a place.” Rain would ruin the shoot, but so would clear skies, and the weather was mercurial. Few photographers can spend two dollars per second for a flight, and even for Burtynsky—whose prints sell for tens of thousands of dollars, and who can raise millions for his projects—the cost is significant. “I wonder if we should risk it,” he had murmured. He munched on homemade granola. He napped on metal chairs. He decided not to risk it.

The next morning, though, a cloud canopy seemed like it might hold, and so he told his producer, Jim Panou, to ready the aircraft. Panou has been working with Burtynsky for more than a decade, solving logistical problems with a hardheaded intensity that is belied by his soft, rounded features. A photographer in his own right, he devotes much of his time to working on Burtynsky’s international shoots. Using Google Earth, Panou had scanned hundreds of square miles of the delta in search of the most dramatic of the illicit distilleries. Everywhere we went, he carried two iPads, and even as we waited in the military airport he was still searching for hidden sites: “Ooh, that’s a pretty hellish one.” Burtynsky told me, “He’s like an extension of my consciousness.”

As the two men prepared in the chopper on the tarmac, very little needed to be said. With Panou’s help, Burtynsky readied his gear, and then he fell into contemplation. “Some birds over the runway,” the pilot announced, and he joked about how much extra it would cost if he lifted off and had to avoid them: “Put a big old barrel back there and put hundred-dollar bills in.” Burtynsky did not respond; he sat silently as we waited for the flock to pass. “O.K.,” the pilot said. “Ready for takeoff.”

**P**ort Harcourt is notorious for kidnappings, but from a helicopter at a thousand feet it looks sleepy. Along its perimeter, large boxy houses, apparently newly built, were partly submerged in floodwater. Then the cityscape gave way to lush vegetation, periodically interrupted by industry: way stations for pipelines and isolated oil-production facilities, some of them shut down, most of them servicing multinational companies. We passed an outpost flaring gas across the surface of rectangular pools of water; others flared skyward. There were hundreds of facilities in the bush—so many that pilots ferrying roughnecks sometimes have to consult illustrated guidebooks.

*“Remind me, what’s the difference between a metaphor and a simile?”*

“This is the most contested landscape that I’ve photographed,” Burtynsky told me. Between 1966 and 1999, a series of military dictatorships dominated Nigeria’s politics and offered special protections to the oil industry. Millions of barrels of crude were spilled into the Delta, ruining farms and fisheries, the foundation of the region’s economy. By the nineteen-nineties, the pollution had grown so pervasive that Ken Saro-Wiwa, the activist and writer, famously described it as an “omnicidal” weapon —“human life, flora, fauna, the air, fall at its feet, and finally, the land itself dies.” In 1995, amid international protests, the authorities executed him.

Over the years, conflict in the delta has escalated and ebbed, depending upon Nigeria’s political climate and the price of oil. Omolade Adunbi, the author of “Oil Wealth and Insurgency in Nigeria,” told me, “Imagine living in an area and you are denied access to your livelihood, and even if you wanted to find an alternative there is none that exists.” The illicit distilleries, in other words, were emblems of both criminality and victimhood —belonging to a cycle of damage that grew as it caused more people to commit more ecological harm.

Beyond a wide river, the lushness began to diminish. Large swaths of vegetation appeared blackened and shrivelled, revealing miles of eerily linear markings, forming grids—the residual imprint of seismic explosives that geologists had detonated in search of oil. Creeks and man-made canals held water that swirled in a range of toxic hues: umber-slate, or milky green, or shades of blue-gray that were indistinguishable from the opalescent sheen-coated soil. Here and there clusters of dead mangroves, bleached the color of bone by the sun, clung to the soil.

The helicopter descended to four hundred and fifty feet. “I always had this rule,” Burtynsky told me. “Shoot at no higher than seven hundred feet—eight hundred, max —because as soon as you go past that all the details become insignificant. The landscape starts becoming more pattern, less recognizable.” We were hovering over our first destination: a canal that Burtynsky had nicknamed Snoopy, for the shape of a large patch of oil in the water. The canal was lined with rows of homemade distilleries—rusted cube-shaped ovens that sprouted long pipes, some ending in runoff pools. Since Buhari came to office, a military task force had begun to crack down on the theft, and

many sites were charred black from attacks. But a few, apparently rehabilitated, demonstrated activity: a faint plume, a nearby tent. Before takeoff, the pilot had warned Burtynsky that men on the ground might fire at the helicopter. If that happened, he said, he would take evasive maneuvers.

Panou, an iPad in hand, was focussed on the shoot. “On the water there’s much more sheen than the other day,” he said. “Pay attention to that aspect of it in your shooting.”

“Are we clear to open the door?” Burtynsky asked.

“Yeah,” the pilot said.

While we hovered over the location, there was a burst of activity on the ground: some men dashed into a tent, then headed for the canal. “Eight personnel scrambling to get on a boat,” the pilot warned. “Watch out for gunfire.”

With the door open, the *thud-thud* of the engines grew louder, and the cabin filled with exhaust. Burtynsky was peering into the viewfinder of an eight-pound digital Hasselblad. While exploring angles on the landscape, he bent at the waist, swaying from side to side. The camera sat atop a handheld gyrostabilizer, a compact cylindrical device that weighs an additional six pounds, and contains two wheels spinning at twenty thousand r.p.m.s, providing a constant counterforce against jolts or vibration.

At times, Burtynsky leaned out the side of the helicopter, his body extending so far beyond the doorframe that the downwash flattened his hair against his skull. He didn’t notice. He told me that he enters a meditative state behind the lens: waiting for the flickering moments of alignment that occur when a view of the landscape shifts from discordance into order. “You kind of dial in to a frequency, and then you start going into deep concentration,” he said. “You try to let the subject tell you where it is.”

The co-pilot’s voice crackled in our headsets to inform us that the men below were moving: “A guy is in a position, standing right on top of the boat.”

“I am going to hold this altitude here a little bit, Ed, for the threat,” the pilot said. “Once that boat clears that first turn, I can descend.” The boat, it seemed, was fleeing *us*, and Burtynsky tracked its motion through the camera, incorporating it into his frame. We arced around the men, and, as their wake stirred the oil-covered water, he took a barrage of photographs. The light was warm, diffuse, ideal, but then, suddenly, the pilot issued a clipped order: “Close the door, please.” A light on the dashboard signalled an urgent mechanical problem. “I am shutting down engine No. 1,” he said, and then veered back to the airstrip.

On the ground in Port Harcourt, while a maintenance crew studied the chopper, Burtynsky rushed to a briefing room with Panou, to review images from the shoot. He had taken a hundred and thirteen. Scrolling through them on a laptop, Panou muttered, “This is just wonderful light, beautiful.” Some photos had the texture of neo-Expressionist paintings: darkly gorgeous portraits of devastation. “It’s like a lost civilization,” Burtynsky said. “It’s otherworldly.” The men fleeing our helicopter were transformed by his camera, their escape now framed as an elegiac narrative: solitary figures traversing an apocalyptic topography. I could picture the image in a gallery, and a viewer standing before it, at first wondering what she was even looking at, then noticing the tiny boat and grasping that the endless, horizonless muck was a landscape. But what would anyone be doing in such a place? And what to make of the unfamiliar rusted equipment, or the seismic lines across the earth? Burtynsky thought that several images were exhibition-worthy, and as Panou scrolled he grew more excited—until, at one point, he caught himself and said, “Look at what we’re calling jewels!”

*Burtynsky seeks moments when the view of a landscape falls into order: “You try to let the subject tell you where it is.”*  
“OIL BUNKERING #2, NIGER DELTA, NIGERIA 2016” / PHOTOGRAPH BY EDWARD BURTYNSKY

**B**urtynsky’s ongoing effort to photograph industry has evolved into something of an industrial process itself. Before we arrived in the delta, Panou had spent months anticipating problems that Nigeria might offer a visitor with a two-week schedule and more than a hundred thousand dollars’ worth of equipment. The attention to detail extended to our entry at Lagos’s Murtala Muhammed International Airport, in March. The head of the airport, a brusque, pudgy official in traditional dress, met us

at the gangway and ushered us through the bureaucracy within minutes. “They didn’t even look at our gear,” Burtynsky said with amazement, as porters hauled off two dozen bags.

The luggage contained two Hasselblads, two Canons, two Sonys, and a Red Epic, capable of shooting film-quality movies. There were eleven carefully wrapped precision lenses, three laptops, and six two-terabyte hard drives. There were two large drones, handmade in the Pacific Northwest by a company that specializes in aerial equipment for photographers. And, for the drones, there were spare parts, maintenance gear, and, crucially, high-powered batteries: metallic bricks that collectively weighed eighty pounds, and often were trouble at airports. Amid all that, Burtynsky had packed just a few personal items: some changes of clothes, a baseball cap, a book about geology, which he barely had time to look at.

Burtynsky has never liked working fast and light. He began shooting seriously in the nineteen-seventies with a large-format view camera, a heavy tripod, and a drape. A single shot could take twenty minutes to prepare. When he was a student, an instructor urged him to try photographing people on sidewalks, and, Burtynsky told me, “I spent six months wandering the streets trying to be Garry Winogrand, and it just wasn’t me.” What excited him, then as now, was grand expeditionary photography from the turn of the twentieth century, when naturalism and modernism pushed up against each other. He was in awe of Carleton Watkins, who became famous for his meticulous images of Yosemite, shot on huge custom-made glass plates, or with a stereoscopic camera—an early attempt at 3-D. To lug his equipment, Watkins travelled with a dozen mules, or with chartered railroad cars hitched to the Union Pacific. “I could sense going to these places,” Burtynsky told me. “The work had the excitement and straightforwardness of a well-seen and well-rendered view of the world.”

Like Watkins, Burtynsky has built a reputation on ambitious projects that double as tests of stamina. “Oil,” a six-pound book published in 2009, contains a decade’s worth of work, exploring the effect of crude upon the earth. He started his most recent project, “Water,” in 2008, and it took five years, and travel to ten countries, to finish. Burtynsky shot mesmerizing vistas of mountain reservoirs, desiccated lakes, agriculture, and suburban sprawl. He also joined with the filmmaker Jennifer Baichwal to co-direct

“Watermark,” a documentary that combines his stills from the series with cinematography. “I see myself as a filmmaker in training,” he told me. The storytelling in “Watermark” is low in exposition and high in visual splendor. In one shot, the frame is filled with the body of a worker; as the camera pulls back, we see that he is facing Xiluodu Dam, on the Yangtze River—one of the world’s tallest dams. Over the course of a minute, the shot subverts our sense of scale. As Burtynsky put it, “That thing just keeps getting bigger, and the guy is just diminishing and diminishing.” The scene ends in a terrifying panorama of engineering that reduces the sole visible person to insignificance.

Such imagery can be potent, but it can also attract criticism. Paul Roth, who curated “Oil” at the Corcoran Gallery of Art, told me, “There have always been people suspicious of Ed: ‘Is everything going on in the world really fodder for your aesthetic?’ ” Where Burtynsky’s epic industrial landscapes are least successful, they convey beauty and immensity without being intellectually engaging. “They run the risk of becoming mere pretty pictures,” *Artforum* noted in 2002, citing a series he once made of shipping containers stacked, like colorful blocks, in a shipyard. Over the years, greater skepticism has been voiced about what is, arguably, a less problematic issue: Burtynsky’s inclination to depict toxic landscapes in visually arresting terms. A critic responding to “Oil” wondered whether the fusing of beauty with monumentalism, of extreme photographic detachment with extreme ecological damage, could trigger only apathy as a response. Paul Roth had a different view: “Maybe these people are a bit immune to the sublime—being terribly anxious while also being attracted to the beauty of an image.”

In fact, throughout his career, Burtynsky has used his camera to create painterly abstractions as often as he has to create sublime imagery. While working on “Water,” he wrestled with the sprawling and complex nature of the subject, and found himself seeking higher and higher vantage points. In India, he used a hydraulic pole to shoot an overhead view of a religious festival on the Ganges that attracts tens of millions of people. Eventually, he left the ground entirely, using helicopters and fixed-wing airplanes. As he drifted upward, his images became flatter, stranger: visual puzzles.

I first met Burtynsky a year before the delta shoot, when he was exhibiting images from “Water” at his Toronto gallery in a joint show with the late David Shapiro, the New

York artist, who had painted a series of geometric abstractions based on circles in squares. Early aerial photography, especially of battle zones in the First World War, helped give rise to abstraction in modern painting, and abstraction in painting in turn influenced photography; the joint show emphasized the symbiosis. Burtynsky's photos, of circular pivot-irrigation systems in the Texas Panhandle, had been shot from above, looking straight down, in a way that recalled Shapiro's work. On first inspection, the photos look like panels of wood, stained in sepia and gray, with circles and lines carved into them, but when you stand close the earth becomes readable in exquisite detail. "Farming is the single largest thing we've done to transform the surface of the planet," Burtynsky told me. "This aquifer, they estimate, contains eight Lake Eries of water, and they have already nearly depleted one. It's like draining the Great Lakes, but we don't see it."

*On shoots, Burtynsky stays tirelessly in "execute mode," balancing aesthetics and logistics.*

PHOTOGRAPH BY BENEDICTE KURZEN / NOOR FOR THE NEW YORKER

At the time, Burtynsky was launching his latest collaboration with Baichwal, a film and book about the Anthropocene—a term coined by scientists who believe that the present geological epoch is defined by humanity's planetary impact. "We were on tour for 'Watermark,' and we were talking about what this next project should be," Baichwal recalled. "I said, 'I think we should do Anthropocene,' and he said, 'Nobody knows what that means. Wouldn't it be interesting if we could let the world know?'"

From his Toronto gallery, Burtynsky drove me to his home—a brick Victorian on a leafy street near a university—where he and Baichwal and a team of researchers were holding their first meeting for the new project. Burtynsky set out bread and cheese, salad, and olives on a hardwood table. "What took out the dinosaurs was a meteor impact," he said. "We, the human species, are now that impact. Humans are shifting the balance of the planet, and the choice rests within us to destroy it all, or not. It's a huge, complex thing to solve. We are a predator species run amok."

After lunch, we climbed to the second floor, to a home office, where the team grappled with the challenge of telling such a conceptually ambitious and far-reaching story. Strictly speaking, the Anthropocene is a matter of geology: measuring humanity's dominance over nature by identifying traces in rock stratigraphy. Because many of the epoch's defining effects—climate change, ocean acidification, deforestation, mass extinction—are unfolding at a rate faster than geology typically records, scientists have focussed on evidence that is easier to identify: fallout from nuclear tests or plastic residues. Burtynsky and Baichwal faced a related problem while making the film: most of the phenomena are either invisible or marked by an absence.

The team worked out themes and locations, covering a wall with index cards. Was kudzu in Mississippi the way to represent invasive species? For mass extinction, what about filming an African northern white rhino? Which industrial megaprojects were best to illustrate human terraforming? There was the Congo's forty-thousand-megawatt Grand Inga Dam project, but maybe it was too inchoate to shoot. Baichwal suggested an island that the Chinese were building in the South China Sea. "Is there anything more human than human-created land?" she asked.

At that time, Nigeria was one of many possible destinations. "It's a tough one in terms of danger," Baichwal said about the delta. "I'm not sure how we are going to get in there." But in the coming months Burtynsky grew more interested in the country. One of his collectors had urged him to do a book on Africa, and after a visit to Kenya he agreed, believing that there would be overlap between the projects. Across the continent, he saw an epic story of industrialization and economic colonialism, hope and environmental degradation. Documenting it, he expected, would take many years. "The growth figures for Africa are staggering—*frightening*," he said. "It's the next big global play."

Outside Murtala Muhammed International Airport, two S.U.V.s were waiting at the curb. Nigeria was suffering from a countrywide fuel shortage, so Panou had hired them from a company with its own reserves. Each vehicle came with an off-duty police officer (who remained at all times uniformed and armed), and, for assignments of potentially heightened danger, Panou had brought in a team from the State Security

Service—a domestic intelligence agency with a portfolio that includes guarding the President. Amused by the touch of overkill, Burtynsky called the men “my army.”

In the field, Burtynsky shifted freely between projects, and between photographic media. Primarily with the *Anthropocene* film in mind, he spent a morning in Lagos taking video at a surreal multibillion-dollar complex called Eko Atlantic, where developers were dredging sediment from the Gulf of Guinea to construct a four-square-mile peninsula—the first phase of their plan to build a glimmering, privately run city. “This is terraforming on a grand scale,” he said, as our S.U.V. jostled across artificial dunes.

Burtynsky was particularly interested in the project’s ocean retaining wall. In Lagos, he often referred to a study by the climatologist James Hansen, which argued that sea levels could rise much faster than previously estimated. “What we thought was going to happen in fifty years could happen in twenty,” Burtynsky told people. But the city wasn’t retreating from the gulf; it was pushing farther into it. Traversing the artificial peninsula, our S.U.V. passed a concrete batching plant making dolosse—massive pods, resembling jacks, used to build the seawall. “Concrete is something that goes deep into the future,” Burtynsky said. “Those things, once buried under sand—they could be uncovered in, like, two million years. That is what the *Anthropocene* is about.”

A few days later, Burtynsky filmed at Makoko—a shantytown with the population of a small city, where people live in houses propped on stilts over Lagos Lagoon. The structures, built with rudimentary materials—rough-hewn timber, sun-bleached corrugated metal, thatch, tarps—were linked by makeshift bridges, drooping electrical wires, and laundry lines. The waterways were shallow and murky with sediment. Unlike Eko Atlantic, the ramshackle settlement had no fortifications to protect it from the changing climate. Sooner or later, Makoko will be imperilled.

Panou had hired a catamaran for the team, and, as it pulled into the slum’s primary waterway, residents in wooden canoes quickly surrounded us. “We’re in the thick of it,” Burtynsky said.

“It’s like Venice,” Panou said.

In no time, people began to climb aboard, including several community leaders, or *baales*, who were displeased that we had come without their permission. Some of the men yelled, and for a few moments it looked as though the deck might be mobbed. The son of one of the *baales*—a young man named Sunday Shemedede—told me, “You can’t just come into this community and do *anything*. A lot of people come to take pictures, and they show that things are not good. Then the government wants to tear this place down.” In 2012, he said, an order was issued to evacuate Makoko, and demolition equipment was quickly dispatched: “They came with police, and even shot one of our men. We got a lawyer, and they stopped. They were saying, ‘This is an eyesore.’ But my family has been in Makoko for four generations.”

*As Burtynsky increasingly makes use of aerial photography, his images have become flatter, stranger: visual puzzles. In Lagos, while reviewing overhead shots of sawmills processing rain-forest timber, he said, “People will like those. You don’t know what it is.”*

“SAW MILLS #1, LAGOS, NIGERIA 2016” / PHOTOGRAPH BY EDWARD BURTYNSKY

Burtynsky tried to calm matters by inviting one of the *baales* to look at his work on a laptop. Scrolling through images, he explained, “I am a painter, but I use a camera—and I don’t speak badly.” The *baale* watched, unmoved. Speaking badly was not entirely the point, it turned out. The issue was primarily one of respect, a Yoruba-speaking member of Burtynsky’s crew explained. With further discussion (and some cash), respect was communicated, the deck cleared, and shooting commenced.

Such encounters underscored the complications of landscape photography in a place like Lagos—particularly in the dense, impoverished areas that interested Burtynsky. The city was no longer defined by lawlessness, as it had been under military rule, but it still felt precarious. A strong governor had recently taken steps to elevate Lagos from the decades of neglect. Bus lanes were created, bridges built, garbage collected. In some areas, the effort to clear slums or informal markets for construction projects even began to appear too aggressive. “It’s as if the government has gone to the other extreme, almost trying to rubber-stamp a false identity onto the city,” one Lagosian told me. Workmen with Chinese companies could be seen building a new rail line, while Chinese scrap merchants hauled off derelict oil tankers dumped on beaches.

The new dynamism was partly what had drawn Burtynsky to the city: Lagos, he told me, was “a hyper-crucible of globalism.” Yet, for many residents—contending with little or no electricity, snarled traffic, low wages, and the whims of local bosses—life remained difficult. In the roughest areas, street toughs had joined with violent groups linked to universities and high-level political patronage networks. Johnson Ayodele, a criminologist at Lagos State University, told me, “Where I live, these boys came to avenge the death of one of their members. They got the person they targeted; then they started shooting sporadically, and in the process they killed a five-year-old boy. They shot a man in the back, and he died that day. That should give you a good picture of how secure our environment is.”

One afternoon, Burtynsky decided to photograph two disused oil rigs off Lagos Island. A Nigerian firm had been operating them for multinationals, until millions of dollars disappeared in a deal gone bad, and the state seized the assets. Once engines of wealth, the rigs were now rusting next to a roadside promenade, near one of the island’s poorest communities. Suspecting that a photo might work for his Africa book, Burtynsky set up a position on the embankment. Ditches dug to repair underground pipes looked like bombed-out craters. The State Security men waved away anyone in the vicinity—a gesture that so enraged one man that he began to issue a cascade of threats. An officer brandished a machine gun and taunted him: “Come and take this away from me.” The State Security Service has a reputation for acting with impunity, and for a moment the possibility of violence hung in the air. Burtynsky, seated at a laptop with Panou, barely glanced at the commotion.

**I**n Lagos, Burtynsky never picked up a camera to photograph the human drama around him. He was seeking to document not the struggles of individual Nigerians but the aggregate effect of those struggles, how they formed a combined image. “What I am interested in is how to describe large-scale human systems that impress themselves upon the land,” he told me. A term that he often uses to describe his work, “residual landscapes,” implied an even more remote interest: man-made terrain distinct from people. Flying into Lagos, Burtynsky had been struck by what he saw—an endless urban expanse with virtually no vegetation. He wanted to capture it in panorama, by shooting from the rooftop of a tall building. With an estimated twenty-one million inhabitants crammed together, Lagos could easily serve as a symbol of overpopulation.

But, given the city's compressed human need and deep sociological complexity, what did it mean to look at its residents only from on high? The moral complications that came with representing a living community—struggling with serious economic and political challenges, on a continent recovering from the legacy of colonialism—differed greatly from shooting abandoned quarries or First World megafarms.

One evening in our hotel, Burtynsky sent me an e-mail with the subject heading “Worth a read.” It contained an essay by an art historian at McGill University, a meditation on Rem Koolhaas's trip to Lagos sixteen years earlier. From the ground, Koolhaas had seen an “aura of apocalyptic violence.” From a helicopter, he had seen the opposite: evidence of brilliantly improvised and self-organizing urban planning. Koolhaas came to believe that Lagos was a “paradigmatic case-study of a city at the forefront of globalizing modernity,” and began to make the radical argument that many of the city's dysfunctions should be heralded rather than fixed. Numerous critics disputed this, and it was not hard to see why. Whether from the ground or the air, Koolhaas's vision of the city did not fully take into account the reality of life there. Lagos existed in tension between order and chaos, industry and corruption, built by inhabitants acting with creativity, frustration, longing, theft, laziness, poverty, wealth—the full range of human experience. The challenge was to depict it without resorting to caricature.

Burtynsky and Panou and their hired crew spent several days hunting for a high-rise on Lagos Island. After years of blight, most of the tall buildings there stood empty. One afternoon, their convoy drove up to the old headquarters of the Ministry of Defense, a crumbling edifice built in the nineteen sixties, now occupied by squatters. Inside, the floors were bare concrete; abandoned official papers were scattered in piles. A stairwell wound upward near an open elevator shaft, and Burtynsky ran up, but after climbing six flights he decided that there was an easier way. Instead of using a rooftop, he would launch a drone. Unlike a helicopter, a drone could fly at relatively low altitudes. Unlike a rooftop, it could take his camera wherever he wanted.

*In the Niger Delta, Burtynsky shot illicit oil refineries, which dump tons of waste into the ground. His work, a curator says, inspires the sensation of “being terribly anxious while also being attracted to the beauty of an image.”*

“OIL BUNKERING #4, NIGER DELTA, NIGERIA 2016” / PHOTOGRAPH BY EDWARD BURTYNSKY

Burtynsky and his crew made their way to Towry Street, a quiet alley that could be used as a staging area for the drone. The alley ran into a busy thoroughfare, and, on a corner opposite a shop for church vestments, a thin man under an umbrella used an air compressor to fill the tires of cars in rush-hour traffic. Near the staging area, some men were sipping beer under a tarp. The atmosphere was relaxed, congenial. It was 3:30 p.m., and the sun was intense. “It’s not my favorite light, but I like the spot,” Burtynsky said. “We’ll do it in about an hour.” Then he napped.

To operate the device, Burtynsky had brought along another cameraman, Mike Reid, a soft-spoken man from a mill town in northern Ontario. Reid set up the drone on a wooden table, treating it as carefully as if it were a living thing. The device looked like a robotic spider, five feet in diameter. From its abdomen hung a gimbal with three motors that make thousands of corrections a second, to steady the camera in the air. Reid mounted a Hasselblad onto it and dusted the lens.

By early evening, the light had softened—but then, suddenly, the shoot became a race against the darkness. More people congregated at the street café, while onlookers gathered near the air compressor. “Everybody seems to not mind us around,” Burtynsky said. “I guess they can see we’re Canadians.” Then he picked up a metallic frame, filled with electronics, and hung it from a harness around his neck. The system featured an L.C.D. screen, which was linked by radio to a GoPro mounted on the Hasselblad’s viewfinder, and controllers to aim the camera. Someone had to hold up a transponder tethered to the frame with wires; even so, communication with the camera was spotty.

Scouting for a vantage point, Burtynsky had pointed above the shop selling church vestments and said, “My guess is that it’s going to be up in that pocket. You have no idea what you are going to get until you take a look.” Primed up, the drone released a vaguely ominous buzz; then it shot into the sky, scattering dust across the street. It did not take long for Burtynsky to find the vantage point he wanted: an oblique angle on a cluster of buildings at the intersection of two thoroughfares. To activate the shutter, he pulled back a switch, which made a tiny *thwang* as it returned to position.

After the flight, Burtynsky and Panou reviewed the photos. In one, rectilinear streets divided the frame, but some rooftops also appeared to form, in a fortuitous counterpoint, a spiral—Lagos, self-organizing. The shot contained a startling level of detail: as Panou zoomed in from the aerial view to a courtyard, a resident's belongings came into vivid focus. After he zoomed back out, Burtynsky circled the photo with his finger, saying, "This, fantastically big, will just come alive." He then decided to reshoot the scene at eight times the resolution; because the drone could fix its position in the sky, he would be able to recapture the view piecemeal with a longer telephoto lens, then stitch the digital files together in Canada. The extreme resolution implied that Koolhaas's conflicting visions of Lagos—ordered from above, chaotic from the ground—could be united into one image, capturing both the city and its humanity.

In a sense, such technology suggested a profound artistic shift. Cartier-Bresson famously spoke of the photographer's "decisive moment"—the fleeting recognition that something significant is passing before the lens. But what kinds of decisions would a photographer make when he had tools powerful enough to capture *everything*—the furrowed brow of a woman reading a book in a distant window, the weariness of a driver miles away—rendering an entire cityscape while also vacuuming up the tiniest detail? One evening, I asked Burtynsky.

"With my four-by-five camera, I could print a forty-by-fifty-inch print, and you could look at it at a certain level of detail," he said. "With this new technology, I can have the same resolution, but for an image the size of a billboard." He was shooting with a sixty-megapixel camera, and just that week (it pained him to learn) Hasselblad had announced a new hundred-megapixel version. "Increasingly, digital photography is showing us the world in a way we can't see it—that's even beyond my capacity to see." The photographer, in effect, was becoming an adjunct to the camera, which could probe reality at a depth far greater than the eye. Only later, in a studio, sifting through troves of pixellated data, would he settle on an image.

Burtynsky has never found Cartier-Bresson's dictum relevant to his method; he has spoken instead of the "contemplated moment." As he once put it, "You find your way to the image slowly." With each year, digital technology was allowing him to work with greater deliberation. "I feel that we're at an exciting moment," he said. "It wouldn't

excite a conceptual artist so much—it might, it might not—but I work in the world of the gargantuan, trying to define such things, and so it’s exciting for me.”

**T**hroughout our trip, Burtynsky barely wavered from his schedule. “I am in execute mode right now,” he said, jumping out of his S.U.V. at a complex of sawmills along the lagoon: rows of band saws in open sheds, amid rifts of sawdust. Whenever he was not shooting, he was preparing for a shoot. One of the few breaks came on a late afternoon, when he agreed to give a talk at a bar called the Winehouse Lounge, in an affluent neighborhood. The place had the feel of a hipster enclave. Children watched soccer on a flat-screen TV; a wood-panelled chamber was stocked with bottles of wine. The bar was furnished with sofas and armchairs, paintings and drawings.

Burtynsky gave a brief slide show featuring his signature pieces; then he mingled with a sense of ease that grew as he consumed more wine. He chatted with the regional head of Uber, and a photographer from the delta. Papa Omotayo, an architect with a practice in Lagos, told me, “In Nigeria, we are driven by a desire for industrialization, but we are unable to visualize its effect from a wider perspective. His images were stunning in that aspect.” One attendee, an intern at an arts foundation, asked Burtynsky if she could join a shoot. He said yes without hesitating. The next morning, when she showed up at our hotel—sitting quietly near the café with a camera in her bag—he told her he had seen something of his younger self in her determination.

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*Camera-mounted drones allow Burtynsky to find precise aerial vantage points. Above, a drone captures footage from above the sawmills in Lagos.*

FOOTAGE COURTESY EDWARD BURTYNSKY / THE ANTHROPOCENE PROJECT

For much of his childhood, Burtynsky lived in St. Catharines, an industrial town at the edge of Lake Ontario. His parents, Ukrainian immigrants, had survived the Soviet famine of the early thirties, only to be forced into farmwork by the Nazis. They met after the war, in northern Canada, where many Ukrainians had been interned during the First World War, and a vestigial community remained. They moved to Ontario, aspiring to work on farms near the hamlet of Jordan. Instead, once they settled, Burtynsky's father, Peter, found a job on a welding line for General Motors.

In St. Catharines, Burtynsky and his siblings—two sisters and a younger brother—grew up in the nationalist atmosphere of an émigré community whose homeland was unreachable, trapped behind the Iron Curtain. “My first language was Ukrainian,” Burtynsky told me. “I could barely speak English.” (His given name was Taras Buratynsky; he retouched it when he turned thirty.) The family's social life revolved around a Ukrainian social club that Peter had helped build. “In the Ukrainian community, he was seen as the creative-artist type,” Burtynsky said. Peter was an avid landscape painter, and he encouraged his children in art. In 1965, when Burtynsky was ten, his father purchased a darkroom from an elderly widow and rebuilt it in the basement. Among the equipment were several 35-mm. cameras, including an old Minolta, which he handed to his son. Burtynsky took it wherever he went. “I became the kid with the camera,” he later wrote. He photographed friends and shot events at the Ukrainian community center, where he sold prints for seventy-five cents apiece.

In 1967, Burtynsky's father received a diagnosis of cancer—he had been exposed to PCBs at work—and his disposition, which was strict but outgoing, turned more severe. “I was a bit of a daydreamer,” Burtynsky told me. “I was one of those kids who, you'd say, ‘Go sweep the garage,’ and half an hour later I'd be following ants. I'm sure my dad looked at me and was, like, ‘Hopeless’—and he kind of made me feel that way. He got

really short-tempered, probably resentful about what had happened. So I butted heads with him in a bad way. At one point, he said, ‘You’re not going to amount to anything. I’m going to work on your brother.’ ” Burtynsky considered running away, but when he was fifteen Peter’s condition became terminal. “About a month before he died, he told me that I was going to be the man of the house,” Burtynsky recalled. “It kind of made me feel guilty—but it was a relief. I took more responsibility for the family, and assumed direction for my life. There is nothing more motivating than someone who is important to you who says you can’t achieve something. It’s one of those motivators where you say, ‘Fuck you—just watch me.’ ”

Burtynsky helped his mother with janitorial work to support the family. After high school, he got a job at a plant that built frames for trucks—the most gruelling labor he has ever done, he says—and then another on an assembly line for Ford. He was also taking night classes in photography, and he became determined to enroll in a full-time program. In 1976, he entered Ryerson Polytechnic Institute, in Toronto. But he studied intermittently, often returning to industrial labor to pay for school. At one point, he worked in a gold mine in northern Ontario. “It was insane,” he said. “You go down, like, two-thirds of a mile into the earth, and then walk along these drifts for another thousand feet, climb up, and you are somewhere in the middle of fucking rock.”

One summer, Burtynsky returned home to work at G.M., where he held a number of jobs, among them helping to clean up PCBs. The plant offered him a management position and the prospect of steady employment. “My mother kept saying, ‘You got a great job, you can have a house,’ ” he told me. But by then he had already decided to leave: “I felt, in my heart, I wanted to be an artist.”

**A**lthough Burtynsky was the child of a manufacturing town, it didn’t occur to him till later that industry was a subject worthy of artistic investigation. As a student at Ryerson, he was painfully shy—often sitting quietly in the back of the classroom—and uncertain about what he wanted to achieve. But he was ambitious, driven to show his work. “Some of us did not have a skin thick enough to subject our work to the test of public opinion,” Claude Baillargeon, a fellow-student who is now an art historian at Oakland University, recalled. “I envied Ed his ability to do so.”

Gravitating to view cameras early on, Burtynsky sank much of his money into gear. “These are really slow-moving, methodical, contemplative tools,” he told me. “The lenses that I used were largely designed for the commercial world, to do portraits of cars and perfume bottles. Those were the industries that could afford the huge margins for that kind of treatment, which gave you an image that was rich and tonal.” For one assignment, he photographed abandoned mansions in the American South, focussing on their ruined, vine-covered façades. Back in Toronto, he tried selling the prints. “I met him in 1979, at a garage sale,” Jeannie Baxter, then a student at Ryerson, recalled. “I told him he was crazy to charge seventy-five bucks for them. But he was questioning what he was doing. He could see it was a hard way to make a living.”

Burtynsky and Baxter moved in together in 1980 and married five years later. With her encouragement, he built a color darkroom in their basement. What interested him most was the geometry of nature; by shooting wild flora, he hoped to create Pollock-like abstractions. In 1982, he took a two-week road trip through the Allegheny region in search of images, mostly in the swirls of windblown grasses. In Pennsylvania, he got lost. “Somewhere at the fork of a highway, I ended up on the wrong fork,” he recalled. “Rather than going back, there were secondary roads to where I wanted to be, and midway on one of those I ran into this small town called Frackville. It was a coal town. And I got to this one place, and it was all open coal tailings—all the crap that doesn’t have any value. I took a whole bunch of pictures. I started driving, and there was just more and more of it, in every direction.”

*Burtynsky's photos have the texture of neo-Expressionist paintings: darkly gorgeous portraits of devastation.*

“OIL BUNKERING #5, NIGER DELTA, NIGERIA 2016” / PHOTOGRAPH BY EDWARD BURTYNSKY

Burtynsky spent months in his basement enlarging the photos of grasses, but they seemed clichéd, sentimental. Six months later, frustrated, he returned to his contact sheets and stumbled on his Frackville shoot. “I had my eureka moment,” he told me. He began to research mining, and to pay closer attention to photographers who had documented built terrains. Visiting Ottawa, he saw an old photo of a quarry by August Sander. The image—a vast pit presented from a confusing vantage point, suggesting that the world had been tilted on its side—encouraged Burtynsky to explore the

tension between realism and abstraction in manufactured landscapes. In 1983, the government awarded him a grant to travel across Canada, to shoot mines, quarries, and rail cuts—micro-plateaus blasted into mountains to support tracks. Along the way, he realized that he had stumbled upon an idea capacious enough for a career.

Burtynsky worked obsessively, sometimes waiting half a day behind his camera for the right conditions. His artistic references drew heavily from painting: Caspar David Friedrich's romantic panoramas and Jean Dubuffet's flat panels of texture. As if to affirm that these were *residual* landscapes, he rarely included people. He thought of spent quarries as inverted skyscrapers—evidence that matter had been shifted from one area to another—and his pictures were so thoroughly stripped of political motivation that it was hard to imagine them working in the service of either industry or environmentalism. After spending years in one quarry, Burtynsky offered the company a trade: a print to hang in their headquarters in exchange for granite for his kitchen. "So I am showing them pictures, and I go through the whole pile, and the president looks up at me and goes, 'Why did you make these, and why would anybody want them?'"

Through the eighties, Burtynsky gained critical attention—his first serious exhibition, affiliated with the National Gallery of Canada, was in 1988—but he struggled financially. Shortly after he and Baxter married, they opened a printing studio, called Toronto Image Works, and worked furiously to get by. "We knew every single restaurant that served dinner after midnight," she recalled. As the business took up more of his time, Burtynsky became increasingly pessimistic about his art career. Unable to imagine doing commercial photography, he was ready to give up and focus on the printing business, or even to change careers entirely. Then, in 1990, he received a visit from a former investment banker at Bear Stearns who had purchased some of his prints. "He said, 'Why aren't you doing your work?'" Burtynsky told me. "And I said, 'I think it's done. I can't run my business and do my work.'" "The collector urged him to shoot, vowing to purchase ten photos, whatever they were. "He said, 'I am going to make them worth your while.'"

Nicholas Metivier, Burtynsky's chief dealer, in Toronto, told me that a turning point in sales came in 1996, with a large diptych of iron-ore runoff at a nickel mine in Sudbury,

Ontario. The oxide-heavy water—iridescent red-orange, like molten lava—glowed against the black earth. “He went just as the snow melted, because he knew he would get that contrast,” Metivier recalled. “He used a very wide angle lens, and with an eight-by-ten camera he was able to keep horizon lines flat, so you didn’t get the fish-eye effect. The average viewer had no clue that the river was less than three feet wide. They thought it was the size of the Thames. People found it shocking.”

The images, titled “Nickel Tailings #34” and “Nickel Tailings #35,” were pristinely focussed, tidily composed, semi-abstract. They appeared to be saying something forceful about the modern world, but with enough looking that forcefulness began to dissolve: was this a study in ultra-toxicity, or was it a benign terrain transformed by photographic sorcery? (A review in the *Times* later took a severe view, calling the scene “misleading.”) The scale of the landscape might have been inscrutable—Burtynsky left no tell—but it was possible to register that something was off. Looking at the prints, you had the disconcerting sense of knowing and not knowing what was before you.

Nobody bought the photos at first, but curious collectors began to pick through his back catalogue. At the time, Burtynsky said little about his motivations, which sometimes gave rise to confusion. (*Granta* later put “Nickel Tailings #34” on its cover, beside the title “This Overheating World,” though the image had nothing to do with climate change.) “I think he was hiding a bit, so that when you looked at his work the sublimity had more force,” Paul Roth told me. “When he did talk about his motives, he said, ‘I am not out to tell people a unitary story about what they should do to save the earth but, rather, to give people a picture of what it takes to live the way we do.’”

Over the years, as the global consequences of human activity have become unmistakably pressing, Burtynsky has connected his photography more directly with environmentalism. “There has been a discussion for a long time about climate change, but we don’t seem to be ceasing anything,” he said. “That has begun to bring a sense of urgency to me.” And yet in his pictures he still strives to avoid didacticism. At the sawmills, while reviewing the contents of his Hasselblad’s memory card, Burtynsky stopped on an image that verged on total abstraction: logs, shot from above, floating in water murky with sawdust and sediment. They could have been toothpicks in mud. “People will like those,” he told Panou. “You don’t know what it is.”

**I**n Nigeria, Burtynsky was shooting images faster than he could edit them, and it would be months before he could give the work careful scrutiny. From Lagos, he had to fly to India, then to Kenya, for additional shoots. Then there were trips to London, Switzerland, and Germany, for meetings and exhibits. To see the first Nigeria prints, he suggested that I return to Toronto in July, three months after our trip.

For more than thirty years, Burtynsky's studio has occupied space in a century-old brick building designed for a letterpress. The ceilings are high, the floors not entirely level. Tall shelves hold hundreds of books, organized by catalogue numbers on their spines. Burtynsky's photo archives are kept on hard drives in a walk-in antique safe with walls three feet thick. To the extent possible, he controls every aspect of his photographic process. He designed his own software to deal with galleries, and nearly all his photos are printed down the hall, at Image Works, which Jeannie Baxter runs. In 2007, the couple amicably separated; they have two grown daughters. When he is not travelling, an aging Goldendoodle that they share wanders back and forth between her office and his.

*As the global consequences of human activity have become unmistakably pressing, Burtynsky has connected his photography more directly with environmentalism. "There has been a discussion for a long time about climate change, but we don't seem to be ceasing anything," he says. "That has begun to bring a sense of urgency to me."*

**"OIL BUNKERING #1, NIGER DELTA, NIGERIA 2016" / PHOTOGRAPH BY EDWARD BURTYNSKY**

"It's one of those days," Burtynsky said when I arrived. The following morning, he was flying to China, to shoot more dolosse, and then on to Borneo. That afternoon, he also had a meeting at Think2Thing, a 3-D-printing studio that he co-founded in 2013. And he was putting the finishing touches on a book—a slim volume, titled "Salt Pans," based on his recent trip to India. Not having exhibited new work since "Water," he was eager to sell some pieces. The photos—shot from a plane and a helicopter—continued in the abstract aerial vein. From his hotel in Gujarat, he had sent me an e-mail: "Just had a fabulous three days of shooting. Paul Klee kept jumping out of this landscape." The images were surreal and engaging, but they also suggested a limitation that Burtynsky would one day have to confront. As one of his friends put it, "The problem

with shooting from an airplane is that there is less differentiation in point of view. There is a danger of falling into a formula.”

Four people work full time in Burtynsky’s studio. Bit by bit, they were sorting through the gigabytes of data that he had brought back from Nigeria. One assistant was assembling the super-high-resolution composite from Towry Street. Meanwhile, Burtynsky was working on his first print from the delta. He was wavering between two similar images, taken three minutes apart, of a large configuration of rusted distilleries, and he hoped that seeing them at scale would help him decide. Both featured the same scene: a sheen-coated creek, black runoff pools, and a wooden boat filled with oil. “It not only shows the infrastructure but also the apocalyptic landscape,” he said. “It’s almost hard to imagine what happened here.”

The first of the Niger Delta photos, a print the size of a highway sign, was tacked up with magnets on a steel wall panel. It was bright, with a wide view of the landscape—including a cluster of dead trees at the top—and, shot at a slight angle, gave a relatively clear indication of the space. When the second image was posted, Burtynsky said, “Interesting. It’s darker, moodier.” The image was also flatter, with fewer trees. Burtynsky stood inches from the photo and squinted at a rickety pier extending from the distilleries to the creek. “I was looking at this earlier,” he said. “It must be to bring stuff over. I don’t know if the tides would make it this far back—or maybe it floods when the rains come.” He stood back again. Sensing that the photo lacked warmth, he headed over to Image Works for a revise. The corrected print was tacked up after lunch, just as Panou, who had strolled over from his apartment, walked in. “That’s what it looked like,” he said, stepping up to it.

“I would yank some yellow out,” Burtynsky said. The photo was warmer, but it had taken on a heavy, mustardy hue. “The yellow must be rust.”

“Rust and oil and everything else,” Panou said.

They looked silently. Occasionally, Burtynsky approached the print and ran his fingertips across it. “This one is more electric on the eyes,” he said. “The surface is more

active. The yellows are killing it, though.” He suggested another color correction. “Color can totally influence you, because color is emotional.”

We walked back to Image Works again, and Burtynsky sat down beside a technician. “Somebody way back when said it takes two people to use Photoshop: one to work, the other to say when to stop,” he said, and laughed. Beyond making adjustments to color, he said, he would not tamper with an image. His work, in many ways, requires that the image’s authenticity go unquestioned. “I am maybe seen as a bit of a throwback to modernism, and I don’t deny that,” he told me. “What I am doing is creating this constant body of work—a way of understanding the world.” Watching the heavy yellow tones fall away, Burtynsky nodded in approval. “What is reality?” he said. “At a certain point, you just aim for the print. You are not going in there and inventing a whole bunch of new stuff, but you are getting to something that resembles what it was.” ♦

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*Raffi Khatchadourian became a staff writer at The New Yorker in 2008.*