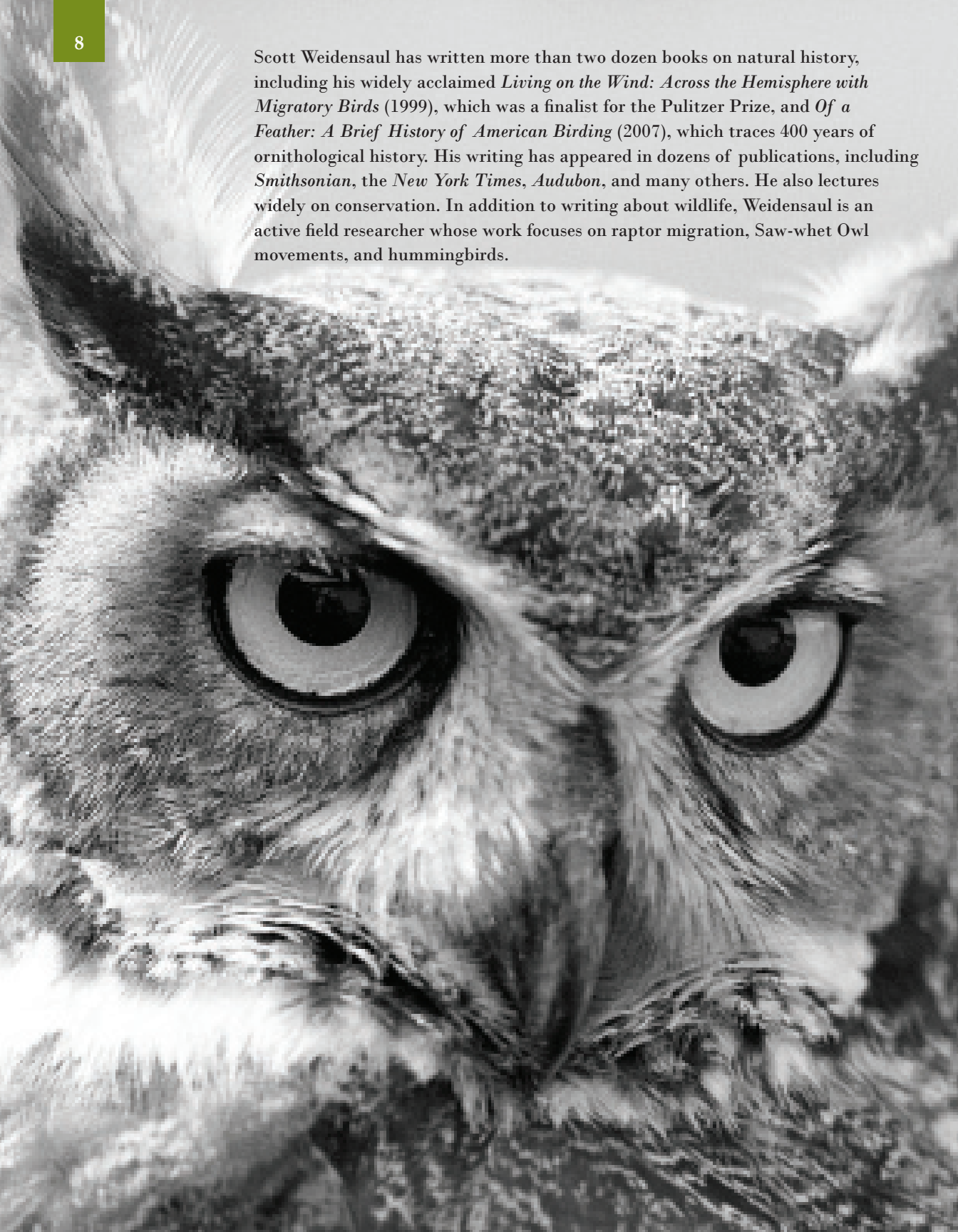
Scott Weidensaul has written more than two dozen books on natural history, including his widely acclaimed *Living on the Wind: Across the Hemisphere with Migratory Birds* (1999), which was a finalist for the Pulitzer Prize, and *Of a Feather: A Brief History of American Birding* (2007), which traces 400 years of ornithological history. His writing has appeared in dozens of publications, including *Smithsonian*, the *New York Times*, *Audubon*, and many others. He also lectures widely on conservation. In addition to writing about wildlife, Weidensaul is an active field researcher whose work focuses on raptor migration, Saw-whet Owl movements, and hummingbirds.



Introduction:
The Birthplace of American Birding

by Scott Weidensaul

Eastern Pennsylvania is a birding paradise. From the gulls and waterfowl on lakes Nockamixon or Ontelaunee, to the songbird-haunted forests of the Pocono plateau and to the Kittatinny Ridge overlooks like Hawk Mountain and Bake Oven Knob with their parade of migrant raptors–there is always something with feathers to make a day outside worthwhile.

But beneath the forests and flowing water, masked by the honks of geese and the spring chorus of songbirds, lies history. Not just the grand pageant of national history like Valley Forge and Independence Hall, but ornithological history. Mile for mile, the Schuylkill and Delaware rivers may be the most important waterways in the history of American bird study, just as the lands they frame remain a treasure-trove for modern birders.

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This is where the American science of birds got its start, but not in the way you might expect. The pioneers of American ornithology were layabouts and dreamers, convicted felons and vainglorious peacocks, all of whom were transformed by the birdlife along the Schuylkill into brilliantly focused naturalists who, in turn, changed the way we look at the natural world.

William Bartram had the right pedigree for science; his father, John, rose from being a simple farmer and taught himself science, becoming one of the world's greatest botanists; their home, Bartram's Garden, near the junction of the Schuylkill and Delaware in Philadelphia, was renowned for its plant collections. Young Billy, born in 1739, absorbed his father's passions for nature but little of his drive. He failed again and again at business and farming, but in his thirties he found his mission in life, setting off from the family home to explore the Southeast, discovering dozens of new species and, after returning to Philadelphia, writing an account of his travels that made him as famous as his father.

In later years, diplomats, scientists and even presidents like Washington and Jefferson beat

Great-horned Owl

a path to Bartram's Garden to see him, but his fame attracted a scruffier sort as well – people like the scrawny young Scotsman who knocked one day in 1803, introducing himself as the new schoolteacher at Gray's Ferry, a mile further along the Schuylkill.

A. Wilson's drawing of Barn Swallows. Courtesy of the National Audubon Society

Did Bartram's eyes narrow a bit, looking at the underfed young man? Did Bartram know the fellow had been imprisoned in Scotland for blackmail? Was he put off the chap's breezy announcement that he wanted to write and illustrate the first comprehensive ornithological text on the birds of the New World – even though he could not draw, and didn't even know what most of these wondrous new birds were called?

Or did Bartram see a little of himself in the young man, who was called Alexander Wilson, and who would, within just 10 years (and with a generous dose of Bartram's help, and by working himself into an early grave) achieve his goal and lasting recognition as the Father of American Ornithology?

Perhaps. But what neither man knew was that just 25 miles upstream, at an estate named Mill Grove, another bird-mad young man had recently landed – the illegitimate, Haitian-born son of a French naval captain. He was a self-absorbed 18-year-old, fond of dancing and shooting, with no interest in managing his father's land; by any objective assessment the young fellow, christened Jean Rabine, was likely to make nothing more of himself than a mildly rich fop.

The one thing that did interest him very much, though – the one thing that harnessed his surprisingly sharp intellect and his formidable, if self-taught, artistic skill – were the birds he chased along the Schuylkill River, painting them in works signed not with the name he was given at birth, but the anglicized version of the name his father had given him: John James Audubon.

J.J Audubon's drawing of Ruffed Grouse. Courtesy of the National Audubon Society

John James Audubon

"Mill Grove was ever to me a blessed spot," Audubon wrote years later. And no wonder. Ruffed grouse were common in the conifer thickets, flocks of ducks filled the air, woodcock did their skydances along the edges of meadows, and songbirds swarmed the trees in spring.

Audubon only lived along the Schuylkill for four years before moving to Kentucky, but they were crucial ones for his development as an artist and ornithologist. It was here that he struck upon his great inspiration – to pin a freshly shot specimen into a lifelike pose using a wooden framework and an armature of slender wires, then to paint it lifesize on watercolor paper. Compared with the stiff illustrations of Wilson and other early naturalists, Audubon's work was a riot of life and movement. Art and nature have never been the same.

Audubon worked in his own little bubble, never meeting Bartram, and not encountering Wilson until years later in Louisville, Kentucky, a chance meeting that probably sparked Audubon's own interest in creating his great Birds of America folios. Once that spark was struck, though, he kept returning to eastern Pennsylvania for inspiration and specimens.

In 1829, for instance, he embarked on a six-week expedition up the Lehigh River to its

headwaters, in what was then known as the Great Pine Swamp – the virgin forest of white pine, hemlock of hardwoods that covered what is now Carbon and Luzerne counties, a forest so deep and shadowed that it was also known as "the Shades of Death." There was nothing gloomy about it to Audubon, though, who went out each day with his gun Tear-jacket, living in a logger's cabin and eating "juicy venison, excellent Bear flesh, and delightful trout," painting pileated woodpeckers, red-breasted nuthatches, ravens, warblers and much more – 95 of his great paintings in all.

Eastern Pennsylvania was the cradle of American science, home to the American Philosophical Society (whose members, at the request of Thomas Jefferson, gave a crash course in the natural sciences to Meriwether Lewis, the introspective, melancholic half of the Lewis and Clark expedition. When they set out across the West, Lewis was armed with the basics of ornithology, along with medicine, botany, ethnology and paleontology). In 1812, the Academy of Natural Sciences opened it doors – though not willingly to Audubon, who had gotten himself crossways with the Academy by denigrating Wilson's work. George Ord, Wilson's friend, biographer and collector, spent the rest of his life savaging Audubon at every opportunity.

As the two rivers connect the landscape, so too does a continuous thread connect the lives of their great ornithologists – though it runs upstream, flowing through time from the mouths of the rivers toward their headwaters in the mountains. In 1823, a boy was born in Reading, Berks County, along the Schuylkill whose life linked the generation of pioneering bird students with those who helped sparked the general public's interest in birds a century later.

Before his widowed mother moved the family from Reading to Carlisle when he was 10, it's likely that young Spencer Fullerton Baird thrilled to the sight of passenger pigeon flocks roosting on the flanks of Neversink Mountain, and flying down to an immense boulder in the Schuylkill, known to this day as "Pigeon Rock." Baird was a prodigy; a college graduate at 17, discoverer (with his brother) of several new species of birds including the least and yellow-bellied flycatchers, friend and protégé of Audubon, and later the founder of the National Museum of Natural History and secretary of the Smithsonian Institution.

"As the two rivers connect the landscape, so too does a continuous thread connect the lives of their great ornithologists."

And as Audubon mentored Baird, so did Baird mentor dozens of the best ornithologists of the late 19th and early 20th centuries, many of whom got their start as frontier collectors. (Baird's father-in-law was Inspector-General of the U.S. Army, and through him, Baird could post military officers with a knack for science to almost any Western fort that he wished).

Not all were Army surgeons and cavalry officers, though. Among Baird's many correspondents was a young schoolteacher from Berks County named Levi Mengel, who even before he graduated high school in the 1880s had assembled a collection that would eventually grow to thousands of eggs and bird skins, and form the basis of the Reading Public Museum, which he founded in 1907. Mengel, in turn, struck up a friendship with a young artist and museum collector at the Academy of Natural Sciences named Earl Poole, who eventually succeeded Mengel as the director of the Reading Museum, and who went on to an illustrious career as a scientist, illustrator and educator.

The Schuylkill and the Delaware both flow through the same, 220-mile-long ridge, variously known as the Blue or First Mountain but more formally called the Kittatinny Ridge. The water gaps they form are among the prettiest on Earth (though recent commercial sprawl in the neighboring valley has marred the Schuylkill gap). But along this long, narrow ridgeline comes a great floodtide of raptors each fall, one of the greatest bird migrations in North America, and one whose history was pivotal for conservation.

Dead hawks from one day of shooting. Courtesy Hawk Mountain Sanctuary Archives

In the late 1920s, state ornithologist George Miksch Sutton wrote a short note in an ornithological journal about the unusual concentration of northern goshawks turned in for bounty at one spot along the Kittatinny on the Schuylkill/Berks county line, and a young conservationist named Dick Pough – who would go on to found the Nature Conservancy two decades later– came to investigate.

He found carnage on the ridge – gunners blasting thousands of migrating hawks each fall, their broken and rotting carcasses littering the woods below. Pough tried to rally support for ending the slaughter, using the gruesome photographs he took, and was met by a yawn – even many ornithologists and conservationists thought hawks were "bad" birds, not worthy of protection.

But Pough did energize a formidable woman named Rosalie Edge, a New York veteran of the women's suffrage movement, and a largely forgotten conservation heroine to whom we owe Olympic and King's Canyon national parks, and the preservation of much of Yosemite. Mrs. Edge formed the Emergency Conservation Committee and leased the mountaintop where the gunning was worst – and in the nick of time, as a local hunting club voted that same day to buy the land for hawk-shooting.

Instead, the ridgetop became Hawk Mountain Sanctuary, the world's first refuge for birds of prey, and one that has grown into one of the leading centers of raptor conservation and research in the world. The rocks of North Lookout, which rise high above the Little Schuylkill River, have for generations been the crossroads of naturalists like Roger Tory Peterson and Rachel Carson, just to name a few of the luminaries who made the pilgrimage many times over the years.

Broad-winged hawk, B.K. Wheeler/VIREO

R.T. Peterson on North Lookout, Hawk Mountain Sanctuary Archives

"Today, it's still possible to walk the same paths, and see many of the same species, that the giants of early American ornithology saw."

History has flowed, just as have the rivers that frame eastern Pennsylvania. Few parts of the state have been hit as hard by development – yet the birding opportunities here remain rich. Stretching from the tidal marshes of the lower Delaware, through the Piedmont farmland to the extensive forests of the ridge-and-valley system and the cool, conifer-laced bogs of the Pocono plateau, it's a region of varied topography and habitat, and thus great for birds.

It's also a region which, despite its large human population, still has a lot of public land that's open for birding, from state parks like Hickory Run and Lehigh Gorge in Carbon County, to state forests and natural areas like Bruce Lake in Pike County and Brady's Lake in Monroe, as well as tens of thousands of acres of state game lands, local and county parks. The region also has an unusual number of private preserves like Hawk Mountain, the Lehigh Gap Nature Center and Tannersville Cranberry Bog Preserve.

Today, it's still possible to walk the same paths, and see many of the same species, that the giants of early American ornithology saw, whether it's spring migrants filling the old trees at Bartram's Garden, or the eastern phoebes that still nest along Perkiomen Creek at Mill Grove, where Audubon tied silver wires to their legs to prove that the same phoebes came back to nest each spring – the first crude attempt at bird-banding.

You can chase Audubon's ghost through the "Shades of Death" on the upper Lehigh, where northern warblers still abound, and where ravens have returned after a century's absence – and if the passenger pigeons that once drank from the Schuylkill are just a memory, the sting is eased by resurgent peregrine falcons, nesting in Allentown, Reading and on the cliffs of the Delaware Water Gap, or bald eagles in growing numbers throughout the region. Everywhere you look in eastern Pennsylvania, you'll find birds. All you need is time, binoculars – and this guide, of course.

Eastern Bluebird