

projects in the office. This approach emerged gradually, evolving with new refinements each year. To his first class in the newly reinstated Department of Landscape Architecture, in 1956, he posed a study of Cape Hatteras. The students' report explained processes of beach formation and erosion, the development of plant communities, and the relationships of animal communities to their habitat. Although the studio did not produce a specific plan or design, it was an embryonic first step toward ecological planning at Penn.¹⁷ In 1959, Lewis Clarke, an Englishman, was hired to teach "the first ecological design studio" at Penn on Levittown.¹⁸ Three years later, McHarg taught a planning studio for Harvey Cedars, a second-home development along the New Jersey shore, in which students studied natural processes and landscape form. William Martin, an ecologist, also worked with the studio, which provided the material for "Sea and Survival," the second chapter in *Design with Nature*. When Nicholas Muhlenberg joined the faculty in 1962, he introduced new ideas and authors into the curriculum. E. Lucy Braun's *The Deciduous Forests of Eastern North America*, for example, became an influential text. After Muhlenberg's arrival, the biome, the physiographic region, and the river basin provided an indispensable context for the curriculum at Penn. These remained the powerful, integrative core of Penn's landscape architecture curriculum for thirty years, thereby tying the teaching of landscape architecture theory, method, and practice to three key concepts of geography and environmental science and management.¹⁹

By 1962, McHarg was ready to try these ideas out with real clients on a real project. Wallace McHarg's first project was the "Plan for the Valleys," seventy square miles of valley farmlands and forested uplands north of Baltimore, Maryland. The region was in the path of an expressway that would bring new suburban development, and the wealthy residents had asked David Wallace to help them preserve the scenic beauty and environmental quality of the area. The firm based its proposals on an analysis of the region's natural resources and hazards, organized by its physiography, or what McHarg termed "physiographic determinism."²⁰ It recommended that new development take place on open plateaus and that wooded slopes and open valleys be preserved. In "Plan for the Valleys," McHarg stated the credo that would guide his work for the firm throughout the next seventeen years:

The area is beautiful and vulnerable; development is inevitable and must be accommodated; uncontrolled growth is inevitably destructive; development must conform to regional goals; observance of conservation principles can avert destruction and ensure enhancement; the area can absorb all prospective growth without despoliation; planned growth is more desirable and as profitable as uncon-

¹⁷ G. M. Cope et al., "Plan for Cape Hatteras" (Philadelphia, University of Pennsylvania, 1956). McHarg himself does not cite this project and describes a 1961 course by Lewis Clarke and a studio by himself in 1962 as the first ecological design and planning studios at Penn (*Quest for Life*, 167–70). I am grateful to Meto Vroom for telling me about this studio and for giving me a copy of the report.

¹⁸ Michael Hough and Tony Walmsley were among the students in the Clarke studio.

¹⁹ Unfortunately this tradition of biome, physiographic region, and river basin as principal integrative concepts ended with a revision in the curriculum at Penn in 1993.

²⁰ McHarg, *Design with Nature*, 81.

trolled growth; public and private powers can be joined in partnership in a process to realize the plan.²¹

McHarg the practitioner is, like Pinchot, a persuasive pragmatist. Practice has a creative role in refining and even generating theory, and practice is shaped by the types of projects for which clients seek professional advice, which is, in turn, influenced by socioeconomic, political, and cultural contexts. In the 1960s, McHarg's practice was shaped by the construction of the federal highway system and its effects on rural areas in metropolitan regions. After the New Communities Act of 1968, it was influenced by federal subsidies for new, planned communities. In the early 1970s, his clients were mainly private developers of new communities and resorts. By the mid seventies, after the energy crisis of 1973 and the economic recession of 1974, most of his clients were public agencies seeking to control and direct growth taking place in their region or to address environmental quality issues related to federal legislation. Managing the environmental consequences of suburban and exurban growth constituted most of McHarg's professional work from the time of his plan for the valleys in 1962.

In 1965, Secretary of the Interior Stewart Udall appointed McHarg to a task force of the American Institute of Architects on the Potomac River basin, and McHarg decided to use his studio courses at Penn to generate information, explore issues, and assume leadership of the task force. In *Design with Nature*, he presented a summary of work produced by students over the course of the year (1965–66), distilled from “five hundred maps and several pounds of reports.”²² In contrast to practice, the university offered McHarg the opportunity to frame problems, pose questions, and select sites. In 1969, he observed, “A professional landscape architect or city planner is limited in the projects he undertakes to problems presented by his clients. A professor, in contrast, suffers no such constraints and is enabled to undertake projects he deems worthy of study.”²³

The Potomac River Basin Study was a seminal project. It used most of the methods that were later refined in professional and academic projects of the late 1960s and the 1970s, including the overlay and the matrix (Figs. 5 and 6). It was also the first study to combine the physiographic region and the river basin as the primary organizing context for ecological planning and design—a framework that linked past, present, and anticipated future actions and multiple landscape scales from garden to region. Bird's-eye views and sections of the diverse physiographic regions within the river basin (the Allegheny plateau; Ridge and Valley; Great Valley; Piedmont; and Coastal Plain) summarized patterns of topography, geology, soils, hydrology, vegetation, current land use, and potential uses deemed suitable for particular locations. These drawings invite comparison of patterns from region to region within the river basin; they bear striking resemblance to Geddes's “valley section” of 1911.²⁴

²¹ Wallace McHarg, “Plan for the Valleys,” quoted in McHarg, *Design with Nature*, 82.

²² McHarg, *Design with Nature*, 151.

²³ *Ibid.*, 127.

²⁴ See Patrick Geddes, *Cities in Evolution*, ed. J. Tyrwhitt (London: Williams and Norgate, 1949). The whole project is an exemplary application of Geddes's idea that city and region are an organic whole.