

## Not Even Past

by Stephen J. Pyne

“The past is never dead. It’s not even past.”  
- William Faulkner

### *Slash and burning*

In 1939 some 300 acres of former farmland in Baker County, Georgia was converted to slash pine, the latest of the serial plantations that have characterized so much of southern economies. The fast-growing conifer, laid out like the row crops before it, sat amid a classic old-field rough of grasses, forbs, weeds, and hardwoods, kept at bay by chemicals and mowing. The routine burning that had played over the landscape for centuries was banished since the pines would remain vulnerable to surface fire for 20 years. Instead the plot went through a prescribed cycle of silvicultural treatments, primarily thinnings, before fire rejoined the mix in the 1960s as a low-cost technique for keeping down fuels.

All this was not unusual for the time and place. The Great Depression had crushed marginal farming, and a market for southern-pine pulp had emerged. The southeast was fast replacing worn-out cotton fields with its new commodity crop, pine. What was different was that the land belonged within the complex known as Ichauway Plantation, created as a 29,000-acre private preserve for quail hunting. By the time those slash pines reached maturity, however, Ichauway was itself fast morphing, not unlike the lands it had converted from tenant farms to tree farm. It was now under the direction of the Joseph W. Jones Ecological Research Center, and the Jones Center wanted the land to return to its roots as a biota defined by wiregrass and longleaf pine.<sup>1</sup>

The usual scenario would have been, as in the past, to cut, plow, and plant over. Fell the slash pine and hardwoods. Harrow and herbicide the understory. Sow native grasses and longleaf. Treat the inherited landscape as urban renewal practices of the time did cityscapes. Wipe out the unwanted past and strike out immediately to the future. Ichauway, however, saw another path diverging in those woods. It elected to build on the imperfect, inherited present. It would step, not leap, into the future. Ichauway would evolve incrementally by keeping most of the mature slash and gradually replacing them with planted longleaf. For this the restorers needed fire, and for fire, ample fuels. That made the restoration of wiregrass, a lush fuel intimately associated with native longleaf, a critical consideration. The legacy of plow cultivation, however, had stripped the site of wiregrass; it would have to be reintroduced through sowing; and to flourish it would need to be burned.

Wiregrass was not only itself an important fuel: it platted out a biotic matrix for the others, particularly conifer needles. In the distant past this dynamic had happened naturally as falling longleaf needles got snared in wiregrass’ fountain of fronds. It would take decades before the reintroduced longleaf could mature sufficiently to serve that role, but the mature slash pine, no longer harmed by surface burns, were already doing it almost as well. Besides, scarifying the site by clearing and planting would only further sour the soil for wiregrass and thicken the woods with weeds. Paradoxically, shock treatment would prolong the process of conversion.

Building on the inherited structure, however, would allow wiregrass and needle-cast to create a synergy that could coat the surface with the combustibles needed to restore something like the old regimen of fire. Regular, even annual, burning could then wash harmlessly over longleaf seedlings, decimate slash regeneration, and rejuvenate wiregrass. Bit by bit, fire would allow longleaf to supplant slash in a virtuous cycle in which the old order contributed the fuels for its own slow immolation. Paradoxically, by persisting, the past would make the future possible.

This new conversion would require patience and a very long view. It had taken 60 years for the slash to mature, and it might well take another 60 for longleaf to complete the cycle.

Generations of human overseers would come and go in the meantime. When measured against the cadence of annual or biennial burns, the tenure of their passage might seem long; when measured against the deep rhythm of the longleaf forest, it might seem fleeting; but restoration was a project that no one generation would hold wholly. Its narrative would span beyond the grasp of its creators. In all this the plot might stand as a cameo for the saga of Ichauway itself.

### *Flight of the Firebirds*

Ichauway Plantation was the creation of Robert W. Woodruff, long-reigning president of the Coca-Cola Company (1923-1954) and subsequently a 30-year member of its board. From 1929 until his death in 1985, Woodruff acquired small farms which he transformed into a quail-hunting plantation. At his death, his munificent estate went into the Robert W. Woodruff Foundation, one of whose charges was to maintain Ichauway in something like its existing character. Extensive consultations followed; there was the example of the Tall Timbers Research Station by Thomasville; and the site had been used in the past by Emory University as a field station, most spectacularly for malaria research under Eugene Odum, a founder of ecosystem ecology. The outcome was the Joseph W. Jones Ecological Research Center, established in 1991, as a means to satisfy this wish.

The legacy of “Mr. Woodruff” is everywhere visible. It begins with the geographic arc of the plantation’s lands, reflecting the pattern of his purchases and their landed structures. Rudely U-shaped, Ichauway is a pastiche and palimpsest of past land usage, of old fields, seed plots, hammocks, pastures, wetlands, woodlots, and piney wood savannas. The legacy extends equally to the built environment of houses, barns, roads, and workshops. These would be managed in much the same way as the land. And, not least, the story of the Woodruff legacy follows itself a narrative arc – an archetype - remarkably similar to that of the slash pine plantation.

Woodruff’s modest residence remains exactly as it was the day he died. The Ichauway store endures more or less intact, still selling dry goods to the residents of the plantation. Most other edifices have been moved, removed, or rebuilt. At its height Ichauway held some 200 tenant structures; these are now down to 20, rehabilitated and relocated to a central historic zone, and occupied by the plantation’s new residents - research scientists, graduate students, and general laborers. In brief, those structures that are no longer necessary have been culled out and the new recreated in its place, all in a process of selective substitution. The tempo of change from hunting plantation to ecological research center is faster than that of the forest but the two processes share a common model.

It’s not hard to see why: this is an anthropogenic landscape. Remove its people and Ichauway would soon overgrow with rough and hardwoods, burn savagely here and there, and change its character. It is the land’s ancient occupation by people that has made it something people value: they have shaped it not only to their own interests but in their own image. When the land changes, it must evolve out of the legacy bequeathed to it. Since the process occurs incrementally, the shape and temperament of that inheritance – the past - persists.

Ichauway arose out of small farms and woods. The mix of patchy croplands, open woods, and brushy rough offered an ideal habitat for northern bobwhite quail. Since Reconstruction hunting plantations catering to the wealthy had taken root in the region, particularly around the Red Hills, serving America’s elites as the grouse-hunting estates of Scotland did Britain. In both cases, the landscape had flourished amid the decline of former agricultural sites. Then decay became decadence, and the population of preferred birds of prey plummeted. Much as Scottish lairds turned to a Grouse Commission, so southern landowners, with the help of the U.S. Biological Survey, created a Cooperative Quail Study to investigate why. The conclusion in both places was the same. The habitat had collapsed, and it could only be resuscitated by burning. Both inquiries concluded that it was almost impossible to burn too much.<sup>2</sup>

So Ichauway burned. Not all of it, since not all was committed to quail habitat. Not equally, since parts were added at different times and came with prior histories that had to be massaged variously into the system. But the prime hunting grounds were likely burned annually between late February and May, after the hunt and before nesting. Set fires were light and backing, and often kindled at night. Other sites burned as possible, some deliberately, some accidentally, some occasionally through lightning. The outcome was an elaborate patchwork of fire and fallow that suited the bobwhite quail and its hunters equally. Fire was a bond between them: both were fire creatures, a fire bird and a fire hunter.

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With the advent of the Jones Center the push began to render more of the land into the character typical of its earlier days when longleaf savanna blanketed the coastal plains as tallgrass prairie did the Great Plains. In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, industrial logging and turpentine had stripped longleaf, the fabled southern yellow pine, from the scene. Before then, it had comprised some 60-90 million acres throughout the southeast; now less than 3% remained, all scattered throughout the region in fragments. Ichauway itself held only dapplings; most of the lands it acquired had already been scalped.<sup>3</sup>

It soon became apparent that no single technique could transcend all the varied sites. Most students of the longleaf identify four prime natural locales in which longleaf is found; Ichauway has three. More to the point, these have to interact with histories of land use, of which there are many more. One suite of practices is necessary to convert from old fields; another, from slash and loblolly plantations; yet another, from hardwood hammocks. Where longleaf and wiregrass still thrive, a quick recovery is possible and can then turn into a point of friendly infection for further spread.

The formulas for regeneration, that is, have to adapt to a much-checked past. They have to find ways to integrate lands variously plowed, grazed, felled, burned, rooted by hogs, and hunted. Today's overseers would have to build an ecological preserve out of a patchy inheritance as their predecessors had cobbled together a hunting plantation out of small fields and felled forests. They have to fashion working, connected landscapes out of a generous but unspecific bequest grounded in cultural perceptions and ambitions that must reconcile with natural capacities. Erecting laboratories and dormitories for visiting scientists is simple; the baffling task is to express those visions through the medium of longleaf, wiregrass, broomsedge, live oak, fire ants, slash pine, soils plowed and eroded, dabbles of wetlands and riparian strips.

This time another firebird serves as an index species. The red cockaded woodpecker is federally listed as an endangered species. The RCW nests only in cavities excavated out of old, living longleaf – a habitat that depends inextricably on fire. Again, in the familiar Ichauway scenario, one set of practices and groups is gradually replacing another. Sown seed plots for quail are giving way to artificial cavities for woodpeckers. Hunters are yielding to birdwatchers. In place of mule-drawn wagons, observers drive SUVs. In place of the daily bag of quail, success is measured in cavities occupied by red cockaded woodpecker. When the program began in 1999, Ichauway had one male RCW. By 2009 it had 23 active clusters, had approached the state for formal designation as a mitigation site, and was contemplating exporting birds in the future.

Today, both endeavors persist. The hunt for quail continues, on a smaller scale, with English pointers and refurbished mule-drawn wagons. About a third of the Ichauway remains committed to quail, and some 30 days a year, to their hunting. At the same time, the hunt for red cockaded woodpeckers flourishes. Woodpecker habitat is replacing quail habitat much as longleaf is substituting, bole by bole, for slash. Between those two firebirds spans the narrative arc of Ichauway's experience in applied ecology.

*Putting the Fire Out*

The dynamic grout in the Ichauway mosaic is fire. Everything that happens happens with or around fire: reconstructed landscapes must, in fact, be designed so that they can burn, for fire is the primary ecological catalyst and accelerant. The land is not simply a fireshed, but a fire habitat. Almost every purpose for the land requires that it burn, and the only way to get the right regimen for burning is for people to do it – to “put the fire out,” as the old-timers used to say.<sup>4</sup>

What matters most is the frequency and continuity of the burning. Not one founding burn, but many over time; not boutique burns, minutely calibrated to season and fuel, but the simple (if brutal) presence of repeated fire – this is what animates and integrates the landscape. Of course the pattern matters; the prescribed fire program recognizes 13 burn objectives and a like number of “habitat-fuel” types. Wiregrass will germinate only if burned in the growing season, and longleaf may be killed if its new meristematic growth (colloquially known as “candles”) are exposed to flame; but both thrive amid any and all other burns. They will accommodate almost any fire better than they can survive fire’s absence.

If this outcome seems counterintuitive, it may be because we take a too-narrow view of fire. We see it as a mechanical perturbation, as part of a plexus of causes and effects that jar, push, volatilize, or otherwise rearrange hydrocarbons in ways that force a biota to adapt to. Fire is an agent of change - of course. But it is also a means of synthesis. It is as much a product of its setting as a producer of it. It does at Ichauway what it does everywhere: it interacts with its surroundings in ways both catalytic and cathartic. As it propagates it assumes a fluid morphology by integrating terrain, fuels, winds, humidity, all the elements of its various “triangles,” into a zone of combustion that shape-shifts instantaneously as it moves through a landscape. Whatever is in that landscape enters into the flickering history of its passage. At Ichauway it is history itself that gets integrated.

The means by which this happens should surprise no one: the torch has been handed from generation to generation. Fire practices have replaced one another exactly as have flora and fauna. It began when Robert Woodruff hired Herbert Stoddard, the dean of quail and longleaf management, to advise him how to establish Ichauway as a hunting plantation, and Stoddard passed along the lore he had absorbed as a child in central Florida, and then rekindled during his experience as lead researcher on the Cooperative Quail Study Investigation. Stoddard gave both rigor and credibility to traditional burning techniques. That the region has become the epicenter for landscape burning – it even hosts the National Prescribed Fire Training Center – is due in no small way to Stoddard and his successors at the Tall Timbers Research Center, which served as a model for the Jones Center.<sup>5</sup>

A Stoddard protégé, Leon Neel, then advised Ichauway on both fire and forestry, and resisted the kind of abrupt conversions that would turn old farms into short-rotation slash plantations. As the JERC was getting traction, it hired a covey of staff from Tall Timbers to help establish its fire program. They carried with them that inherited lore even as they modernized operations. ATVs and drip torches replaced mules and matches; GIS mapping supplemented experience acquired with specific sites over long decades; computer modeling assisted transferred knowledge. But it is striking that the pith of the program came not by the downloading published scientific data and conclusions from Science to Ichauway but by relocating experienced personnel. Its fire staff had grown up in the region, they had learned from master burners, they embodied the art as well as the craft of burning. Of course they appealed to science for advice and to technology for force-enhancement; but the success of the program depended on grounded experience. That’s what is too often missing from national projects that seek to abstract critical knowledge – “lessons learned” – and promulgate it virtually. It needs to be learned on the ground.<sup>6</sup>

To be sure, the staff is deeply committed to translating that personal lore into the codes of quantitative science. Over time, one can expect that the inherited knowledge will be replaced, byte by byte, by more abstract formulas and will move from personal memory to server farms. But for now they co-exist, with one growing out of the other – Ichauway could not function otherwise. When modern foresters spoke of “putting the fire out,” they meant extinguishing the

flame. When Ichauway foresters said it, they conveyed an older, vernacular meaning, of keeping fire alive on the land.

Most places have followed a history like that of the region's longleaf: they had local knowledge clearcut. This had the unintended consequences of destroying not only a visible overstory of old-growth wisdom but a tangled understory of diverse lore and the institutional capacity, the social soil as it were, to reacquire understanding. The old was stripped away, to be replaced as the new got planted in the literature of formal learning. In reality it committed the land to what proved a working future a long time in coming, and one rife with stumbles, glitches, and outright errors. Still, it seemed a seductive path through the woods – modern, quick in its dismissal of inherited baggage, its returns apparently rapid.

This was, however, over and again in one mode after another, the path Ichauway chose not to follow. Its fires would connect as well as change. They would burn across history as well as pine savannas; they would link past and future as well as wiregrass and longleaf. At Ichauway fire's past isn't past.

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<sup>1</sup> On the development of the plot, see R.J. Mitchell, et al, "Silviculture that sustains: the nexus between silviculture, frequent prescribed fire, and conservation of biodiversity in longleaf pine forests of the southeastern United States," *Canadian Journal of Forest Research* 36: 2724-2736 (2006); L. Katherine Kirkman, et al, "The perpetual forest: using undesirable species to bridge restoration," *Journal of Applied Ecology* 44: 604-614 (2007); and R.J. Mitchell, L.K. Kirkman, and S.D. Pecot, "Restoration of Multi-Aged Longleaf Pine Woodlands through Time," unpublished study, Jones Ecological Research Center (n.d.).

<sup>2</sup> An interesting sketch of the growth of quail plantations, and the Cooperative Quail Study Investigation, is available in E.V. Komarek, Sr., "A Quest for Ecological Understanding. The Secretary's Review. March 15, 1958-June 30, 1975." *Misc. Publication No. 5* (Tall Timbers Research Station, 1977), pp. 13-22. For a thumbnail of the Grouse Commission, see Stephen J. Pyne, *Vestal Fire* (University of Washington Press, 1997), or for the source, Great Britain Board of Agriculture and Fisheries, Committee on Inquiry on Grouse Disease, *The Grouse in Health and in Disease* (London, 1911).

<sup>3</sup> For a synopsis of longleaf as a conservation priority, see Katherine Kirkman, "Conserving biodiversity in the longleaf pine savannas of the USA," *Plant Talk* 39 (January 2005): 30—32. For a more thorough but popular history, see Lawrence S. Earley, *Looking for Longleaf. The Fall and Rise of an American Forest* (University of North Carolina Press, 2004).

<sup>4</sup> J Stober, "The Prescribed Fire Management Program at Ichauway 1994-2008" (J.W. Jones Ecological Research Center, March 2009).

<sup>5</sup> A good summary of Stoddard's role is Alfred G. Way, "Burned to be Wild: Herbert Stoddard and the Roots of Ecological Conservation in the Southern Longleaf Pine Forest," *Environmental History* 11(3):500-526 (July 2006). For the source, see Herbert L. Stoddard, Sr., *Memoirs of a Naturalist* (University of Oklahoma Press, 1969).

<sup>6</sup> See R.K. McIntyre et al, "Multiple Value Management: The Stoddard-Neel Approach to Ecological Forestry in Longleaf Pine Grasslands" (Joseph W. Jones Ecological Research Center, June 2008).