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**Plans are better laid than not**

**By Curtis Seltzer**

**BLUE GRASS, Va.**—I would not be surprised to learn that *Homo sapiens* plans more and succeeds less than most other species.

One presumed benefit of walking upright with a disproportionately big brain is having an ability to avoid making plans that always fail. Of course, we all know individuals who succeed in rebutting this presumption.

Like other farmers, I've been penciling out plans for several spring projects since last fall. My overall planning objectives are to improve the farm, increase its value, earn some money and make the work easier.

Surely, I've argued to myself, these humble goals are not beyond my ken.

Most farms raise one thing in one place and other things in other places. This field is for corn; that field is for fruit trees; that other field is for grazing livestock.

A different approach carries names like permaculture, restorative agriculture and agroforestry. The basic idea -- and in this summary sentence very much oversimplified -- is to organize a farm that mimics nature by growing multiple crops in the same place and often at the same time. Permaculture objectives are to make better use of natural resources, protect the environment and earn more money.

Take 100 acres of ordinary cattle pasture. One permaculture approach is to fence this into, say, 25 paddocks each with its own water trough and shade. The farmer then rotates cattle, possibly sheep, pigs and poultry through each paddock in that order. Each gang feeds in a paddock for only a couple of days. The paddock is rested after the poultry, allowing vegetation to grow for the next rotation.

Each species eats a different part of the available forage. All vegetation, both the most and least palatable, are consumed. The three-

or-four-gang rotation ends before each paddock is overgrazed, which is a common sight on cattle-only pastures in August and September. The paddock is left fertilized, groomed of many bugs and pretty much weed free.

In this arrangement, the farmer is raising four crops -- beef cattle, sheep, pigs and poultry -- on the same 100 acres and improving the soil to boot. The total net return is greater than using the 100 acres for cattle, sheep, pigs or poultry exclusively.

A three-creature rotation -- cattle, pigs and poultry -- is a bit simpler to manage. Pigs eat cattle manure—there's no other way to put it. They seem to thrive on second-hand forage and manure, which contains all the amino acids they need. Poultry eat the bugs and scatter the remaining manure.

To make this system work, however, the farmer has to invest a lot of capital in fencing, watering and shade. This scheme also takes much more day-to-day management in moving livestock from one paddock to the next and keeping the gangs separated.

I like pigs, but it would take more money and work than I'm willing to spend to run them after cattle. I'm not a fan of either sheep or fowl.

The next permaculture step up is to incorporate compatible crops into the 100 grazing acres.

Well, obviously, you can't grow corn at the same time and in the same fields where you're pasturing cattle, sheep and pigs every spring-to-fall month. But, you can plant trees—a practice called, “silvopasture.”

(In certain circumstances, row-crop farms might plant annual winter-growing cereals like oats or winter wheat into dormant perennial pastures so that the ground produces twice and is never bare. Livestock would be grazed for short periods at appropriate times in this “pasture cropping” system.)

One writer -- Mark Shepard, Restorative Agriculture -- plants chestnuts and hazelnuts in his pasture, which feed both people and pigs. (I'm not sure these nuts work with cattle and sheep.)

Instead of these trees, I decided to plant black walnut.

The walnuts most of us eat are Persian (Iranian) by way of Greece into England and then out to California. They have a mild flavor and a thin, easily-cracked shell. They're usually called English walnuts or California walnuts.

The native American black walnut I'm planting has a strong flavor, thick shell and smaller meat. My goal is future timber rather than nut production. My theory is that fallen nuts will fertilize the soil and reseed future generations with the help of forgetful squirrels.

Planting some trees out in a field seems simple enough. Not so. Here's where big-brain planning comes in.

A black walnut grown for sawtimber (lumber) 70 years down the road should ideally have a straight, limbless trunk and a small crown. To get that, every other tree I'm planting will be a black locust. The locusts will force the walnuts to grow straight with a narrow crown. I'll space each tree 10 feet from the others, alternating walnut and locust.

The locust will be cut 20 to 30 years out for fence posts, releasing those soil and water resources for the walnuts. Locust increases organic matter and doubles the amount of nitrogen -- a fertilizer -- in the soil. Non-native weed species that locust attracts will be grazed off. Bees love locust, from which they make honey with a noticeable buzz.

Like many plants, locust is mildly toxic. As long as more palatable forage is available, horses and cattle are not likely to go for locust leaves.

I'm planning two, one-acre plots of about 250 trees each. Both are open pasture and support feral walnut and locust. I want to see if there's any difference in growth and survival rates between the sites.

I can access both plots with my tractor, which is critical since I will be scarifying the pasture at each site and augering out planting holes with a post-hole digger.

Water is the critical variable for establishing seedlings in pasture. To help retain water, I bought a subsoiler—a big chisel that attaches to

the back of the tractor. I had local genius welder, Steve Good, “heavy it up” with reinforcing supports and welds.

The subsoiler roughs up the ground, breaks up the thatch and loosens the compacted dirt. (I’m thinking of offering subsoiling as an alternative to talk therapy.)

I will “subsoil” the pasture in the planting sites by pulling the chisel through the dirt to a depth of eight-to-12 inches. These line trenches will capture rain and direct it into the ground around the seedlings.

Deer eat tree seedlings. The black locust appear to be the likelier victims than the walnuts whose leaves are unpalatable. I’ve seen no deer browse on an earlier walnut planting.

The conventional deer-deterrent practice is to slip a rigid plastic tube over the seedling and tie it to a support stake. The tree grows within the tube for several years, after which it is removed.

These narrow tubes do protect against deer, but some users report that they trap moisture, leading to fungus and other problems. Tall tubes can create tree flop, a weak stem produced by artificial support in the first few years.

It also turns out that bears love to chew on hard plastic tubes. I’ve had bears bite my plastic lawn furniture and a bottle of insect repellent that I keep on a deck in the woods. They ignored the butt of a fairly expensive cigar that I’d left in an ashtray, which says more about my bad habits than theirs.

However, I am planning to use a flexible, spiral plastic sleeve to protect against deer, rabbits and rodents. Bears go for the hard stuff, not the wimpy cousin.

I need to keep cattle out of the planting for at least three years. So I bought solar-powered, electric-fence chargers. Two hot lines around the groves will do that job without additional effort from me.

When the trees are large enough, I’ll rotate cattle through in their normal movement from paddock to paddock. Pulsing cattle for a few days prevents sustained rubbing against trees and compacting the pasture beneath their shade.

The trees will need some maintenance during the first few years. I'll clip low limbs and remove the sleeves so that they don't girdle the saplings.

My general approach is to have the fittest survive. Too much babying produces too many weak trees—I know that sounds harsh.

Trees need to make it on their own once I give them a decent toehold. (An opposite view is set out in the elaborate planting regimen for chestnuts at: [www.acf.org/pdfs/resources/planting\\_manual.pdf](http://www.acf.org/pdfs/resources/planting_manual.pdf).)

Seedlings are cheap. It's easy to replant a 25 percent mortality.

When I was writing this column, I was startled by how much researching, planning, designing, figuring, calculating, strategizing, coordinating and spending I was doing.

Less than half of new businesses are around after their first five years. Faulty research and bad planning are leading causes.

My little tree business could flop. It's possible that I could end up with a dead-tree forest.

Remote disasters might materialize. There's a canker that kills walnut trees. A sinkhole could swallow both plantings. A meteor could incinerate my trees, and me, too. Jihadists could swim the Atlantic with scimitars clenched in their teeth and behead my trees.

Planning can't prevent those events.

I certainly could invest more money in starting them off with fertilizers, grass/weed suppression, staking, regular watering and deer repellent. Those measures are supposed to increase the survival rate, but they are expensive and labor intensive.

The way I figure it, it's a lot cheaper to plant 125 replacement seedlings than to spend another \$2,500 to give extra help to the 500 planted initially. A walnut seedling costs \$.70; a locust only \$.30.

I will have no more than \$6 invested per tree for the first 500. Of my estimated total cost of about \$3,000, about \$2,400 will be spent on equipment that I will use for other purposes and reusable supplies. Expanding the plantings in subsequent years or replacing those that didn't make it will cost about \$1 for locust and \$1.50 for walnut.

So all of my venture-capital friends will ask: “What’s the profit in this deal?”

Assume 75% of the 250 walnuts survive to maturity, that’s 187 trees. In 70 years, assuming 3/8-inch diameter growth per year, these trees will have about a 24” diameter. That would be roughly 290 board feet per tree in one 16-foot-long sawlog and one eight footer.

Walnut sawtimber is currently bringing local landowners about \$.80 per board foot on the stump, that is, standing in the field. Veneer-quality logs are even more valuable.

In 70 years, these 187 trees should be worth *at least* \$2 per board foot and likely two or three times that. A conservative sale projection would be about \$108,000 on the stump.

And I’m not even counting the free walnut trees sprouted from the plantings of my little friends, the squirrels.

The fast-growing locusts should produce one corner post and one stake, plus firewood, in 30 years. Those two fence items now cost about \$20. In 30 years, each locust tree would be worth *at least* \$40 as a post and stake.

Nothing as elusive as profit is certain. Robert Burns wrote the best laid plans of mice and men often go awry. I don’t know about mice, but I’ve had plans end up kablooey.

At worst, I could find myself with \$2,500 in newish equipment and supplies, and \$500 in loss. The equipment can be depreciated, the supplies expensed and maybe the loss taken against income for the IRS.

Pragmatists will point out a pragmatic, actuarial point: I ain’t gonna be around to pocket the profit.

So what?

My daughter can always sell the right to cut the trees even before they mature. If we were to sell the farm next year, a buyer should pay a little extra for my biological improvement with a big commercial upside.

Planting trees is a good thing to do. They produce oxygen and sequester carbon. They control erosion and provide necessary shade for cattle. They provide income and value. Even if they don’t grade out as

conventional clear lumber, individual woodworkers value walnut lumber with “interesting” grain patterns that sawmills consider defects.

And this plan also gives me a genuine farm column as well as a defensible excuse to buy a new post-hole digger and a subsoiler.

What more could a boy want?