

Whole Earth Discipline: Why Dense Cities, Nuclear Power, Transgenic Crops, Restored Wildlands, and Geoengineering Are Necessary

Stewart Brand

Viking, 2009

Reviewed by Leland Beaumont

Many of us who grew up with the *Whole Earth Catalog* hold a special reverence for its founder and editor Stewart Brand. Trained as an ecologist, this book is his Ecopragmatist Manifesto. He takes surprising positions on several issues long considered sacred to environmentalists. These well-researched and well-presented ideas include:

- Climate change is happening faster than previously predicted. Bolder solutions are required encompassing *mitigation*, *adaptation*, and *amelioration*.
- Cities are Green: “you need a little bit less of everything for each person.” Compact and dense habitation decreases commuting distances, infrastructure size, and resources required for living. Cities significantly increase the carrying capacity of the world. Squatters live in vibrant communities; they walk everywhere, obtain food locally, and recycle everything
- “Cities accelerate innovation; they cure overpopulation, and while they are becoming the Greenest thing that humanity does for the planet, they have a long way to go.” Increasing cell phone use connects people instantly across strata. Urban living leads families to plan for fewer children.
- “Coal plants are factories of death. Coal is responsible for as much atmospheric carbon dioxide as all the other fossil fuels combined.” OK, no surprises there, but Brand goes on to advocate “New Nukes” as the solution: “Nukes are Green; new Nukes are even more so.”
- Nuclear waste can be safely handled, stored and disposed of. Consider a 175-year long planning horizon initially, and expect replanning during that time. Nuclear waste is minuscule in size—one Coke-can’s worth per person-lifetime of nuclear generated electricity. Coal waste is massive—68 tons of solids and 77 tons of carbon dioxide per person-life of coal-generated electric. Use the WIPP, the Waste Isolation Pilot Plant as a model for nuclear waste disposal.
- “Opposition to nuclear energy is based on irrational fear fed by Hollywood-style fiction.” Shift thinking from the Absolute Evils of: safety, cost, waste storage, and proliferation, to considering alternatives measured by: baseload, footprint, portfolio, and government-scale. “Reactor safety is a problem already solved.”

- “Nuclear energy has done more to eliminate existing nuclear weapons from the world than any other activity.” Create an international fuel bank to safely provide nuclear fuel to countries so they have no need to develop nuclear-refining capabilities. Move forward with the GNEP, the Global Nuclear Energy Partnership.
- “The problem is not that nuclear is expensive. The problem is that coal is cheap.” Tax carbon, rationalize subsidies, and streamline licensing for Nuclear Power. Develop microreactors to reduce capital costs and locate generation near consumers.
- “I daresay the environmental movement has done more harm with its opposition to genetic engineering than with any other thing we’ve been wrong about. We’ve starved people, hindered science, hurt the natural environment, and denied our own practitioners a crucial tool.” Genetic Engineering provides a safe and laser-focused tool to: increase crop yield, increase nutritional value, increase shelf-life, reduce the need for pesticides, and reduce toxins.
- “Microbes run the world, it’s that simple.”
- “Ecological balance is too important for sentiment. It requires science.”

Because these ideas represent the best and most recent thinking from Stewart Brand they deserve our attention. Because they represent significant shifts from traditional environmental thinking, they deserve our scrutiny.