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The snake catches everyone by surprise, appearing as if conjured for us moments after the professor asks if we would like to look for a rattler. We scramble over the rocky mountaintop, among tough grasses and pitch pines, and suddenly there it is, a timber rattlesnake three and-a-half feet long, gliding over the mottled stone several yards away.

We crowd as close as the professor deems safe and watch it coil up against a boulder, rattle trembling in the breeze. The snake is beautiful, with chocolate-brown bands rippling over a dusky back. It is a clear summer day on the summit of Black Rock Mountain, and for several moments I am as rapt as the pack of high school students this excursion was intended for.

These six students make up one of 12 summer science classes offered by the Black Rock Forest Consortium in New York state's Black Rock Forest. In the 1960s, this forest was almost sold to developers from Consolidated Edison during one of the environmental movement's epic battles. Today, that same land functions as an outdoor classroom to teach middle and high school children about ecology and conservation. But what makes it unusual among nature programs is that at Black Rock Forest, the students learn how conservationists and biologists carry out research in the field. Alongside practicing scientists, the students collect data for ongoing research projects in the preserve's wetlands and wooded slopes.

Since they launched last year, the Black Rock Forest Consortium summer sciences classes aim to connect kids, primarily from the Hudson Valley and New York City 60 miles away, to the natural world, although some of its students travel from as far as Florida and even Hong Kong. The program runs multiple classes concurrently over four week-long sessions. The "Biodiversity Blitz" class, taught by Barnard paleoecologistTerryanneMaenza-Gmelch, is just one of four classes running on the day I come to visit. While we were entranced by the timber rattlesnake atop Black Rock Mountain, other students were immersed in "Surveying Turtles," "Visualizing Entomology," and "Flying High Ornithology" (the most popular class) across different parts of the forest.

For Jeffrey Kidder, the education director, who designed the program, it's all about inspiring students with its hands-on approach. "That's kind of the model for this program--authentic science, taught by people that are truly doing science research," he says. Besides games, hikes, and baking muffins from wild blueberries, the students learn field research techniques, such as identifying birds by song and recording carapace measurements on turtles. "Kids want to be here and have fun," says Kidder. "It's not school, it's summer class. Catching a turtle's got to be a 'gee whiz' thing."

Black Rock Forest (which is named for magnetite, a dark iron ore found in rocks across the forest) spans nearly 4,000 acres in the Hudson Highlands, the cragged mountainous area that lines the Hudson River as it winds north from New York City. The Consortium is an amalgamation of 24 groups that include grade schools, universities, laboratories, and museums committed to conserving and studying the forest. The American Museum of Natural History, New York University, and the New York City Department of Parks and Recreation are all members.

Among the forest's most abundant furred and scaly denizens are opossums, flying squirrels, foxes, red-backed salamanders, and river otters. The forest, which officials are resolved to have classified as an Important Bird Area, is also home to a plethora of bird species. Regular sightings include red-tailed hawks, crows, turkeys, and a wealth of warblers, sparrows, and other songbirds. A very lucky hiker might even spy a common loon, peregrine falcon, redheaded woodpecker, great horned owl, or pine siskin.

But in the recent past Black Rock Forest, which lies 60 miles north of New York City, was far from the secluded woodland that the campers trek. Once, this land was farmed and mined for iron ore, until it was purchased by Earnest Stillman, a medical doctor who designated Black Rock a nature preserve in 1928. Upon his death in 1949 he left it to Harvard University for environmental research. Harvard already had a research forest of its own in Massachusetts, and eventually began to seek a buyer for Black Rock Forest.

Then, in 1962, Con Edison announced its intention to build the world's largest pumped storage power plant on adjoining Storm King Mountain, which lies along the Hudson River's west bank**.** Harvard considered selling part or all of Black Rock Forest to the company. Black Rock's Upper Reservoir would have held Hudson River water for the hydroelectric plant, pumped from the river by night and tapped by day to generate electricity.

In 1963, the Con Edison applied to the Federal Power Commission for a license to build the plant. Two years later, the Federal Power Commission granted that license and Robert Boyle, a writer for *Sports Illustrated*, published an article about the havoc Con Edison's plant would wreak on local fisheries. Now, almost 50 years later, he is still shaken by the magnitude of Con Edison's vision. The plant, he says, would have been disastrous for the Hudson River and surrounding land. "It would have industrialized the river, at probably its most scenic point," he says. "It would have turned it into an industrial slum."

Boyle was not alone. The Storm King project ignited furious resistance from the local community, who turned to the U.S. Court of Appeals for the Second Circuit. By the end of 1965, Court had revoked Con Edison's license, but the legal battle dragged on for another 15 years. Meanwhile the National Environmental Policy Act (NEPA) was enacted in 1969, giving opponents of Con Edison a new legal tool in their arsenal. The National Resources Defense Council was also formed in response to the conflict and joined the fray against Con Edison. Finally, Con Edison officially gave up on the power plant in December of 1980. By then, Storm King had set a precedent--for the first time, locals had a voice in environmental decisions in their community. Storm King was the catalyst for environmental law in United States, and for federal lawsuits to consider both environmental impacts and economic interests.

Meanwhile, Harvard had backed down on the sale of Black Rock Forest due to public pressure and guidance from William T. Golden, who had served as the Science Adviser to Harry S. Truman and as the chair of the American Museum of Natural History (he also happened to be a Harvard alumnus.) Golden purchased the land and set up the Black Rock Forest Consortium in 1989.

His vision was to create a field station for New York City, says Executive Director William Schuster. He felt "this

should be the place where people go to, to see what the ecology of the New York area is like."

Although the Consortium conducts research and conservation work, "Education is really our biggest program area," Schuster says. Thousands of kids visit every year, most of whom attend member schools in the Hudson Valley and New York City. The summer science classes, however, are open to the public. The program runs in July and August, and offers week-long daytime and sleep-away courses for grades 7-12, including need-based scholarships.

Before coming to camp at Black Rock Forest, some of the students I meet felt more comfortable with nature than others. For the students in Maenza-Gmelch's "Biodiversity Blitz" course (which takes its name from an intense kind of field survey in which participants attempt to identify as many species in an area as possible in a short period of time), the rattlesnake on Black Rock Mountain is a welcome treat, but they are already motivated. Along the hike to the mountaintop, they listen to the smatterings of birdsong at 100 meter intervals, penciling in the species they identify (with their teacher's help) during five minute point counts. One student offers me her binoculars to get a closer look at some tufted titmice. Another becomes anxious that Maenza-Gmelch is compromising the integrity of the count by answering a question while they are listening for birdsong. "We can't hear the birds," he admonishes us.

Meanwhile, downhill, the "Surveying Turtles" class (led by Antonia Florio, a PhD from the American Museum of Natural History) is plunging into chest-high lake water to retrieve netted traps. The students, who have just met two days ago, call back and forth with easy familiarity--

"It's a catfish!" one student says, peering into a trap.

"We should fry it up," jokes another.

The turtles they are searching for are the focus of an ongoing project on population demographics. The students take measurements on the turtles' shells, age, and location, and scan them for identification tags. Most of the turtles they dredge up are small and easily handled, like the painted turtles that are distinguished by yellow and red streaks along their necks and limbs.

It turns out that this class, like the students of "Biodiversity Blitz," is in for a treat today: an enormous snapping turtle, muddy brown and writhing as it is pulled from its trap. Their instructors stow it in a plastic bin to await measuring. Eager as they are get a glimpse, the students dutifully move away from the ancient-looking creature to enter data on several much smaller painted turtles it was sharing the trap with.

And yet, despite the draw of snakes and snapping turtles, neither "Biodiversity Blitz" nor "Surveying Turtles" are even the camp's most popular classes. That honor belongs to New York University grad student Danielle Bunch's "Flying High Ornithology" class.

"It was a surprise," says Emily Cunningham, the Director of External Relations. "We thought all the topics were pretty intriguing. But the kids chose birds."

Black Rock Forest offers "Flying High Ornithology" for two of its week-long sessions. The class I observe was entirely booked by the Summer Youth in Science, Technology, Engineering, and Math (SYSTEM) program, which serves high school students from New York City.

"Some of these kids have never been birding or even used binoculars before," says Danielle Bunch. "I just want them to be cognizant of what's around them. I'm introducing them to birds to open their eyes and ears."

The students in "Flying High Ornithology" go birding, dissect a (roadkill) hawk, and capture birds in mist nets. Already they have have succeeded in spotting a great variety of birds, including scarlet tanagers, chickadees, worm-

eating warblers, vultures, wood thrushes, and catbirds. But, says Bunch, "They all remembered the mnemonic 'drink your tea' so when we see [Eastern] towhees they get excited."

The forest's more colorful birds have also made an impression. "My favorite bird that I've seen is the orange variant of the scarlet tanager," says student Joshua Simmonds-Raphael.

And some of the students are even thinking about how to carry what they've learned back home. Jenny Zhao, who regularly visits Brooklyn's Prospect Park, says, "If I learned more about the species of birds around there it would be really interesting to actually go birdwatching."

Enthusiastic teachers are key to the program's success. When he was designing the program, Kidder's first hire was Maenza-Gmelch, who had already taught small field ecology courses for students at Black Rock for four years. "The fun part," she says, "is I'm sure that these kids have heard in a classroom setting about ecology and migrations and things like that." But at Black Rock, "they suddenly find themselves involved in a whole body experience for research. They're actually in the water setting traps, they're learning the birdsongs, they're eating blueberries, they're smelling certain plants to identify them."

"Sight, sound, everything is involved with the research at Black Rock. They're very motivated. They motivate me."

Another challenge, though, is making sure that the program's city kids, like the students in "Flying High Ornithology," have a chance to appreciate the natural world. "Kids are so nature deprived," says Kidder. "I hate that term, 'nature deficit disorder,' but it's so true. If they live in a place that there isn't nature, and they never meet people that are engaged in nature or professional scientists involved in nature, what are the odds that they'll ever become? And as citizens voting, what are the odds they'll ever care about things like birds?"

Kidder has seen firsthand how powerful meeting real scientists can be for kids who would never otherwise consider conservation work as a vocation. Once, he took a group of kids from inner city Newark, New Jersey, on a field trip to the Delaware Water Gap. He booked a bear biologist to come speak to them--a bear biologist who, by fantastic coincidence, turned out to be a woman born and raised in Newark. "That was a priceless moment," Kidder says, particularly for the girls. "You could tell from their questions that they had no idea that somebody from their background could be a bear biologist."

At Block Rock, he finds that kids are especially "excited because they've never seen a grasshopper." His aim is to give urban students an opportunity to make nature relevant to themselves, and to discover that growing up to study nature, to track birds and wrestle turtles, is a viable career path. The irresistible and breathtaking moments--the snapping turtles and scarlet tanagers and snakes on mountaintops--have a deeper purpose.

And, in the future, he hopes to expand the program and reach even more kids. "I would love to involve the [Cornell] Laboratory of Ornithology and do some bird recording out here and the technical things about birdsong and neuroscience and bird brains," he says.

"I think a class about that for older students or even young college students would be extraordinary."

Con Edison failed to claim Black Rock Forest in the 1960s. Today, the outside world is still intruding, albeit in a much more welcome way. The 3,850 acres of mountain, stream, and woodland so close to New York City serve as a living laboratory for scientists, local students, and city kids alike--as long as they enter Black Rock on its own terms. Though Kidder feels that a week is "plenty of time to acclimate to nature," the most difficult adjustment for city kids occurs after the sun sets. "They're so used to streetlights, as soon as they see how dark it is, their minds to murder and ax murderers and horror stories."

But, when they finally venture out into the darkness, they are amazed by how bright the stars are.