Prologue

Between Three Fires

The fires seemed to be everywhere.

Places that commonly burn, such as Australia, California, and Siberia, burned with epic breadth and intensity. Australia had established a historic standard for a single outbreak with the 2009 Black Saturday fires; the 2019–20 Black Summer burns broke historic standards for a season. California endured its fourth year of serial conflagrations, each surpassing the record set the season before. Like a plague, the fires spread into Oregon and Washington, then leaped over the Continental Divide to scour the Colorado Rockies. The Siberian burns moved north of their home territory and flared beyond the Arctic Circle. Places that naturally wouldn't burn or would burn only in patches were burning widely. The Pantanal wetlands in central South America burned. Amazonia had its worst fire season in 20 years. And what the fires' flames didn't touch, their smoke plumes did. Australia's smoke circled the globe. The palls from the West Coast fires spread haze through half the country; they struck with the symbolic impact and visual intensity that dust storms evoked during the 1930s. The fires' smoke obscured subcontinents by day; their lights dappled continents at night, like a Milky Way of flame-stars. Where fires were not visible,

the lights of cities and of gas flares were: combustion via the transubstantiation of coal and gas into electricity. To many observers, they appeared as the pilot flames of an advancing apocalypse. Even Greenland burned.

The smoke and flames were a symptom, not a syndrome. The planet's unhinged pyrogeography was also shaped by fires that should have been present and weren't. These were fires, historically set by nature or people, to which landscapes had adapted. Now those fires were gone, and the land responded by degrading ecologically while building up combustibles to stoke more savage wildfires. The Earth's fire crisis, that is, was not just about the bad burns that trash countryside and crash into towns. It was equally about the good fires that had vanished because they were actively extinguished or no longer lit. The Earth's biota is disintegrating as much by tame fire's absence as by feral fire's outbreaks. In 2013 the Pinchot Institute for Conservation surveyed the state and likely future of American forests. *Forest Conservation in the Anthropocene*—the outcome of its gathering of experts—included a full-body ecological CAT scan that looked at flora, water, air, soils, and wildlife. The one element every discipline included, the point of intersection among them all, was fire. Every aspect of the fast-morphing scene was touched by fire: it integrated everything else. If you didn't get fire right, you wouldn't get the rest right.[1]

There was a third facet to the planetary fire triangle, one that looked beyond present and absent fires to deep time. Its combustibles came not from living biomass, but from lithic ones. With increasing frenzy, humans were binge-burning fossil fuels. They were taking fuel out of the geologic past, burning it in the present with complex (and little understood) interactions, and then releasing the effluent into the geologic future. Industrial combustion

restructured the dynamics of fire on Earth. Fossil fuel combustion acted, in brief, as an enabler, a performance enhancer, and a globalizer. It ensured that little of the Earth would be untouched by fire's reach if not its grasp.

The dialectic between burning living and lithic landscapes explains most of the paradoxes of Earth's fire scene. Paradox one: the more we try to remove fire from places that have coevolved with it, the more violently fire will return. Without the counterforce provided by petrol-powered machines, from helicopters to portable pumps, there could have been no serious effort to exclude fire in the first place. Paradox two: while wildfires gather more and more media attention, the amount of land actually burned overall is shrinking. Fossil fuel societies find surrogates for fire and remove it (or suppress it) from landscapes. California experienced 4.2 million burned acres in 2020; in preindustrial times, it would have known probably over 10 million acres burned, though not burned in wild surges. Paradox three: as we ratchet down fossil fuel burning, we'll have to ratchet up our burning of living landscapes. We have a fire deficit. We need to make firescapes more robust against what is coming, and fire may be the surest way to do it.[2]

Add up all these fire influences—those directly through flame and those indirectly through smoke, removed fire, fire-enabled land use, and a warming climate—and you have the contours of a planetary fire age, the fire-informed equivalent of an ice age. You have a Pyrocene.

What Is the Pyrocene?

Pyrocene proposes a fire-centric perspective on how humans continue to shape the Earth. It renames and redefines the

Anthropocene according to humanity's primary ecological signature, which is our ability to manipulate fire. It comes with a narrative—the long alliance between fire and humans. It proposes an analogy for the future—the sum of our fire practices is creating a fire age that is equivalent in stature to the ice ages of the Pleistocene. With fire as a theme, it offers a sideways view on climate change, the sixth extinction, changes in ocean chemistry and sea level, and the character of the human presence on Earth. It retells familiar stories from a different vantage point and introduces topics not previously considered fundamental. Like fire, the Pyrocene integrates its surroundings—geographic, historical, institutional, intellectual. It addresses the search for a usable future.

The history it tells chronicles three fires. First-fire is the fire of nature—fires that appeared as soon as plants colonized continents. Fossil charcoal traces their presence back 420 million years. Second-fire is fire set and abetted by humans. Thanks to cooking, a dependence on fire became coded into hominin DNA; thanks to favorable conditions at the end of the last ice age, second-fire steadily spread everywhere humans did. Together, they competed with first-fire and expanded the overall domain of burning such that very little of terrestrial Earth—places blanketed by ice, implacable deserts, sodden rainforests—lacked fire. Human-kindled fires burned as first-fires did, in living landscapes, subject to shared conditions and constraints. Third-fire is qualitatively different.

Third-fire burns lithic landscapes no longer bounded by such ecological limits as fuel, season, sun, or the rhythms of wetting and drying. The source of combustibles is essentially unbounded; the problem is the sinks, where to put all the effluent. Third-fire unhinged not only climate and biotas, but the affinity between