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OIL

**AN INTERVIEW WITH HISTORIAN OF TECHNOLOGY DAVID NYE
BY NATIONAL PARK SERVICE HISTORIAN TIM DAVIS
PHOTOGRAPHS BY EDWARD BURTYNSKY**

"Part of the technological sublime is that it's frightening and fascinating at the same time, like watching a lightning storm," says noted scholar David Nye, describing how people saw the spread of rigs and refineries across the Texas landscape of the early 20th century. "You'd see an almost infinite array of derricks in all directions as developers kept getting rights to adjacent lands." Here Nye—author of *Consuming Power: A Social History of American Energies, Narratives and Spaces: Technology and the Construction of American Culture*, and *American Technological Sublime*—elaborates on his theories in conversation with National Park Service Historian Tim Davis, a specialist in cultural landscapes research. Along the way, readers get a sampling of photographs from the new traveling exhibition and book by eminent photographer Edward Burtynsky, launched at Washington, DC's Corcoran Gallery of Art last fall, called, simply, "Oil."

LEFT: *Drilling leaves its mark on Beldridge, California, the first stage in a process that is often unexpectedly profound. Writes photographer Edward Burtynsky in the preface to his new book, "In no way can one encompass the influence and extended landscape of this thing we call oil."*



A:

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TIM: How has oil affected our lives and landscapes?

DAVID: The story begins in the 19th century with drilling for oil in western Pennsylvania—not far from where I grew up, actually. I used to see these old oil wells, what was left of them, when I was a kid in the early '50s. They seemed quaint, these little pumps in fields with cattle and farm implements. Oil was an everyday part of life, with low prices at the pump and Americans driving 300-horsepower cars. If we look at those first wells, they were pretty profitable for the region. Even so, people in the 1880s were critical of what they did to the environment—the rivers were flowing with oil and the landscapes were wasted by it. Today that's all disappeared. So as history it's a little elusive.

It was John D. Rockefeller who grasped that success was not in control of the drilling, but in control of the refining and distribution. That's where you get the chokehold. He built up a huge monopoly even before the automobile was important. So by the time I'm growing up, I'm immersed in a world of cars and gas stations where half the land in places like Los Angeles is devoted to the automobile. The naturalization of the technology was complete. It took me years of thinking to get a sense of what happened, how we went from a nation of horses and railways to a nation that got around by car and truck, with passenger trains on a long decline over the 20th century. After about 1920, the spread of suburbs was already quite marked. By 1925, only the destitute and people in the very big cities didn't have cars.

TIM: One thing that's gone is the excitement embodied by the automobile. Could you talk about that sense of promise?

DAVID: Take assembly-line manufacturing—of what else, the car. It wasn't just the Henry Fords who were excited. It was the consuming public. The demand was so great the manufacturers almost couldn't keep up. The assembly line suggested rapid progress. You could walk through a plant and see a car growing as you walked. It was almost miraculous. The most popular exhibit at the 1915 Panama–Pacific International Exposition was a full-scale assembly line, and again at the Chicago Century of Progress Exposition of 1933. It shows the enthusiasm for this idea that abundance will come with mass production, with all the new sources of energy. Oil was portable, dense—you could move it around to do all kinds of things. It empowered the individual, who could cut down all the trees behind his new house now that he had a chain saw. That house soon filled up with mass-produced appliances, their energy often supplied by burning oil. The growth of consumer society was an expression of an oil economy.



LEFT: An Oakville, Ontario, refinery, metaphor for oil's elaborate network of cause and consequence. **ABOVE:** Pipes in the landscape, Cold Lake, Alberta.

A:

BURTYNSKY OFTEN SHOOTS FROM A CRANE OR HELICOPTER, CAPTURING THE SUBLIME MOMENT OF SOMEBODY STANDING ON TOP OF A MOUNTAIN LOOKING OUT ON A POWERFUL SCENE THAT MAKES YOU FEEL INSIGNIFICANT.

TIM: There was drudgery with the technologies of horse and streetcar.

DAVID: A famous article calculated how many tons of horse manure was dropped in the streets, posing not just a danger of pollution, but a danger of disease, too. In hot weather, the manure would dry up, turn to dust, and blow around. There's nothing romantic about horses in a city. As strange as it seems today, cars were seen as clean.

TIM: The green technology of the time.

DAVID: Faster and cleaner but maybe not as safe. There was a sense that they were dangerous. But that was exciting, too. The sense of moving at a high speed was something people sought.

TIM: The car was a social boon, not just a better way to get around.

DAVID: The gas engine changed the world, breathing new life into traditional lifestyles. A farmer with a team of horses would take a long time to go to town, something he might do only once a week. But with a car, he could go in for an evening. His kids could ride the bus to a modern school. The automobile was liberation. Women didn't need a man to go places. You could pull the car up to the house, open the hood, and connect the battery to a radio or other appliance. There were kits so people could turn the energy of the motor to some other purpose.

TIM: You used the word "naturalization" in talking about how oil became ingrained in our culture. Do all technologies follow a similar arc?

DAVID: Yes. First the technology is something novel and exciting. After a generation or so, it's a natural thing, like a computer today. And then at some point it becomes banal and maybe people get fed up with it. You're sitting in a traffic jam and cars are no longer exciting. The thrill is gone. At some point, the thing becomes outmoded and people become nostalgic about it. We go ride on a steam train not to go anywhere but to experience what it's like. That would have seemed strange to people 150 years ago.

TIM: You noted that oil's degradation of Pennsylvania is often hard to detect these days, at least to the naked eye. Detroit might look very different a hundred years from now with the auto industry's departure.

DAVID: In central Detroit empty houses are being pulled down and gardens grown instead. I've read stories about people moving back because property can be had very cheaply. A renaissance seems unlikely, but you never know. Certainly the story of Detroit is a fascinating one. There was tremendous growth from 1900 to World War II, but then with the racial tensions of the '60s and the Japanese competition of the '70s it became a slow-motion train wreck. Today, it's not that Detroit is producing bad



RIGHT: *The Alberta Oil Sands, one of Canada's primary energy sources.*





cars, it's that its manufacturing base is hollowed out. In a way you might see in that the evolution of American emotions towards the automobile. How Detroit looks is a correlative for how we feel about the car.

TIM: Let's focus on the landscape of oil exploration, extraction, and processing. Those Pennsylvania rigs of your youth pale next to the Texas and California oilfields that embody what you call the technological sublime.

DAVID: The difference is in the scale and the rawness of the land where intrusion has been recent. You can see it in these photographs. Burtynsky often shoots from a crane or helicopter, capturing the sublime moment of somebody standing on top of a mountain looking out on a powerful scene that makes you feel insignificant. These are photographs taken with a large negative, not digital, so when you blow them up it's almost like being there. Looking at the images of the Azerbaijan fields is like stepping into the past, like seeing the oil rigs of Los Angeles in the 1920s where the intent was rapid extraction at the expense of everything else. Today that is not acceptable in the United States. Yet those L.A. derricks once invoked a sense of the sublime, too.

You can find the language of it as early as descriptions of the Erie Canal in the 1820s, in the notion that these things shocked people into seeing the power of technology. In the effort of the mind to make sense of some-

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LEFT: Discarded jet engines in the desert outside Tucson. ABOVE: A pile of tires so large it has its own name, the Oxford Tire Pile in Westley, California.

thing so immense, an exaltation built up. People felt they were in the presence of something magnificent. When they saw the mastery of the canal—the mastery of the land, the mastery to move goods with almost no effort and expense compared to before—they really got excited. Today it doesn't seem spectacular, but at that time to build a canal all the way from the Hudson to the Great Lakes was considered probably impossible, and likely a folly. So when it was done, there were great celebrations. Americans still go to watch space rockets lift off. That's the technological sublime they're feeling when they hear the roar of the engines and the ground shakes and the air tingles and they smell the fuel in the air. I ask Europeans if they have a space center, and none of them know. It's not part of their identity.

TIM: The Brooklyn Bridge, the great dams—at least up through World War II there was a strong American identification with technological prowess. Yet oil always had an undercurrent of negativity and suspicion.

DAVID: That was true for extraction industries in general, like mining. There's less visual excitement compared to a railway.

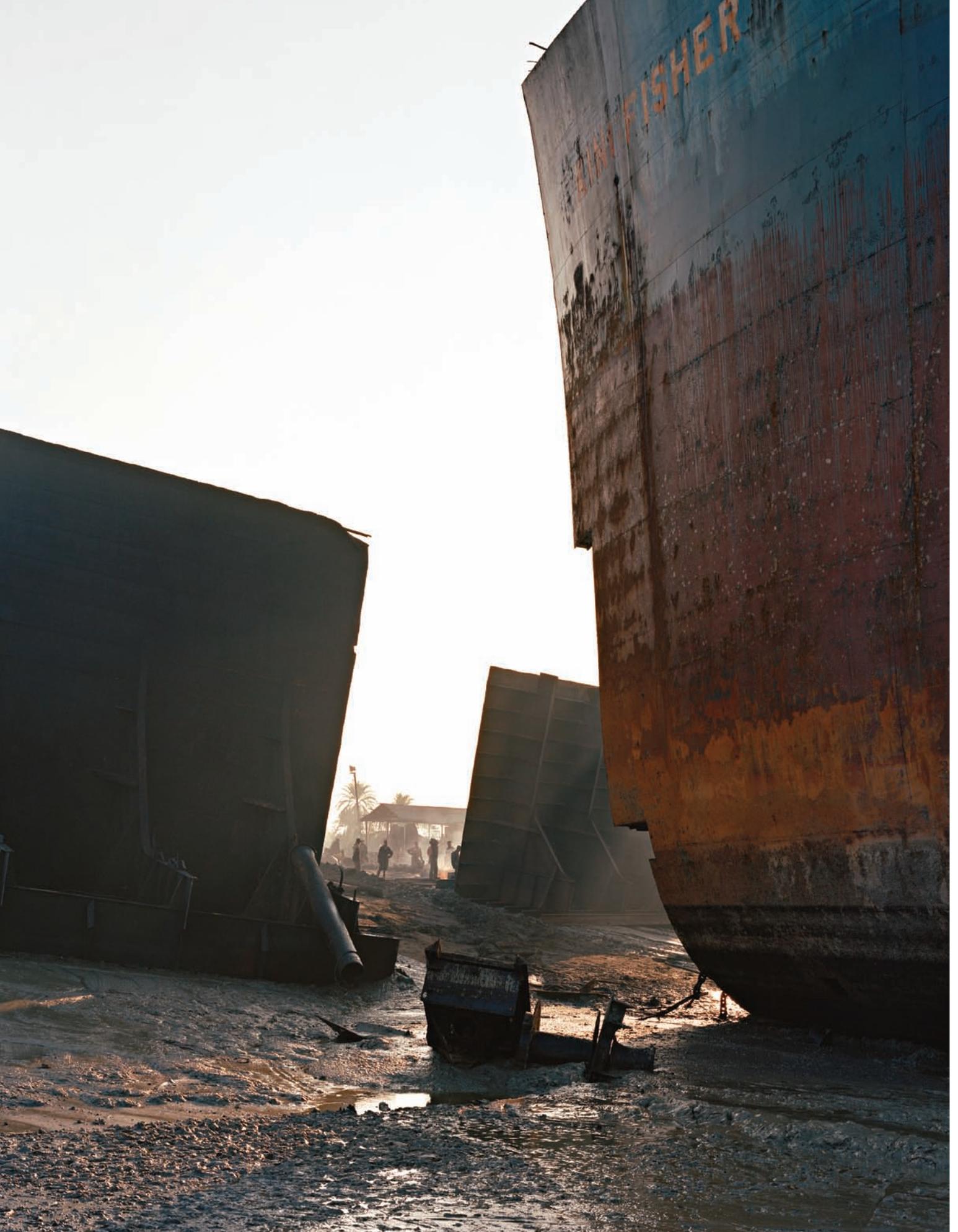
TIM: I wonder if the ambivalence is rooted in classical myth and folklore, that we're messing with the underworld, unleashing dark forces we can never completely control.

DAVID: There was once a tendency to think of ore as growing underground, that to extract it was to violate Mother Earth. With oil there was this fear of releasing bottled-up pressures that maybe should be left alone.

TIM: Popular culture suggests that oil has a corrosive effect on morality, that people elevated too quickly from their more primitive state are not these virtuous Jeffersonian yeomen, they're John D. Rockefeller and J.R. Ewing, mortals corrupted by excessive wealth. The movie *Giant* has Rock Hudson and Elizabeth Taylor living the Jeffersonian dream on a ranch until lowlife hired hand James Dean destroys the social order by hitting a gusher and striking it rich. The recent *There Will Be Blood* expresses similar sentiments.

DAVID: In *Giant*, you suddenly have riches without effort, without striving, without in a sense earning it. The disruption of the pastoral way of life comes with instant riches that just pour out of the ground.

TIM: It reminds me of another trope in American culture, the machine in the garden. Have green technologies finally reconciled nature and technology—is that part of the allure? Or is it a new sublime masking less salubrious things like ion battery disposal? These gigantic solar arrays in the



A:

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desert, from a magisterial gaze they look fantastic. But they have tremendous water needs and impacts on the local ecology.

DAVID: Oil was part of the industrial disruption—"the machine in the garden"—in the pastoral society Jefferson idealized. Today it seems that the reconciliation might be within our grasp. Demonstration houses are built with ever-smaller ecological footprints. But they often rely on expensive materials like solar panels. So we could be kidding ourselves.

TIM: Let's segue from the 21st century to talk about preserving the 19th and 20th.

DAVID: Preserving an oil site is a challenge, like preserving a battlefield, where you can have markers and memorials but no evidence of where the cannons and bullets ripped the shrubbery and the trees. Nevertheless there's a certain peaceful atmosphere, re-conquered by nature. I was online looking at an early oilfield in California called Topeka Canyon. They've got a marker and one small piece, Well No. 4. This was one of the longest producing wells in history. Often you have to reconstruct something or use film and photography to really help people get a sense of it.

TIM: There's a museum in Louisiana with a full-blown rig. It may be hard to understand for people elsewhere, but for many regions oil is part of their heritage. Daddy and Grandpa worked on a rig.

DAVID: North Sea oil has made Norway one of the richest nations in the world. There's a museum that looks like an oil platform out a long dock in Stavanger. You put on an orange life vest and go in a little room, and have the illusion that you're flying to the rig. I was rather taken with it.

TIM: You've written that inventions spread slowly, innovations rapidly.

DAVID: A basic invention like the automobile may take a long time to develop. But then it quickly leads to a host of innovative spin-offs, from car radios to miniature golf courses.

TIM: The national parks were a spin-off, a classier version of the miniature golf course. Grand Canyon didn't become what it is until you could get there by car; for most of the 19th century almost nobody saw it. The greatest popularity of the parks was from the 1920s through the 1960s, a quintessential shared experience for the middle class American family that coincided with the rise of the car. What will happen post-auto?

DAVID: I think there will always be something resembling the car. Since the 1900s, there's been a fourfold increase in the American population. So in a sense you need more places so everybody doesn't go to just a few.



LEFT: *Dismantling tankers in Chittagong, Bangladesh. Oil has given birth to entire offshoot industries—each with their own impact—spanning the globe.*
ABOVE: *Oilfield in Baku, Azerbaijan.*

TIM: Can you close with your idea of path dependency vis-à-vis oil?

DAVID: It took decades for Detroit to move away from the assembly line after Japan developed its lean production system. Detroit was path-dependent. The same can be said of consumers and their cars. We know that peak oil is arriving soon; we're likely at the start of a shift to a new energy regime. If we wait until the problem is acute, we'll keep doing the same path-dependent things, which will translate to a lot of pain and suffering.

The United States is like General Motors. It's difficult to get off the path you've been on so long. Britain was a success story, then stumbled because it held on to its coal-based economy. My father, who was an engineer, was astonished to see steam-driven textile mills in Britain during the '60s. And of course we know what happened to British textiles. They moved to Asia.

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