



Photo by Chris Burville

RARE BIRDS

*The Extraordinary Tale of the Bermuda Petrel  
and the  
Man Who Brought It Back from Extinction*

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## Prologue

IN APRIL 2009, JUST two months short of four hundred years since the English ship *Sea Venture* wrecked on the jagged, shallow reefs encircling Bermuda and claimed the island for the Crown, I pounded over the choppy waters of Castle Harbour in a Boston Whaler Montauk with Jeremy Madeiros, the country's terrestrial conservation officer, to an island the early settlers called Nonsuch—pronounced *Nonesuch*—for its unparalleled natural beauty.

The land has changed so dramatically since the early seventeenth century that it's hard to say why Nonsuch seemed more breathtaking to untraveled British eyes than any of the 137 other islands that make up this 21-square-mile archipelago alone in the middle of the Atlantic Ocean. Two miles by boat from Tucker's Town, where today you can pick up a summer cottage for \$20 million or so, the long, low mound of rocky coastline topped with scrubby vegetation would seem unremarkable were it not for what is happening there.

I had heard in passing about a bird called the cahow, or Bermuda petrel, during the half-dozen trips I'd made to the country since the previous summer, when I was sent there to write a travel story for a magazine. But, like most people who know of it—including, it seems, many Bermudians—I had only a vague notion that the cahow was somehow significant. I had no idea how fascinating its tale was, and how instructive a warning it provided of humankind's power over nature, for good or ill.

Madeiras gave me the condensed version as we disembarked at the island's concrete dock and set off toward a small cluster of white-peaked buildings painted, in the traditional style, a sunny pastel. The compound was once a quarantine hospital; Madeiros and his family

now shared it with cockroaches, endemic skinks, and wolf spiders as big as your palm.

The cahow, he said, was believed extinct since the early 1600s, just a few years after Bermuda was colonized. Like its more famous kin the dodo, discovered in 1598 and last sighted less than a century later, the cahow had no significant predators until the arrival of man and his attendant rats, cats, dogs, and pigs. The trusting and docile birds were no match for the clubs and claws and teeth that bore down on them, and just eleven years after the wreck of the *Sea Venture*, the first known conservation legislation in the Western Hemisphere was issued for the cahows' protection—but as far as anyone could tell, the birds were already gone.

But imagine if a dodo were to suddenly stride out from under the forest canopy of the Indian Ocean island its ancestors once occupied. It was just as much of a jolt to the scientific community and the public when, in 1951, the cahow was rediscovered, clinging to survival on a few barren rocks in the only place on earth it calls home.

Accompanying the expedition that found the first live cahow seen in modern times was a fifteen-year-old Bermudian boy named David Wingate, who would grow up to devote his life to restoring Nonsuch to its virgin state and returning the cahow to its place in the world. For decades, Wingate alone worked to save the birds. He fought incredible odds in a race against time, more than once proving colleagues who called him crazy dead wrong. In an era before *conservation* became a household word, he had no template and virtually no government funding—but he gave the birds the chance they needed in their centuries-long fight for survival.

Madeiras, who took over the project when mandatory retirement forced Wingate to step down as conservation officer in 2000, led me to the artificial concrete burrows that dotted the ground a few steps from the backyard of his summer house, the only residence on Nonsuch. He removed the concave top of one to reveal what appeared to be a sooty, squirming, oversized cotton ball, and gently lifted Somers, as he called the bird—after Admiral Sir George Somers, Bermuda's founder—out of his dark, grass-lined nest and handed him to me.

Thus, on protected land that is as close an approximation of pre-Columbian Bermuda as can be achieved, I became one of only a few people in the world to hold the first cahow chick born on Nonsuch in almost four hundred years. Somers was the premier product of a translocation project started in 2005 that aims to move the birds off the rocky islets they now inhabit to an area less endangered by erosion and hurricanes, and more like the land they once so gregariously dominated.

The almost weightless bird sat placidly in my cupped hands, a coconut-sized ball of fluff with two stuffed-toy eyes and a beak the color of pencil lead. As I scratched the back of his neck with my thumb, Somers curled his head back in pleasure, revealing his reptilian roots in his exposed ear hole and the thin, wrinkled skin beneath his inches-thick gray down. He squeaked like a trapped mouse when I passed him back to Madeiros to be placed in a small canvas bag for weighing.

Encountering an untamed animal in the wild, as I had before on precious few occasions, is always a moving experience. This time it was made more so by the knowledge that Somers and the two-hundred-odd birds like him that constitute an entire species fought so hard to get here and remain locked in a daily battle to persist.

Before visiting Bermuda, I had never traveled to the same country even twice in a row, much less six times. But in that first week I learned enough about the island to know it was bursting with stories waiting to be told. Something about the place kept tugging me back, and in getting to know the residents, I heard about shipwrecks and treasures of gold, Civil War blockade runners and World War II U-boat patrols, unique cave species and millennia-old subaquatic cedar forests.

And then I met Somers. I had found the story I needed to tell.

## *The Bird Man of Bermuda*

DAVID WINGATE WANTS TO see his birds. “This is cahow weather,” he says, peering through the rain-splashed windshield of his white Suzuki Alto at treetops dancing violently in the wind. “We may be miserable, but the cahows are just yippee-happy right now. If we could go out to Nonsuch tonight, they’d be celebrating.”

Just a handful of people have seen cahows in flight, and even fewer have witnessed the staggeringly graceful, scramjet-fast aerial courtship they perform on only the darkest fall and winter nights. Wingate, though, has spent enough time with the birds that he has felt their wings brush the top of his head as they darted past him in the blackened sky, gliding ever slower through the air before dropping to land like a cartoon anvil. But in the past few years things have changed, and troubles from bad knees to bad blood have conspired to keep him from the birds he calls his first love.

This week he’s supposed to make his first trip to Nonsuch at night in two years. He’d been trying to get out there—or at least into the harbor in his boat—for a night watch once or twice every November since he moved off the island in 2003, but last year he didn’t go because of the knee-replacement surgery that laid him up for six months and left six-inch vertical scars in the dead center of both his legs. Before that—well, it’s a long story.

Mid-November is when the birds are most active, from a human perspective. It’s when the returning fledglings arrive at Castle Harbour after as much as four years spent flying virtually nonstop, drinking seawater and sleeping on the wing. During that time a young cahow might travel thousands of miles a week, weaving in and out among the rolling waves and heaving swells of the open ocean, a lone

feathered missile gliding and banking along the westerlies as it roams over millions of square miles of the Atlantic. Then, one day, a day like every other in the bird's life so far, some unknowable instinct kicks in; some primal urge tells it to head back to Bermuda to find a mate. And, like a high school senior hustling to Cancun for spring break, it does. And when it arrives, it lands within three yards of the tree or rock or sheer cliff wall from which it fledged. When it takes off again to get to the business at hand, it rises and dips through the night sky and calls to its new friends in low, spectral moans until that special someone answers and the sexual chemistry becomes so achingly clear that the other birds must roll their eyes and tell the pair to get a burrow.

Seeing that, to Wingate, is heaven, an adrenaline high like no other. But this week, as in Novembers recently past, the Fates are refusing to allow him his greatest thrill.

First, there's the weather, which is often unsettled in Bermuda this time of year. What the weather service describes as a "solid cloud deck" is hovering over the country; tomorrow it will combine with a low-pressure system from the south and the next day with the nor'easter created by what's left of Hurricane Ida as it charges up the coast of the United States, generating a mini perfect storm that will result in near-constant rain, winds gusting to 33 miles an hour, and a total of just a few hours of sunshine over the next three days. The small-craft warning that will be issued for each of those days would most certainly apply to Wingate's battered 17-foot Boston Whaler—not that that sort of thing usually keeps him out of the water.

Far worse than the weather, for Wingate, is that he threw his back out yesterday after having to bail his boat with a hand pump because the electrical system's on the fritz again. (Covering the boat while it's moored, he says, is "too much trouble.")

He turns into the parking lot of a bungalow-style pink building called Shorelands, which houses the Bermuda Department of Conservation Services, and slowly begins to extricate himself from his sardine can of a car, the smallest he could find in the country. He's here to go through two plastic storage containers full of old photographs to select some for a Canadian filmmaker who's in town shooting the

cahows for a DVD series on the environment. But Wingate can't carry the bins. He can barely make it into the building. He hobbles up the sloping lawn and, once inside, leans on any available surface as he plods forward, wincing and groaning all the way.

"I've turned overnight into a doddering old man," he says, finally lowering himself into an office chair in a first-floor conference room, where he can spread out the pictures on an enormous laminated table. "This is not me, you'll see."



At seventy-five, Wingate is a trim six feet tall and broad-shouldered, with a full head of uncombed white hair, thin lips, watery blue eyes, and the slightly crooked teeth of a British schoolboy. He has a short beard, also white, and his dress is emphatically casual, tending toward shorts, polo shirts, and boat shoes or Crocs for all but the most formal occasions.

"Whenever Dad had to come to something at school," his daughter Karen Wingate remembers, "my sister and I would be in agony. We knew he'd be late. And if he comes, what will he be wearing? Ripped shorts and a shirt covered in bird poop? He was always scruffy, with his hands bleeding and burrs clinging to him, because he'd be off in the bushes after a bird."

Like most Bermudians, Wingate speaks with a mix of accents—in his case, Scottish, handed down from his father's side, and English, from his mother's. Thus his nasally *cannot* becomes *canna* and *glasses* something like *glahshees*. Though most people pronounce the bird's name *ka-HOW*, as in "How now brown cahow," Wingate more often says *KA-how*, rhyming the first syllable with the vowel sound in the American pronunciation of *laugh*.

He had a skin-cancer scare last summer when he developed a persistent sore on his lip. Though a biopsy proved negative, just to be on the safe side he cut out a rectangular piece of cardboard and affixed it, dangling, to the back of his baseball cap with blue painter's tape. On cloudless days, he works the thing down over the bill of the hat,

past his wire-framed aviator-style bifocals, and over his mouth, where it jumps slightly whenever he talks. When asked why he doesn't just use zinc oxide on his lips, he replies that he prefers a mechanical barrier. He's thinking about replacing the cardboard soon with a leather version, maybe in the shape of a handlebar mustache—"to look like Mark Twain," he says with a chuckle.

"I think everyone, even his best friends, would say he's, well, he's not certifiable, but he's certainly a genuine eccentric," David Saul says of Wingate. Saul, a former finance minister, former premier, bird lover, and raconteur, is no slouch himself in the eccentricity department, with a specially made steel coffin—guillotine-ended for easy opening—accumulating coral while it waits for him at the bottom of Devonshire Bay a quarter-mile from the backyard of his house.

Saul can't recall any particular anecdotes to back up this assertion.

"No, nothing that I—I wouldn't have even mentally recorded anything like that because everything about him was strange. You'd meet him and there'd be a bird in his pocket. You know, what could be unusual about that?"

A live bird?

"Oh, sure! To open up his car and—I am sure when he was conservation officer he carried birds, turtles, live and dead, many, many dead, scores, if not hundreds, dead, in his various vehicles. But this would not be considered to be, you know, you wouldn't go home and say, 'I just saw David Wingate, guess what! Well, they'd say—' He shrugs. "If he was acting normal, we'd think he was ill."

Wingate was nicknamed Bird in grammar school, partly, he speculates, because of his prominent hooked nose. Saul dismisses this idea. "No, they'd've called him Hawky," he says. "It was because of his interest in birds, to the exclusion of everything else, probably even girls, at the time. Everyone in Bermuda who's over fifty still addresses him as Bird Wingate."

Saul, who is several years younger than Wingate and knew him only by reputation when they were growing up, maintains that Wingate took his childhood nickname as a badge of honor, but Wingate recalls it very differently. At a time in life when fitting in is the most

essential tool of social success, he was openly different, and he remembers being teased and bullied for his unusual hobby. "I was very lonely," Wingate says of those days. "In fact, I had a bit of an inferiority complex."

Wingate may have felt he was being cruelly taunted by the other boys at the Saltus Grammar School, but he also admits he "disdained" the bullies for—ironically—their single-mindedness. The difference was that while they loved football and cricket, Wingate's pursuit was, literally, loftier. He has kept detailed diaries since 1950, and in the first few books, he repeatedly mentions his disinclination for mandatory after-school sports, even going so far as to note that "everything turned out well" the day he was sent to detention because it got him out of "games." In February of that year, two days after the first local newspaper article about him appeared in the *Royal Gazette*—"BOY BIRD WATCHER HAS IDENTIFIED FIFTY DIFFERENT SPECIES IN YEAR," reads the front-page headline, in 36-point type—comes the following entry:

I was late for school, and found it a most miserable day, because the whole sixth form joked & laughed about my bird-watching as though it was a horrible crime.

By the next semester he seems to have toughened up a bit, as he mentions in passing "the perpetual annoyance and stupid name-calling such as 'Birdy' and 'Bird-Brain.'"

Wandering around with a notebook and binoculars, meticulously recording his sightings, he must have seemed hopelessly nerdy to the more sportive boys. But despite the mutual antipathy, he may even then have been beginning to earn their grudging respect, for in a place as small as Bermuda, it doesn't take long to make a name for yourself. By age fourteen, Wingate was presenting the neighbors with gifts of his ornithological lists and diaries and getting phone calls from adults all over the island—including at least one from someone at the Bermuda Biological Station—to come and identify unusual birds for them.

"If you ever had a sick bird," Saul recalls, "an owl that struck the

electric cables or anything, you just took it to his house and dumped it. Don't even bother to ring, to knock the door. Just leave it there. And if it was dead, he would stuff it. I would imagine he stuffed half the birds at the aquarium museum. In the general population's mind, the man is synonymous with birds. You just say, 'You know that crazy birdman,' and they'd all say, 'You mean David Wingate?' 'Yes, David Wingate.'"

Just a few years ago, Wingate's daughter Janet met a man with a cat who, without knowing who she was, volunteered that the cat's name was Wingate because, the man said, "he looovvves de birds."

Wingate wasn't always obsessed with birds, but he was preoccupied with the natural world from the time he could walk. At age three, he collected a herd of wood lice that he called his *beesh*, for *beasts*. He kept them in a matchbox and took them to bed with him, until his mother found them crawling all over the pillow. Chastened not by her disapproval—his parents were tolerant of his diversions—but by the possibility that she might expel his pets from their new homes, he simply relocated his menageries, catching bugs of various sorts and stashing them under the bed instead of in it. Occasionally a spider would escape and build a web over him as he slept.

"When you're a kid," he says of his attraction to crawling things, "your nose is close to the ground."

Wingate's parents, a postal employee and a legal secretary, didn't seem to know where their "born naturalist" came from, but were willing to indulge him, particularly as he was the baby of the family for thirteen years, until his sister Katharine came along. After a brief flirtation with astronomy—abandoned when, as he wrote in 1950, "I could not get the same thrill as I did before I found myself making silly blunders in judging the stars"—at age eleven his interest in the natural world took a turn toward birds. His older brother, Peter, had started an egg collection, which was a fairly standard pastime for Bermudian boys at the time, despite laws meant to protect nests from poaching.

"Every kid in the English countryside had a bird-egg collection," Wingate says, "going way back to the 1700s. Interest peaked in the nineteenth century."

Bermuda has been heavily influenced by both the United States and Great Britain, and in the 1940s and '50s, when Wingate was growing up, Victorian England was not the quaint bit of ancient history it seems now, but a part of living memory that continued to influence culture and daily life in the colonies, just as the 1960s and '70s do in America today. The amateur study of natural history and a passion for collecting were *tres façonnable* in the mid- to late-1800s, and the fad was particularly pronounced in the United Kingdom, where both of Wingate's parents were raised. Connoisseurs of everything from seashells to beetles abounded in the middle and upper classes, and those who had the money would send emissaries to the far corners of the earth to obtain for them ever-rarer specimens.

Wingate's great-grandfather was among those caught up in the fascination for diversity and predilection for cataloging that characterized the time, though in a slightly different form. James Wingate was a noted collector of Scottish coins who wrote the definitive book on the subject in 1868 and sold his stash of ancient groats and testons seven years later for £3,263. The price, called "fabulous" in 1905 by the *Coin Collector*, was equivalent to about \$1.75 million in today's dollars.\*

Unlike his zealous ancestor, Peter Wingate grew bored with collecting when the opposite sex began to appeal. But David seemed to have inherited the accumulator's gene, and made sure his brother's lovingly amassed hoard didn't go to waste. He adopted the clutch and would eventually take his absorption with it several thousand steps beyond anything Peter could have imagined.

By age twelve, Wingate could distinguish a greater shearwater from a Cory's shearwater and a bay-breasted warbler from the blackpoll variety. He spent every spare moment exploring the forests and beaches and salt marshes of Bermuda, counting snowy egrets and white-eyed vireos and hoping for a glimpse of a migratory American avocet or a white ibis. In 1949, the American naturalist Richard Pough, who two years later would help found the Nature Conservancy, met Wingate on a visit to Bermuda, where Pough and his wife often spent their

\* Bermuda used the English currency system and tied its values to the pound sterling until 1970, when it switched to Bermudian dollars, which are on a par with the U.S. dollar.

December wedding anniversaries. He sought out Wingate's parents to tell them the boy had potential.

"He advised them to buy me a *Peterson Field Guide*," Wingate recalls, "and then they got me a pair of binoculars. It was the best Christmas present ever." Wingate took off on his bike, and the family didn't see him for the rest of the holiday.



The photos haphazardly thrown together in the plastic bins on the conservation department's conference table stretch back to the early 1940s. Maybe a tenth of them are from Wingate's personal life—him as a child, clean-cut in a white dress shirt; him in his twenties, laughing with his brother and sisters and parents on the manicured lawn of Aldie, the family home; several of his wife Anita looking serene on their wedding day. But most, floating loose in no particular order or in manila envelopes marked "On Her Majesty's Service," span his career as Bermuda's first conservation officer.

Though it took half a decade for him to get an official title, he started working at the position *de facto* when he returned home from college with a B.S. in zoology and a dream to save the cahow.

Even for a young man with great ambitions and an inevitable degree of naïveté, the challenge must have seemed overwhelming. The last known sighting of a live cahow had come around 1620; for 330 years, as far as anyone knew, the birds had been extinct, eaten into oblivion by the first settlers to Bermuda and the animals they'd brought with them. By 1951, when the American ornithologist Robert Cushman Murphy and Louis S. Mowbray of the Bermuda Aquarium stunned the world by announcing they had rediscovered the cahow, the bird had long since come to seem little more than a legend.

Wingate was fifteen and along for the ride when the two scientists made the extraordinary find. Rarely, outside of fiction, does a single moment change a person's life in so clear and defining a way, but when Murphy extracted a blinking, docile adult bird from deep in a rock hollow and held it up to the light, everything else fell away from

Wingate's field of vision. "All I knew was that I had a calling," he says. "Bringing back the cahow was what I was meant to do."

He says he doesn't remember wondering, even after college, how he'd make a living at the task he'd set for himself, or how long it might take to see success. "I don't think it mattered," he says, "because it was a lifetime commitment. I wasn't thinking of it as a project with a beginning and an end. I was seeing it as a way of life."

But it would be a life without a road map.

According to Stuart Pimm, the Doris Duke Professor of Conservation Ecology at Duke University's Nicholas School of the Environment, "No one—or very, very few people indeed—had ever tried anything like this before."

Prior to the founding of the World Wildlife Fund in 1961, the ever-increasing rate of species loss was not understood, nor was the fact that human beings could help restore what they had once destroyed. "David Wingate was one of the early pioneers," says Pimm. "The Society for Conservation Biology was founded in 1985. He started almost thirty years prior to that. That's what makes him such an iconic figure. He was out there in the middle of nowhere, and he had to just suss it out. There wasn't a manual. Not only wasn't there a manual; there wasn't even a literature. It wasn't as if he could have gone to scientific journals and found any advice on saving a species."

Even captive-breeding programs, Pimm adds, were in their infancy. Around the time of the cahow's rediscovery, the British ornithologist and conservationist Sir Peter Scott began working with the nene, or Hawaiian goose, which, like the cahow, had been decimated by humans and human-introduced mammal predators. In 1952, with only thirty nenes known to exist in the wild, Scott began breeding the birds in England and reintroducing them to their native Hawaii; today their population numbers around nineteen hundred. "Of course," Pimm adds, "the thing about the cahow is it's something you couldn't breed in captivity. There's no way you could do that with a bird like the cahow. The only thing you can do is nurse the wild population back."

Cahows presented other challenges as well. For one, they were an



utter mystery. Some facts could be deduced from research on other petrels, but little was known about *any* petrel species. As pelagic birds, petrels spend up to 90 percent of their lives in the most remote parts of the open ocean. They are rarely seen except during the breeding season, and in the 1950s the technology to track their movements the rest of the year had not yet been imagined, much less invented.

Vexing schedule aside, there was the inconvenience factor. Petrels are part of the order *Procellariiformes* and the family *Procellariidae*; both words derive from the Latin for "a storm or violent wind." Because they use the wind's energy to conserve their own, the birds are most active during the worst weather, when humans, scientists included, prefer to tuck up indoors beside a cozy fire. When they're not flying, cahows and most other species of petrel shelter deep in earthen burrows or rock crevices, as far from civilization as they can manage. And cahows are nocturnal; artificial light disorients them, and they shy away even from bright moonlight.

How could Wingate protect something he couldn't even see?

He picks up a black-and-white photograph of a Bermuda street scene—more of an unpaved-road scene, really. In it, vegetation is bursting over the low stone walls and towering rock cuts on either side of the road, which curves away into a shadow that falls from cedars so high and broad they almost touch one another overhead. An open buggy is grinding through the crushed-coral surface of the road up a slight incline with a bicyclist hanging onto either side of it, the horse straining against the added weight. "People would tie on going up the hill," Wingate says. "This is the way I grew up, pedaling my bike home from school." He flips the picture to check the date on the back. "Nineteen forty-eight. I was, what, twelve."

Bicycles are called "push-bikes" or "pedal-bikes" in Bermuda, to distinguish them from the sputtering, spewing motorbikes that have become inseparable from the national character. Two years before this picture was taken, the Motor Car Act was passed, allowing the "general use" of automobiles. Today there are more than 47,000 vehicles on the road here, giving the country one of the highest traffic densities in the world, with more than 2,300 cars, trucks, and motorbikes per square mile.

Though he's seen them many times before, Wingate remains fascinated by the photographs. "Oh gosh, makes me weep," he says, "to see how much it's changed."

Though tourism had been growing steadily at least since Mark Twain first visited in 1867, it essentially halted during World War II, when British and American servicemen swarmed the island. But the war brought the country to the attention of a lot of people who'd never given it a thought, and as early as the summer of 1946, according to a "Letter from Bermuda" published in the *New Yorker*, about six hundred American tourists were arriving every week, with thousands more already reserving space for the following fall. The price of a room had risen by 30 percent, from \$12 just five years earlier to \$16 or \$17. "The friendly invasion of uniformed visitors and the abnormal boom they have brought may mean the end of life's leisurely pace here," the story predicted. "There is a general feeling of acceleration."

The resident population, which was less than 20,000 at the time of Bermuda's first census, in 1911, had grown to 37,403 by 1950, the year before the cahow's rediscovery. Flush with wartime cash and unregulated by a government anxious for greater employment and ever-more tourist dollars, developers started throwing up houses and hotels like children collecting Monopoly pieces. The country almost completely lacked conservation laws, and the ones that existed were rarely enforced.

When Wingate returned from college in 1957, it was to an island changed. Few people in Bermuda knew about the cahows and even fewer cared. If development continued at its current pace, he feared, the dozen or so birds left would be buried under a heap of concrete. He knew his only hope was to turn back time.



For more than three centuries, cahows had been cloaked to mankind by darkness and isolation. Predatory brown rats on Castle Harbour's larger islands had relegated the few birds still clinging to existence to five satellite islets that people rarely if ever visited, particularly during the hours the cahows might have been visible.

"In those days no one in their right mind would have thought of landing on those islands at night," Wingate says of the years just after rediscovery.

The islets are composed almost completely of eolianite, a porous, thorn-sharp rock formed by the gradual cementation of windblown, wave-hardened beach sand. Their landscape is as jagged as an EKG readout, and the water churns around them in all directions and continually crashes against their sides and across their low-lying areas. Castle Harbour is in Bermuda's lee, but that's small comfort when unchecked ocean winds sweep over the nearly flat archipelago as though it didn't exist. The harbor is also open to the south shore, so tremendous tidal currents surge through twice a day as they flow onto the Bermuda Platform and then off again. Even a mild breeze running against the currents can turn the water to a chaotic plane of chop.

As a cahow habitat, the few craggy acres scattered about the harbor were far from ideal. First, the birds had only the rocks' natural crevices in which to incubate their young—what little soil there is sits on the islets like a toddler's kippah on a bald man's head—and were competing for scarce nesting sites with white-tailed tropic birds, which would trample and peck cahow chicks to death and take over while the adults were out fishing. But even more worrisome, the islets, whose total area is less than one-four-thousandth the size of the cahow's original breeding ground, are crumbling into the ocean due to erosion, hurricanes, and the action of several species of clionid—a boring sponge that dissolves rock just below the tide line, undercutting cliff faces to such a depth that the limestone above eventually comes crashing down.

Wingate knew he had to get the birds off the islets and onto more stable ground, but there weren't many options for habitat relocation.

Since the Revolutionary War, Bermuda had been an important military site for Great Britain and the United States, and in the early 1940s, the latter had connected Long Bird and Cooper's islands to St. David's Island to make room for an airport. Charles and Castle islands were too close to the mainland to keep mammalian predators away, and Southampton was so difficult to land on that monitoring the birds without permanent shelter would be next to impossible.

Then there was Nonsuch. A vaguely boomerang-shaped hump of land about a hundred yards from where the birds were found in 1951, it was isolated enough from the mainland that predators could be controlled, and at fifteen acres and forty feet above sea level, it would provide the cahows with enough soil to someday nest in the thousands. It would make a nice habitat for Wingate, too, with a handful of ramshackle buildings that were once the site of a yellow-fever hospital.

By the time he started to think seriously about moving to the island in 1958, he knew that to save the cahow, he had to give it a proper habitat. He hadn't worked out quite what that meant, though, until he noticed the skinks.

"They were abundant on Nonsuch," he says of the Bermuda rock skink, a critically endangered seven-inch-long lizard that is found nowhere in the world but here. "There were forty times as many as on the mainland, where feral cats prey on them and they get trapped by the litter on roadsides. So it dawned on me that hey, this island, because of its isolation, is a sanctuary—not just for banner species like the cahow, but for a whole lot of other facets of our heritage. Why not capitalize on this and make it a living museum of precolonial Bermuda? In other words, take a holistic approach and restore everything together in its original context."

The first, most major challenge for Wingate would be reforestation. "Without the forest, none of the other flora or fauna could come back," he says. But the forest on Nonsuch had been wiped out by a botanical blight that had hit the entire country several years earlier. "Every tree on the island had been killed, and there were about a dozen goats living over there, which had grazed away the rest of the vegetation so that the birds had disappeared too. There was virtually nothing left."

A photograph from the time, except for having been taken in broad daylight rather than against the backdrop of a scabrous full moon, looks exactly like the stereotypical illustration of a haunted house: You're standing at the bottom of a gently winding path that leads to a huddle of stone buildings atop the distant hill. On either side of the path is a lumpy collection of sparse green scrub no more than knee-high, and about thirty defoliated cedars fill the frame. The ones

to your left have broken off and their tops have blown away; the ones to your right arch over the walkway at nearly 90-degree angles, their kyphotic stance created by years of battling those same harsh winds in a fruitless scrabble toward the sun. The trees' ghostly gray limbs might grab you at any moment, you fear, as you imagine the sound of a lone wolf howling in the distance.

There were no wolves on Nonsuch, but it's almost amazing they never made their way to the island. For the history of invasive species crowding out the plants and animals that belong in Bermuda, if it weren't so tragic, would read like a Keystone Kops episode of good intentions gone awry.

The earliest invasives, of course, arrived aboard the first ships to land on Bermuda's shores. Then, "increased communication with the outside world resulted in a new wave of faunal and floral introductions during the Victorian era," Wingate wrote in a 1985 paper. "But most of these were relatively benign and their impact on surviving native species was cumulative rather than catastrophic."

True catastrophe came when an American industrialist with the improbable name of Carbon Petroleum Dubbs moved into a 12,000-square-foot house on Grape Bay Drive in Paget Parish, just across Hamilton Harbour from the capital city. He decided the home's fourteen-acre grounds weren't quite the showpiece he'd envisioned, and brought in some plants from the United States to spiff them up a bit. Among the nursery stock that was shipped to him from California around 1943 were some junipers.

In the middle of the twentieth century, seventeen indigenous plants could be found in Bermuda, giving it, as one visitor wrote, its "unique but monotonous loveliness." The most dominant plant, by far, was the Bermuda cedar, which is actually a type of juniper called *Juniperus bermudiana*. It is an evergreen with a thick trunk, gnarled branches, flat leaves that form a soft-needle fan, and reddish wood that is sweet-smelling and exceptionally hard. The trees were once used to make houses, ships, furniture, tchotchkes for the tourists, even coffins. They were burned as fuel and prized as natural privacy fences. In the absence of predators, they can live two hundred to three hundred

years, and inland cedars can reach a height of fifty feet. They are hardy, well-adapted to growing in Bermuda's shallow soil, impervious to sea spray, and unparalleled as a windbreak. In the early 1940s, between two hundred and five hundred Bermuda cedars stood on every one of the country's thirteen thousand acres.

The American naturalist Addison Emery Verrill, writing about Bermuda in 1902, remarked that the cedar was "very little affected by insects." That changed quickly when the trees were colonized by the scale pest *Carulaspis minima*, which probably wouldn't have survived a water crossing but arrived alive and well on C. P. Dubbs's junipers thanks to the advent of air transport on the island a few years before.

The voracious bugs multiplied rapidly and spread across the country with shocking efficiency, perhaps in part because of the anole lizards that had been imported from Jamaica in the early 1900s to control the Mediterranean fruit fly, which had somehow got to Bermuda and was ravaging the citrus crops. Fruit flies, it was soon noticed, turned out to be among the anoles' least favorite treats, but over the four decades they'd been on the island the lizards had significantly decreased the populations of other beneficial insects that might have eaten the cedar scale.

The scale looked like a harmless dusting of snow, but it could strip a tree bare within six months of colonizing it, and in the end it destroyed 95 percent of the country's forest cover, including all but one cedar on Nonsuch. It was helped along in its devastation by the oyster-shell scale *Lepidosaphes newsteadi*, which probably arrived in the 1930s on plants imported for the Castle Harbour Hotel development in Tucker's Town, just southwest of Nonsuch, though its exact provenance was never discovered.

The Department of Agriculture's first response to arresting the destruction was to spray the trees with insecticide, but this proved impractical because it endangered drinking-water supplies. Biological control was the only way.

So between 1947 and 1953, twenty or thirty species of ladybugs—known in Bermuda as ladybird beetles—were introduced from various parts of the world, and an entire subdepartment of government

sprang up to oversee their breeding and distribution. The project was started too late to have an immediate impact, though, and anyway, says Wingate, "the anoles would jump on the boxes of ladybirds placed in the field and eat them as they were coming out."

To control the anoles, kiskadees, small but aggressive yellow-breasted birds that attack in packs, were imported from Trinidad in 1957. Also known as tyrant flycatchers, they didn't make much of a dent in the anole population, since the lizards breed year-round, replacing their losses even in situations of high predation. But they did kill nestling vireos, catbirds, bluebirds, and cardinals, baby skinks, and the Bermuda cicada, which is now extinct largely because of them. As a newly minted college grad, Wingate says, "I recommended vehemently against bringing in the kiskadees on the basis that most island introductions—especially of omnivores that are unpredictable in their effect—were a disaster. Not only did the kiskadees kill other birds and the cicadas, but they also spread a lot of invasive plants that might not have been spread without them."

"I jokingly suggested at the time, 'Let's introduce tigers to control the kiskadees.'"

Surprisingly, no one took him up on the offer.



After a visit to the doctor and a few days lying in a recliner in his living room popping painkillers and muscle relaxants—a practice to which he submits out of only the most desperate need—Wingate is feeling, if not back to his usual bouncy self, at least well enough to make the trek out to Nonsuch.

The bad weather is finally moving on, but its tail is still dragging through the area, blowing enough to raise the surf and continuing to pelt the mainland with soaking rains two or three times a day. Wingate gathers up his cardboard-rigged hat and the forest-green Swarovski binoculars he is never without, and gingerly folds himself into the Alto. As he rounds a curve of Harrington Sound Road going toward the public wharf in Tucker's Town Bay, where he has been mooring his various boats since 1958, he pulls the car over as far as

he can—the roads here have no shoulders—and gets out to check for common terns, which like to perch on buoys in the sound waiting for bait fish to pass beneath them.

"It's a hell of a place to stop because the motor traffic's always honking at you," he says, unfazed by the backup he's causing. "But then to hell with them."

Once he makes it to the wharf, he realizes Penny Hill, the slim, silver-haired retired librarian he lives with, was right when she said there wouldn't be enough gas in the boat, so he doubles back to the house to retrieve his extra tank. Then, of course, the little Whaler—called *Rare Bird*, it's chipped and faded by the sun, with worms of rust in the anchor well, a cracked windshield and ripped seat cushion, and an orange life vest hanging from a forward cleat to act as extra bumper—needs a good twenty minutes of bailing. But once he's finally underway, Wingate is in his element, pointing out the Castle Harbour forts, where militia and soldiers were garrisoned for two hundred years beginning in 1612, a folly built on the old Frick property at the end of Castle Point, and Charles Island, which in 2003 had a 20-foot notch gouged out of its middle by Hurricane Fabian, the worst storm to hit the country in decades. "Pretty soon, these little islets will be gone and this will be a channel," he says, segueing into a capacious overview that touches on Bermuda's geology, currents, weather, history, and, his favorite topics, flora and fauna.

"Ninety-five percent of the plants in the country are invaders," he says as the boat bangs along the surface of the water in spine-jarring rhythm, losing distance on a mountain of gray cloud rolling in from the west. "The continents are more resilient to invasive species than an island like Bermuda because larger landmasses have more niches filled with species that evolved to fill them. But oceanic islands often have huge numbers of vacant niches, because only a few species get out to them. Which is why invasives can completely take over."

Just as a few fat raindrops begin to fall, he reaches the island, tying the boat to the skeletal remains of a barge that once supplied Bermuda's Royal Naval Dockyard with water and was brought here in the 1930s to act as a breakwater. Wingate takes damp shelter in the caretaker's cottage he lived in for a few years after his retirement. "I

can call Penny and find out if there's an end to this storm," he says. "If not, we'll just have to ride it out."

To Wingate, nothing could be more natural than being stranded on an uninhabited island in a punishing downpour. "We had two children," he recalls of the early 1960s, when he and Anita moved to Nonsuch. "Janet was two and a half, and Karen was less than a year old. In storms we would essentially be marooned, with no telephone or other communication, not even a marine radio. My parents, on the mainland, had no idea how we were faring. But I'd been doing crazy things long enough that they knew I wouldn't risk my family."

When a hurricane hit, the island made an excellent observation post. "It's better if you like birds," he concedes. "They get trapped in the eye and dumped on land. In Emily, in 1987, the eye was fourteen miles wide, and the wind changed a hundred and eighty degrees in the course of two hours when it went over. Sargassum weed and little fish were sticking to the windows the next morning."

After today's storm passes, he roams the lush, still-dripping island ripping invasive plants out by their roots and talking about the Brazilian pepper and asparagus fern whose seeds are carried to Nonsuch by wind or birds or on the feet of visitors. Enough of the seeds take root that they make the task of maintaining the native forest truly Sisyphean. "I worry because holding off the invasives is like putting your finger in a dam, trying to stop the flood," he says, reiterating his persistent theme that certain elements of the project he began have been loosely managed since his retirement. "Things that make this a holistic approach—and it really needs to be one—are being neglected."

At the bird hide he built in the mid-1980s beside the island's man-made freshwater pond, his concerns seem well-founded. A scrum of cattails and bulrush lining the shore obscure the water completely, and not a single bird is visible.

"The pond has been left so long now it would be a huge job to clear it, and my back is too bad," he says. "I could organize volunteers."

In Bermuda, civil servants must retire at age sixty-five, and since 2000, the year of his life-altering birthday, Wingate has had to watch

from the sidelines as others—notably his former protégé, Jeremy Madeiros—have done things their own way instead of his. It has not been easy, since for Wingate, handing off the baton meant giving up much more than just a job.

"His interests were narrow in some ways," says Walwyn Hughes, a former senator and former agriculture-department head who was Wingate's first boss. "He was focused so entirely on that island and on the cahows. They were his life."

The transition to Madeiros didn't go smoothly, and now, almost a decade later, Wingate is still hurt and angered by the events that took place. But in the hide, his grouching eventually gives way to nostalgia.

"This used to be my Discovery Channel," he says, looking out toward the pond from the little building's pleather-upholstered bench. "The window is like a television screen, but it's the real world. All the land birds come in to get a drink and bathe, and the waterbirds stop by on their migrations. I never knew what I would see—sora rail, bitterns?"

Suddenly he starts clapping, then makes a high-pitched *kak kak kak kak kak kak kak kak kak* sound followed by a susurrant *psb psb psb*.

"A flock of barn swallows? A dozen or so would roost on the cattails at night. It was amusing because the more that land on the cattail stem, the more it sags, and then they all slide off. Sandpipers, plovers, things that breed in the Arctic tundra and winter in South America. Wild ducks, herons. Moorhens, I guarantee."

One thing he never saw near the hide, or anywhere else on Nonsuch, was a cahow. But as he sits here trying in vain to attract some avian attention, he gets the call he's been waiting for all day: Chris Burville, a twenty-eight-year-old photographer and former dive instructor, is taking his boat out to attempt to capture some cahows in flight—an endeavor that would have been inconceivable just a little more than a decade ago. The first sighting of a cahow at sea didn't occur until 1993; the first photograph of one in flight came in 1996. Together, these events warranted an eighteen-page paper, "Identification of Bermuda Petrel," in *Birding* magazine.

Wingate heads back to the barge, unties his boat, and motors around the peninsula at the southern tip of Cooper's Island to St. David's, where he's to meet Burville at the pier behind the Black Horse Tavern, a restaurant that serves hamburgers, fried everything, and a few traditional dishes, including a fish chowder that uses, like something poured from Dan Aykroyd's Bass-o-matic, heads, tails, and whatever else happens to fall into the pot. It's considered good luck to get an eye.

After ordering a fish sandwich and a Corona, Wingate sees the thirty-two-foot *Century Options* pulling in to dock and heads down to greet her. He steps over the gunwale amid excited chatter about the birds. Already onboard are Burville and his girlfriend Sarah Lagan, a reporter for the *Bermuda Sun* newspaper; Burville's cousin Jeffrey Porter, a former Bermuda Aquarium employee; and Russell Whayman, a retired businessman who lives in St. David's and has been letting Burville keep the boat at his house.

It's late afternoon, and the birds should be starting to gather far offshore. Once out of the harbor, Burville opens the engine to about twenty-five knots—not too fast, since the receding storm has left the water roiling with twelve-foot swells. As the boat approaches the edge of the reef shelf, less than two miles offshore at a depth of two hundred and twenty feet, Wingate yells, "*Cahow!*" He points over the starboard bow. "There he is! There he is!" Immediately, the boat's motor is cut and Burville, Porter, and Lagan start stumbling around after the lights and reflectors.

"Bird off to the side!" says Whayman. "There's two of them! There's two of them!"

"Oh oh oh yeah! Yup! Yup!" cries Burville, bracing himself against the hydraulic billowing of the deck. "Sarah, where's the light?"

"He's coming back! He's coming back!" says Porter, aiming some high-powered strobes over the starboard side.

There could hardly be more excitement if a unicorn had been spotted sipping a mai tai in a shaded pool float.

"Christ!" yells Wingate.

"The other one's right there," says Burville. "Right there! Nine o'clock!"

The birds, oblivious to the uproar, are hard to track. Spot one and the next time you see it it's five hundred yards away, behind the boat one minute and in front of it the next, dipping to the water and soaring up again, coming impossibly close but never seeming to touch the surface. They rarely flap their wings yet speed across the waves like weightless gymnasts—ethereal, delicate, effortless. A hawk, by comparison, seems anchored to the thermal, and a peregrine falcon, clocked at 200 hundred miles an hour, appears a clumsy dead weight plummeting from sheer gravity.

When the two birds start wheeling away toward the open sea, Burville hands Whayman a plastic liter bottle of fish oil to spill from the stern as he pushes the throttle forward to get the boat moving again. The cahows reappear instantly, and Burville, reaching for his camera, swears as he slips on the deck's slick surface.

Wingate, meanwhile, is counting birds. "One, two, three, four . . . five, I think," he says. "If you're lucky, you might hear their courtship calls. Ooooo-eek! Ooooo-eek!"

"I definitely see four," says Whayman. "Five, five. There's four behind the boat and two out there. That's six!"

"Did I not tell you guys that David was the best lucky charm for cahow-watching?" Burville says, his shutter clicking incessantly.

The commotion dies down after the first couple of sightings, but Burville keeps at it, trying until the sun reaches the sea to get a shot of a cahow against the baby-aspirin-pink sky.

"That was great stuff," he says as he reluctantly starts to pack up his gear. He points toward the horizon. "There's still one over there. That fish oil really works."

"Yeah, until they find out there's no fish," Porter points out.

"That was just about as good as we've ever had it. I think they recognize David. Every time David comes out in the boat with us we get more."

"They're my babies," Wingate replies. "Can you imagine what it would have been like four hundred years ago? They would have been all over the place."