

# Reviving Raft Swamp Farms

An energetic, dedicated couple has transformed a once-dormant cotton and tobacco operation into a wildlife-rich sustainable teaching farm.

Written by Sidney Cruze Photographed by Melissa McGaw

The skies over Raft Swamp Farms are bustling with birds. Purple martins swoop through the air catching flies and mosquitoes; Mississippi kites glide above the trees and chimney swifts hurtle past like flying cigars. Last spring, a flock of 200 bobolinks spent a week crisscrossing the fields before heading north to breed.

Altogether more than 70 species have been seen on the Hoke County farm, and their presence is no coincidence. Owners Jackie and Louie Hough have made efforts to attract the birds as part of their plan to create a thriving small-scale sustainable farm in the Sandhills.

Farmers in North Carolina manage 8.8 million acres of land, and many engage in best management practices that preserve habitat for bobwhite quail, wild turkeys, migratory birds and more. The Houghs understand that wildlife conservation can benefit people as well. By forging a mutually beneficial relationship between animals and agriculture, they transformed their once-barren fields into a vibrant, productive landscape. Raft Swamp Farms is now an organic farm incubator associated with the Carolina Farm Stewardship Association. Fittingly, it is also a site on the Piedmont Birding Trail. Open for tours by appointment, it offers visitors a glimpse of how organic farming enhances habitat for birds and other wildlife.

#### Environmental stewardship

Raft Swamp Farms stretches across 150 acres just south of Raeford. Bordered to the west by the eponymous Raft Swamp Creek, its fields were once farmed conventionally to produce tobacco and high-yield cotton.

The Houghs bought the land in June 2005. A former sergeant major in the U.S. Army's Special Forces, Louie spent his first 19 years on a 40-acre farm in Indiana. Jackie grew up in a small Wisconsin farm town, fishing the area lakes and rivers with her father. She served in the Army Nurse Corps before taking her job as a neonatal intensive care nurse at Cape Fear Valley Medical Center. Both were looking to return to their rural roots..



Conservation practices at Raft Swamp Farms such as no-till farming (Louie Hough using his grain drill, top right) have paid off with the presence of a diverse suite of wildlife. Clockwise from middle right: Austrian field peas provide a cover crop and food for wildlife; farm-grown gourds become homes for purple martins; the farm is home to beneficial insects small and smaller; bobwhite quail live in the hedgerows, where chicks feast on insects; and the farm relies on valuable pollinators such as honey bees.

The Houghs' childhood experiences instilled in them an appreciation for the natural world that spurred their interest in sustainable farming, in which crops are grown in harmony with nature. They began watching North Carolina wildlife after moving from Germany to Fayetteville—their last duty station—in 1989. A few years later Jackie began working part-time at a native plant nursery to learn about plants indigenous to the Southeast. Soon they were looking for land of their own, a place they could put their new knowledge and environmental ethics to work.

When Jackie and Louie bought Raft Swamp Farms, it was an expanse of dirt and stubble. Years of pesticide use and clean farming, which eliminates fallow fields and grassy areas, had killed the native weeds and grasses, destroying the habitat for small mammals, songbirds and Northern bobwhite quail. “We knew we could manage our farm to produce crops efficiently and appeal to wildlife,” Jackie says. “We’d seen it work growing up.”

Today the farm pulses with life. Bees buzz in and out of blueberries, anoles skitter up tree trunks and quail raise their chicks in the fields. The farm produces honey and an array of organic herbs and vegetables that they sell at area farmers' markets.

#### Common-sense farming

On the farm Jackie walks alongside the fields, calling out scientific names for the native plants and trees we pass. The tulip poplars provide early bee forage; the persimmons offer blossoms to the bees and a delicious late-season crop of fruit; native plums and wild muscadines feed songbirds and small mammals. Everything has a purpose.

Some of the trees were here when the Houghs bought the land, but they've planted hundreds more trees and shrubs native to the Southeast—and begun the slow, arduous task of eradicating invasive exotic species that gained a foothold during decades of neglect. After careful planning and planting, the natives include pawpaw, pecan, Atlantic white cedar, red chokeberry, beautyberry, climbing asters, native hollies and oaks.

“The difference we've seen in the wildlife is striking,” Jackie says. “We've had a resurgence in birds, rabbits, quail; even the squirrels are back.” Like many farmers, the Houghs rely on pollinators to get the most from their fields. With that in mind, they have planted blueberries, blackberries, goldenrod, sourwood and muscadine grapes—all magnets for valuable native pollinators and honeybees.

As we walk, Jackie stops in front of a red mulberry tree surrounded by a thicket of green. “This tree was nearly lost in the overgrowth of vines. When we cut the vines back, we discovered the mulberry underneath. Louie was happy, because he loves the taste of mulberries.”

He's not alone. When the mulberry begins fruiting, the Houghs notice an increase in animal tracks nearby. Wild turkeys, skunks, foxes and raccoons eat the juicy berries, as do the vireos and warblers that migrate through the farm. Because the mulberry provides food for small mammals, game birds and songbirds—not to mention Louie—as well as forage for bees, it fits well with the Houghs' plan to create an environment that sustains wildlife and farming.

“By planting things that serve multiple functions, we have developed a coordinated system,” Jackie says. “Our crabapple trees are a good example. They provide shade, serve as windbreaks and help reduce soil erosion. Plus their fruit feeds the small mammals we have on the farm.”

The birds at Raft Swamp Farms are an integral part of this system. Because the Houghs use organic methods, they strive to improve the soil by planting cover crops such as Austrian field peas and crimson clover, adding valuable nitrogen and organic matter to the soil while creating habitat for insects. “Those bobolinks stayed as long as they did because our field peas harbored insect larvae they could feed on,” Jackie says.

For the bobolinks, Raft Swamp Farms is a place to refuel as they travel to their summer home in the Northeast. Since the Houghs don't use pesticides on their fields, they can rely on the birds to provide chemical-free insect control.

The bobolinks' visit was serendipitous, but the Houghs have worked hard to attract other species. Vines of birdhouse gourds yield large fruits that are dried to make homes for purple martins. Louie built nesting boxes for purple martins and bluebirds, as well as perching sites for loggerhead shrikes and other raptors. They also applied for and received a grant from Wildlife Rehabilitators of North Carolina Inc. to build and maintain a chimney swift tower. Now chimney swifts scour the sky for insects from May to September.

#### Valuable cover crops

Five years after purchasing the land, the Houghs continue to add elements to their sustainable whole-farm system. Their plans include the addition of a pond, and work is currently under way to convert four pastures to native warm-season grasses and forbs to support rotational grazing of poultry and goats. Seeds for native grasses and wildflowers are now available at the farm.

Today the farm yields asparagus, strawberries, early peas, green beans, blueberries, tomatoes, peppers, watermelons, cantaloupes, sweet potatoes and more. The Houghs are committed to sharing what they know and regularly seek opportunities to expand their knowledge of whole-farm systems. They try new vegetable and fruit



Clockwise from top left: Crimson clover is a cover crop that attracts wildlife; black rat snakes feed on the farm's small mammals; wild plum trees make up part of the hedgerow system; Jackie and Louie in front of their popular mulberry tree; Jackie in a patch of lavender; one of the flock of bobolinks that migrates through the farm, providing insect control for the crops; and a purple martin nesting in a gourd.

varieties each year, have a growing sustainable farming library and are frequent attendees at the state's many sustainable agriculture workshops and conferences.

Anyone interested in organic farming can lease a small tract of land on the farm. Once growers commit, they have access to the Houghs' hands-on training, facilities and equipment. Farmers must buy their own seeds, and plants can be started in one of two greenhouses. The Houghs have a windmill-powered pump for irrigation, plus a disc, a tractor, a cultivator and a grain drill.

The 5-foot-wide grain drill—a Sukup food plot planter—is key to the Houghs' ability to create a sustainable operation because it allows them to practice no-till cropping, a conservation tillage method that benefits both farmers and wildlife. When Louie plants a new crop, he pulls the grain drill behind the tractor, where it opens a narrow furrow in the dirt, places a seed in the furrow, and then covers it back up, creating only a thin line of disturbed earth. Instead of getting uprooted by a plow, the cover crops stay on the fields, where they reduce soil erosion, help retain moisture, make nitrogen accessible to plants and create shelter for rabbits and quail.

"The cover crops also attract food for wildlife," says David Williams from the N.C. Department of Environment and Natural Resources' Division of Soil and Water Conservation. "Insects live in the cover crops, birds take advantage of the insects and larger animals rely on the birds for food. These cover crops create the ground-floor support for an entire food web."

No-till farming is especially beneficial to bobwhite quail. During the first two weeks of life, bobwhite chicks need large amounts of protein, which they get from eating insects. An N.C. State University study shows the chicks get the protein they need in only four hours on a no-till field, but can't eat enough in a day on conventionally tilled fields.

#### Living fences

Raft Swamp Farms is organized into 3-acre fields divided by hedgerows. At 6 to 8 feet wide, these hedgerows create travel corridors and habitat for rabbits, opossums, raccoons and other small mammals. They also provide cover for bobwhite quail.

"Lots of variables affect bobwhite quail, but providing them with habitat is the key," says Wes Coltrane, regional director for Quail Unlimited, a conservation organization dedicated to restoring America's wild quail populations. "On a farm, if you can have smaller fields with buffers between them, that's ideal."

The Houghs designed their hedgerows to feed a variety of wildlife, planting them with a mix of natives such as crabapple, wild plum and flowering dogwood. One small thorny tree, the hawthorn,

makes an ideal plant for these hedgerows. A member of the rose family with 38 species native to North Carolina, the fast-growing hawthorn produces fruit that lasts through the winter. These orange-red pomes feed the migratory warblers in both the fall and the spring. The hawthorn limbs also create living fences where robins, sparrows and wrens can rely on the plant's formidable 3-inch thorns to protect nests from raccoons and other predators. Plus, the richly scented white flowers attract bees in the spring. "They provide flowers, fruit and structure, and their limb pattern makes them as beautiful as old apple trees," Jackie says.

On the farm's mile-long western border, Raft Swamp Creek also creates a wildlife corridor for larger animals. The creek starts northwest of Raeford and meanders through miles of black-water swamp before it meets the Lumber River in Robeson County. Coyotes, black bears, beavers and white-tailed deer travel this natural highway through Hoke County. The Houghs have committed to keeping a 300-foot wooded buffer along the creek to protect its water quality. Flycatchers, waterfowl, woodpeckers and warblers thrive in this wet forest, where bald cypress, water tupelo and swamp black gum trees dominate the canopy.

#### Natural rhythms

Louie works full-time on the farm. Jackie spends as much time there as she can away from her nursing work in town and keeps careful records of the rhythms of the natural year.

"The martins are here by St. Patrick's Day, then gone near the first of September. By mid-April we hear the warblers," Jackie says. "The wildlife patterns we see are related to how things grow. We notice more travel from the animals when plants begin blooming and producing food."

The Houghs welcome visitors, volunteers and new farmers to Raft Swamp Farms. Almost 4 miles of trails meander along the perimeter, making it an ideal spot for hiking or bird watching. Steve Patterson, former president of the Carolina Bird Club, calls Raft Swamp Farms a special place, one where you can witness the ways plants benefit both each other and the animals living on the land.

"The Houghs have done an excellent job of managing their land for birds and other wildlife, and I was very impressed with their innovative, common-sense approach to farming," Patterson says. "In 2007 they counted 68 bird species. I wouldn't be surprised to see that number reach 200." ♦

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