

Minerals and manifest destiny

Is the US Department of the Interior imperialist? **K. John Holmes** investigates.

Despite its name, its remit is international: the US Department of the Interior (DOI) is not a body solely devoted to managing land and natural resources within US borders. Historian Megan Black's *The Global Interior* would have us believe that that has been disastrous. Despite scandals and disasters stretching back to at least the 1920s, the DOI retains a fairly innocuous reputation. Black argues that it has used that characterization to satisfy insatiable US demand for minerals from copper and tin to bauxite and lithium, and to enable the expansion of US imperialism.

The Global Interior tracks the scope of the DOI's minerals legacy from the arid US West to Alaska and island territories, South America, the Middle East, and eventually to the ocean floor and outer space. Black ends back in the US West, where ongoing struggles between Native American interests and the mining and energy-extraction industries close the circle. She reveals a complex strategy, ranging from securing energy resources and industrial ores for war efforts to aiding US and international companies through resource assessments, diplomatic activities and direct aid. The DOI has, for instance, assisted operations by the now-defunct Bethlehem Steel in Cuba, and provided technical aid for mica mining in Brazil.

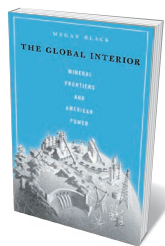
The book lays out the international scope of the US government's resource-directed activities, although some environmental historians might be surprised by the oversized role Black gives to the DOI. Even less recognizable to some will be Black's thesis that a country can expand its domain through environmental stewardship. Ultimately, although provocative, her narrative jars with the rich history of the DOI's science, analysis and resource assessments over its nearly 170 years, in my view. As when analysing any piece of thought-provoking scholarship, disagreeing is as much of the journey as agreeing.

Black does, throughout, demonstrate a keen sense of the uneven balance of power between the US government and peoples living on resource-rich lands, and lays out how, in pursuit of minerals, the United States has exploited and marginalized the capabilities and interests of these people around the world. She also describes how the DOI, in its earliest days during US westward expansion, offered settlers lands expropriated from indigenous people. Even nineteenth-century explorer and scientist John Wesley Powell — whom I have promoted for foreshadowing today's climate-assessment

practices — advocated removing Native Americans from their lands in the arid West at the same time as documenting and celebrating their cultures.

However, Black reduces the DOI and its history to a resource and development branch of the federal government. In doing so, she ignores the vast reach of its domestic and international scientific and non-minerals activities since the beginning of the twentieth century. Its domestic remit, she contends, was achieved at the close of the nineteenth century, when several of its sub-agencies collectively disposed of public lands, and contained Native American peoples on reservations.

Yet at that time, the department had already launched a massive domestic scientific programme led by its US Geological Survey (USGS), producing impartial, publicly available monitoring and analysis of the nation's lands, subsurface resources, natural hazards and water quantity and quality. From the 1880s, the USGS began developing the National Map — a topographical chart of the



The Global Interior: Mineral Frontiers and American Power
MEGAN BLACK
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48 contiguous states, the first draft of which was finally completed in 1991. It gauged thousands of rivers and streams, and produced more than 100,000 publications on geology, biology and ecosystems, coasts and oceans, energy, minerals, natural hazards and water.

The DOI's Fish and Wildlife Service, whose precursor was established in 1871, has a mission ranging from enforcing federal wildlife laws to fisheries management. The National Park Service manages more than 400 sites and wilderness reserves (see E. Carr *Nature* 535, 34–36; 2016). The Bureau of Reclamation operates hundreds of irrigation and hydropower dams in the US West.

Black's view of the DOI's twentieth century is very different. Using politically charged language, she contends that unnamed US leaders reoriented the department to focus on “ever-widening horizons, including formal imperialism” and spread its operatives to develop a “mineral intelligence base” that would expand the country's dominance. She reduces Second World War efforts to secure strategic materials to a lust for “materials needed for armament”. At the same time, she presents little systematic analysis to support her contention that the DOI's focus was actually on globalization and the pursuit of empire-building.

A key element of DOI history, which Black does bring forward, is the difficulties that inevitably arise for an agency that attempts

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Bethlehem Steel Mill in Johnstown, Pennsylvania, in 1937. The company used iron from Cuba.

to manage, regulate and promote the use of all of a nation's natural resources. The 2010 Deepwater Horizon oil spill, for instance, resulted in the dissolution of the DOI's Minerals Management Service; it became clear that one service could not oversee offshore oil and gas development, collect royalties and enforce regulations and safety. As Black notes, the incompatibility of the DOI's multiple missions — for instance, those concerning resource development and environmental protection — led to the foundation of competing federal departments and agencies, such as the Forest Service, Environmental Protection Agency and Department of Energy. In my view, this is less a failing of the DOI than a natural evolution: the emergence of spin-off agencies in response to perceived need represents the democratization of science.

I reflect on this book following the mid-September Global Climate Action Summit in San Francisco, California, organized by outgoing state governor Jerry Brown. Brown was nicknamed 'Governor Moonbeam' during his first tenure in the post more than 40 years ago, in part for his embrace of Earth-observing satellite technologies. Landsat — the Earth-observation programme that emerged from a joint enterprise of NASA and the USGS — provided a scientific base from which to improve understanding of resources and the environment. However, in Black's telling, it has been "a tool to further capitalist exploitation", embraced by an "array of well-meaning scientists and unscrupulous dictators".

Given California's economic reliance on the technology industry, Brown's advocacy of high-tech monitoring in pursuit of an aggressive environmental agenda might look self-serving. His vision might one day even be called an expansion of the Californian empire. And it is true that environmentalism should never be immune to critiques of its potential to suppress poorer countries' pursuit of development and opportunity. But to view the development of US capabilities in science and technology over the DOI's long and complicated history solely through the lens of expansionism, greed and imperial tendencies belies the complexities of the world we all live in and the fundamental part that scientific progress plays. ■

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Helena Asomoah-Hassan, university librarian at KNUST, Ghana, being interviewed for *Paywall*.

PUBLISHING

Open access — the movie

Richard Poynder views a documentary on the tug of war over paywalls in scholarly publishing.

Billed as a documentary, *Paywall* would be more accurately described as an advocacy film. Its intention seems to be to persuade viewers that the paywalls that restrict access to journal content online are an unnecessary hang-over from the print era, and now serve only to perpetuate the excessive profits that legacy publishers such as Elsevier, Wiley and Springer Nature make from the public purse.

The film makes a convincing case that the paywall system creates problems — and that universal open access (OA) to scholarly articles would be better for society. But it fails to adequately explore the thorny challenges that arise with OA publishing. These include the fact that the publishers castigated would continue to dominate scholarly communication in an OA world; the increasingly expensive 'pay-to-publish' model, which substitutes inequities in access for inequities in affording publication; and the rise of predatory publishing. And although *Paywall* acknowledges that current reward systems have slowed the progress of OA publishing, it does not

Paywall: The Business of Scholarship

DIRECTOR: JASON SCHMITT

Open Society Foundations (2018)

address the puzzling question of why academics have proved so reluctant to make copies of their published papers freely available in their

institutional repositories.

Paywall features more than 70 interviews. People represented include: Richard Wilder, associate general counsel at the Bill & Melinda Gates Foundation; Wikipedia Library head Jake Orlowitz; and Alexandra Elbakyan, founder of Sci-Hub (a website that offers free access to more than 70 million illegally downloaded academic papers). Rachel Burley, publishing director for BioMed Central and SpringerOpen, speaks for Springer Nature.

The film ranges over issues such as journal price inflation, researcher evaluation and impact factors, and the disparity of access between the predominantly wealthy global north and the mostly lower-income global south. The film is funded by the Open Society Foundations in New York City, which was created by ▶