



struggle compelled many farmers to give up cotton and pursue other cash crops, like peanuts, tobacco, and vegetables. During the 1970s, however, scientists discovered ways to attack the insect through its own biology by developing pheromone lures and detection traps. The use of chemicals, particularly Malathion, has also been effective. Cultural practices, too, like the destruction of cotton stalks after harvest to deprive weevils of a winter habitat, have also been successful.

### WINNING THE BATTLE

Today, cotton-producing states participate in the Boll Weevil Eradication Program (BWEP), which was first tried in North Carolina during the late 1970s. Basically, BWEP applies a three-pronged approach to weevil eradication: the spraying of Malathion, the use of pheromone lures and traps, and the destruction of cotton stalks. The early successes with the program prompted other states to participate. BWEP has had enormous success in eliminating the weevil from several states and some, like Georgia, Alabama, South Carolina, and North Carolina have declared themselves free of the insect. BWEP also boasts an environmental benefit. With the eradication of the weevil, the need for insecticides is greatly reduced, allowing farmers to rely more heavily on beneficial insects to control cotton pests.

**SEE ALSO:** Cotton; Insects; Invasive Species; Pesticides.

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## Bookchin, Murray (1921–2006)

MURRAY BOOKCHIN (1921–2006) is best known as the founding figure of social ecology, a political and philosophical approach to radical environmentalism. As the author of dozens of books and countless articles, as a prolific public speaker, and as the founder of the Institute for Social Ecology, Bookchin's sphere of influence encompassed green political theory and environmental activism internationally.

Raised in the New York City in the 1930s, Bookchin grew up amongst radical politics and the labor movement; these working-class roots continued to inform his politics and philosophy for years to come. From the 1950s forward, Bookchin worked to bring together the cohesive political vision of the traditional Left with the new concerns of ecology, toxics, and biodiversity. His contribution mainly took the form of an immense body of writing, but he was also an active figure in grassroots anti-war, anti-nuclear, and environmental social movements since the 1960s. His influence was particularly important for various European Green parties, as well as the anti-nuclear movement known as the American Clamshell Alliance. Even during the retirement period before his death, Bookchin continued to write prolifically.

### BOOKCHIN'S MAJOR WORKS

Bookchin's first major work, *Our Synthetic Environment* (1962), published under the pseudonym Lewis Herber, outlined a comprehensive critique of industrial capitalism's relation to the natural world. While Rachel Carson's *Silent Spring*, published at the same time, is often credited with sparking the nascent ecology movement in the United States, it was Bookchin's work that provided the seminal ideas that would eventually become radical ecology. *Post-Scarcity Anarchism* and *The Modern Crisis*, among other works, served as responses to the way the traditional Left movements in the United States had attempted to understand ecology and natural value. Bookchin emphasizes that the destruction of the natural environment stems



from the same political and economic systems that oppress the working class, the developing world, and so on.

These ideas are developed further in *The Ecology of Freedom* and *The Philosophy of Social Ecology*, where Bookchin laid out the teleological philosophy behind social ecology. He argued that human sociality emerges directly from evolution's tendency towards increasing complexity and consciousness. In the context of Bookchin's leftist politics, this argument suggests that an objective basis for a free and just society can be found in nature itself. In practical terms, Bookchin advocated an approach to political organization he called *libertarian municipalism*.

As described in *From Urbanization to Cities and Remaking Society: Pathways to a Green Future*, this approach is based on a radical decentralization of power, allowing citizens direct access to all forms of political decision-making. Bookchin modeled this strategy on classic Greek democratic forms and New England town meetings, updated with an understanding of global environmental problems and appropriate technologies like solar energy and public transportation.

Since the 1980s, Bookchin frequently became entangled in sectarian controversies with other leftists and radical ecologists. In particular, he has taken a hard line against the philosophy and practice of deep ecology, associated with earth spirituality and the militant biocentric environmentalism of groups like Earth First! While these debates generated significant bitterness and divisiveness, Bookchin's ideas remain an important legacy for green political theory and practice.

**SEE ALSO:** Earth First!; Biocentrism; Social Ecology.

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## Boreal Forest

IN CONVENTIONAL GEOGRAPHIC terms, the boreal forest is a terrestrial biome encircling nearly the entire sub-arctic. In North America, the boreal forest lies predominantly within Canada, where it occupies a contiguous zone from the province of Newfoundland to the Mackenzie River delta in the Northwest Territories, extending as far south as central Ontario and Québec. Significant portions of boreal forest are also found in central Alaska. In Europe and North Asia, the boreal forest—or taiga forest—is equally impressive in size, spanning northern Scandinavia, northern Russia and Siberia, and the Kamchatka Peninsula. Although frequently represented as a vast wilderness, millions of people reside in the boreal forest. In Canada alone, just fewer than 4 million people are estimated to reside within the boreal forest, including well over 500 hundred First Nations communities and several large resource-dependent municipalities. The taiga in Eurasia is also very heavily populated.

### RICH IN NATURAL RESOURCES

The boreal forest consists of mainly coniferous tree species, including fir, spruce, and tamarack. There are also deciduous tree species, such as trembling aspen and poplar, and large expanses of peat bog, especially in the northern latitudes. Sizeable herds of woodland caribou (reindeer in Eurasia) migrate throughout the boreal forest, as do large populations of black bears, grizzly bears and timber wolves. Recent estimates suggest that in North America alone, over 4 billion migratory landbirds inhabit the boreal forest at the height of the summer breeding season. Topographically, the boreal forest varies from flat, lowland expanses in central and northern Canada and the Siberian lowland, to mountainous regions in Western Canada and West-central Russia.

The boreal forest is among the world's most important sources of natural resources, and for this reason has become an object of environmental concern over the last few decades. Since roughly the early 1990s, environmental and conservation organizations have argued that excessive industrial resource extraction throughout the boreal forest is having a detrimental effect on the forest's capacity