

East of the wind and west of the rain

There are places that rest tangibly on the Earth's surface, and places that flourish only in the imagination, and places that plot their existence within a moral geography, and a few places, not many, Bor Island among them, that manage to fuse all these settings together. In truth, Bor belongs with that long tradition of island Arcadias that have attracted Western thinkers since well before Thomas More in 1516 gave them the name they now have, Utopia. What makes Bor Island unique is that its informing theme is fire.

The tangible Bor Island is a 50-ha patch of sand and Scots pine along the east bank of the Yenesei River halfway between Krasnoyarsk and the Arctic Ocean. It sits close to the geographic center of Russia. Its imaginative existence appeared when Johann Goldammer, a German forester turned ecologist, saw its potential as a site for an international experiment and named it after a small village, Bor (Russian for "conifer forest"), a few kilometers to the north. It is a contained space, surrounded by marsh or river, an ideal setting for an experiment. It metamorphosed into a moral landscape when it passed through the portal of Goldammer's idealism. The international cadre of scientists who conducted the burning came from countries that two years before had been Cold-War rivals, and so made Bor Island an experiment in political ecology. Its immolating fire could be imagined as a kind of Ragnarrok intended to burn away the legacies of the old regime. More broadly, the conifer-clad isle was a quirky microcosm of Earth as a uniquely fire planet and of how its dominant, uniquely fire creature might inhabit it. Their species monopoly over fire had granted people a defining ecological power, but as they moved from burning savannas to burning fossil fuels, they had unhinged the dynamics of the planet.

Johann Goldammer's vision was to burn off the isle, measure the character of the fire, sample its emissions, and then, over the next 200 years, record what regrew in its aftermath.

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It was an improbably quest from someone only half way through an improbable career. From his father, a professor of Religious Studies at the University of Marburg and long-serving president of the Paracelsus Society, he learned to value scholarship and the Paracelcean notion that toxicity resides in the dosage not the substance. From his mother's family, with long ties to the North Sea, he caught the "seafarer virus," worked on a cargo ship the summer he turned 15, and from 1968-1972 attended the Naval Academy Flensburg-Mürwik. He graduated as a *Leutnant zur See*, later promoted to *Fregattenkapitän*, and remained in the naval reserve as the commander of a minesweeper and minehunter. Whether that military experience only sharpened his talents or helped instill them, he has an exceptional capacity to organize, a quiet authority, and the ability to command. In a sense his career on land has emulated his experience at sea. He is the person who clears away the impediments and makes it to possible for others to maneuver.

The prime mover of his character, however, is a deep-bred idealism, and this joined to a fascination with forests acquired when, still in his teens, an *Oberforstmeister* gave him a tour of a private estate. The "forestry virus" joined the seafarer virus. In 1972 he enrolled for a diploma in forestry at Freiburg University. A casual observation from one of his professors and his family's lingering sympathy for things American pointed him in a direction far from the traditional themes of German forestry. The Americans, he learned, were deliberately burning some of their woods. Johann went to the Tall Timbers Research Station, north of Tallahassee, Florida, to find out for himself. "Fire Ecology and Fire Management" became the subject of his diploma thesis, which introduced *Feuerökologie* into German. In July 1977 he joined the State Forest Service of Hesse. After two years he returned to Freiburg for a

doctorate in forest science, this time studying fire in southern Brazil. While there, he married Dorothea Knappe, who he proudly notes became the first woman to conduct a prescribed fire in Brazil's pine plantations. He graduated in 1984. In landscape fire he found a theme common to all peoples and most places, and a medium for his idealism.

The contours of his career came into focus the next summer. A Greek charitable foundation invited him to discuss with Greek colleagues the fires then plaguing that country. On August 18, 1985, while boating to Thassos Island, he could see a smoke plume swelling upward. At Limenaria he watched the Greek Navy readying to attack the flames and offered his services as both a Naval officer and a civilian fire expert. He was accepted and promptly organized a gang of sailors and "instructed them how to fight the fires" with the buckets, hand tools, and towels on hand, and then he worked with villagers from Maries. At that moment he discovered "the two different souls in the two chambers of my heart." One belonged to a "forester and ecologist"; the other, to "the Captain of a ship." At Thassos he first "felt the unity, the symbiosis of both."

He took up the quest. Over the next 30 years there was no required skill too difficult for him to master, no task too arduous to undertake, no place too remote to visit. He completed his *habilitation* at Freiburg, which qualified him for a university professorship. He organized conferences on fire's ecology and management, published their proceedings, and later edited an international journal. He set about acquiring the practical skills he would need. He learned fire fighting and fire lighting and their tools. He became fluent in English, and conversant in French, Spanish, and Portuguese. He trained for a pilot license to fly small planes. He certified in explosives. He learned the evolving sciences that connected fire with the atmosphere and satellite reconnaissance.

And he became the Earth's most widely traveled fire expert. With various sponsors, he went to Brazil, the Philippines, Burma, India, Indonesia. He traveled from Mozambique to Mongolia, from Albania to Nepal, Ethiopia to El Salvador. Everywhere he sought to build capacity by organizing conferences, editing books, and transferring expertise. He helped plan complex, multi-nation field campaigns to measure fire and its effects in southern Africa, Brazil, Southeast Asia, and Eurasia. It was not enough to do science or write up a consulting tour: what mattered was creating institutions that could endure and continue the job.

In 1991, still early in his career, amid *glasnost* and *perestroika*, he joined an American colleague for a fire study tour of the Soviet Union hosted by *Avialesookbrana*, the Siberia-based aerial forest firefighting service. It was the first American fire contact since the invasion of Afghanistan in 1978 and the first German inquiry ever into Russian fire. At Krasnoyarsk, while meeting with fire officers and with scientists at the Academy of Sciences' fire lab, Goldammer conceived the notion of holding an international conference that would unite Soviet and Western fire specialists. Two weeks after he departed, the USSR imploded. The next year, with funds from the Volkswagen Foundation, he returned and identified Bor Island as a suitable site.

On June 3, 1993 he led a group of scientists - Finns, Canadians, Americans, and Russians - that with operational assistance from *Avialesokhrana* ringed Bor Island with fire, sending an enormous plume upward in what resembled a giant burnt offering. Many of the team returned the next year to resample their transects. (They claimed the beetles, gorging on the blasted pine, were so loud they drowned out the ceaseless hum of mosquitoes and black flies.) Most of the island, though not all, was burned clean by flames lofting from a dense lichens prairie through the conifer canopy. A worn-out world was about to be replaced by a new one growing through the ash.

His unlikely career as a fire authority - implausible not least because Germany had no tradition of fire research or institutions beyond simple protection - seemed to rise with the plume. In 1993 he became the leader of the UNECE/FAO Team of Specialists on Forest Fire and edited its *International Forest Fire News*. In 1998 he created the Global Fire Monitoring Center, located in the abandoned control tower at the Freiburg airport, built of steel and straw mats in the 1920s and topped with a windsock, rising out of the tarmac like a castle keep. The GFMC quickly became the bridgehead for a planet-spanning consortium of regional fire programs. Many of the world's fire hotspots were also political flashpoints, and Goldammer was there to find common cause in better fire management - in Azerbaijan, the Balkans, Libya, Ukraine. The GFMC became an outpost of the UN International Strategy for Disaster Reduction. The numberless hours sitting on folding chairs at droning conferences, the countless clichéd toasts, the jumbled millions of polyglot words, he has patiently endured them all and tweaked them into declarations, position papers, and ultimately institutions that can improve fire's management, and through fire, humanity's stewardship of the planet.

Among the major firepowers his position is curious. What holds his peculiar empire together is his personal vision. The more arrogant of the global fire community may politely regard him as a kind of Peter the Hermit on a children's crusade. He commands no battalion of engines, can launch no fleet of air tankers, oversees no big-science lab. He must forage constantly for funding. The Global Fire Monitoring Center they may dismiss as a kind of Vatican among the real powers. Under their breadth they might mutter, after Stalin, How many divisions has the Pope? But if you add up all the networks, interconnect all the collaborative projects, adjust the fulcrum for the scores of leveraging effects, and if like Johann Goldammer you can cajole and inspire and never be driven to despair, the answer might be, Quite a few. Because he does not represent a national government, he can move where the major powers cannot; he has succeeded where larger, less nimble, and less motivated organizations have stumbled.

And he has patience. In March 2012, after five years of relentless prodding, he finally received permission to burn off, for ecological regeneration, a heath at Jüterbog Ost, a former Soviet-German artillery range, now converted into the Heidehof-Golmberg Nature Reserve. Five years is not too long for someone who considers 200 years a reasonable duration for a fire experiment.

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Throughout, Bor Island continued to beckon. Over the next 20 years he visited Russia 42 times, six with sidetrips to measure the changes the grand experiment had wrought. Twice the Russian Forest Ministry awarded him medals; once, by invitation, he addressed the Duma. In July 2013, with mandatory retirement from the Max Planck Institute and Freiburg University approaching, he organized what would be his last trek to Bor, a 20th-anniversary reunion in which the future would be handed over to the next generation. The future, however, was out of his hands.

In the immediate aftermath of the Bor burn, the island had sprouted with lush regrowth. Fire did what it so often did in nature and myth: it renewed. The contrast with the slow riot of the Yeltsin years was striking. But part of the paradox of fire is that it is also conservative. Unless the fundamentals change - unless new species arrive or old ones disappear, unless the wind and rain alter their rhythms - the new growth will assume the form of the old. Revolutionary fires typically end with a new regime that, in its basics, resembles the old one. And so it has proved at Bor Island, where the soft tyranny of Vladimir Putin shut down the special quality of ecumenical science that had characterized the original experiment. Save for

Goldammer, the only participants granted visas for the reunion were Russians or members of countries that had once belonged to the Soviet Union. A *Pinus silvestris* forest was regrowing much like the one burned away on that bright July day in 1993.

It might seem to most observers a sad coda to a quixotic dream, but Johann Goldammer knows the value of tenacity and endurance. The tree you plant one year will grow to shade another generation. Given time, a change in global climate - and in the climate of opinion - and the outcome might shift. The work goes on. He hardly sleeps. There are meetings on capacity-building, aerial fire control, and research on fire in the Earth System to organize and coordinate in China, Austria, Sumatra, Brussels, Korea, Italy, and Croatia. It can seem a frenzy of errantry.

Yet there remains a vision at the core, and it was once given a tangible form as a place. If it seems an odd place, recall that folk tales abound of improbable youths called to unlikely roles and of treks to scenes strange beyond reckoning, and that intellectuals have repeatedly dreamed of Arcadias idealized to the yearnings of their times. If you believe in the commonwealth of humanity, if you have adopted fire as the medium of your idealism, if you have talents for organization and command, if you wish to live your convictions, then you must unflinchingly follow your heart's desire to wherever the flame beckons, even if that quest takes you to a patch of pine-clad sand that lies east of the wind and west of the rain.

Steve Pyne

