Forest Management

Evolution and Refinement

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In nature, time teaches as it reveals. It's only over time that we learn what nature intends and what a living landscape wants to become. About 80 percent of Harlan Estate remains wild, untouched by human hands: forest and woodlands, hills and meadows, creeks and lakes are in a continual state of evolution. The rest is vineyards, parklands, and gardens, all carefully tended.

Each part of Harlan Estate's 240 acres is inherently distinct from the next. To really understand what the differences are, to get to know the estate in fine detail and as a whole, we have to study it in a variety of ways at a variety of scales. Once we discover what's actually here and which way it's tending, we can begin to resolve the best way to guide it into the future.

The first step is to map the overall area in measurable increments: in, say, 200-square-foot units. Within each of those sections, we measure trees and note what's dying, what's coming up, and what's new at that time. With that information, we'll start to develop a general understanding of the forest, the woodlands, and the riparian areas as they are now; we'll also gain a sense of what they want to become. Ultimately, of course, we have to discern to what level we will allow these biological tendencies to continue to evolve. We might prefer to hold an area to its present state, or we might choose to take it back to some earlier ecological time. Since most of Harlan Estate will be managed over a series of years, we're planning both for the short term and for decades—even a few centuries—into the future. No doubt our interventions will be cyclical, because spring three years hence may require the same things as spring this year.

Clarity of purpose—health, wildlife retention, aesthetic enhancement, fire prevention—helps us determine what our choices should be, and ensures that we do what's best for each zone. The long-term goal for Harlan Estate is a landscape that's wild and also clearly defined—a place that is healthy, beautiful, and productive.

Mother Nature has always maintained the health of her forests through a cycle of fires, disease, and storms. Through well-planned forest management, we hope to help her achieve the same goals without catastrophic events. Of course, our immediate goal is and always will be fire protection. California is fertile. It grows a lot of what foresters like to call fuel. Actually, there's about four times as much fuel in Napa Valley

Forested hillside rising up from the lake

now as there has been historically. Fires, either Indian-set or lightning-caused, would generally have thinned things out occasionally. That's certainly natural in the life of the forest, but has become a significant problem because there are so many more of us living here now and because both frequency of ignition and flame spread have increased.

This land is very productive. The rain and the seeds and the sun keep producing biomass, some of which we want. But the forest can't support all that biomass, so some is dying all the time. The bay trees tend to rob water from the oaks, which suffer for it: they die and fall down, or die and remain standing. Tree branches die, too, and twigs drop. It's important to comb through the property's wild areas and the critical stretches along the perimeter and ensure that there are no ground fuels. That helps avoid a crown fire, which is a fire that starts down in the understory and then creeps up into the brush and lower branches. If that fire should reach the treetops, it spreads very quickly—and it's very difficult to contain.

Creating defensible space to surround and cushion the structures and the property lines from a spreading fire is imperative. Removing big downed wood such as logs and branches, and then pulling out any trees that are standing dead, are the first things we do to reduce the fire hazard. After that, we'll pull out the brush and then the bay trees. Once we've cleared things sufficiently, we can assess where to thin, what doesn't belong, and what needs pruning. That process, regularly repeated, helps guide the property into a maintainable state (although a dynamic forest won't remain at one level forever). In decades to come, obviously, trees will die and others will replace them. For the foreseeable future, we'll address those issues as they occur. There will be fires here, but we want them to be of a flame length that can be reasonably managed.

It's critical to be prepared for that one-tenth of 1 percent of the time, or less, when the property may be really vulnerable. Heavy winds, for instance, can wreak major havoc, particularly in combination with fire or torrential downpours. Trees start to grow in the spring. They push out leaves, which add a lot of weight. Wet conditions and the wind can knock that top-heavy tree over. A standing tree hasn't got much of a margin of safety. It's going to grow, and as it adds weight, it becomes more likely to topple, since the root system isn't fully formed until later—a flaw in timing and design that can cause tree failure, especially when too many trees are fighting for limited space.

Napa Valley predictably gets at least eight days of north winds each fall, which is when the really big fires happen. That historically has been the case. It will probably continue to be so, although climate change may create some surprises. (There are some indications that species may change: those on the edge now might become more mainstream, or they may disappear completely, but only time will tell.) Fires inevitably occur in the fall because the trees are on an ecological verge—waiting for water, so dry they're in suspended animation.

Vegetation thrives increasingly in this part of the world. Two hundred years ago a stand on the property would probably have had sixty to ninety trees per acre. Most areas here now have more than 300 trees per acre. Everything wants to live here, in part because the climate is mild. Trees cast seed all the time. In the good years, there's enough water for the trees to start and then limp along. But thinning and pruning removes the sick trees, and makes the healthy ones that much happier.

The forest and woodlands of Harlan Estate are of diverse types, with an unusual mix of species common and uncommon. On this side of the Mayacamas Mountains, the standard Napa forest proceeds from brush species to oak and madrone. Fir and bay are latecomers. Because of the lack of fire, the bay forests on this property tend to overgrow the hardwood woodlands. At the higher elevations, most of the existing growth is evolving into conifer forest, which is primarily Douglas fir. Clearly thirty or forty years ago, the Douglas firs threw a lot of seed, many of them seemingly successful, all pushing up in the understory with the oaks and madrones. Hundreds, perhaps thousands, of these trees will weaken and die because they haven't enough light or water. Underneath all the Douglas firs are old brush fields, oak trees, and madrones—in other words, lots of fuel. That's the kind of fuel problem we constantly guard against. If we don't get rid of it, sooner or later the forest will go up in smoke.

In those areas of Harlan Estate with unique species, the forest makes itself rather clear about what it wants to do, which in turn makes our choices more obvious. Blue oak, for instance,

doesn't grow much on the west side of the valley but thrives over by the Harlan Estate winery, as does giant manzanita. Scrub oak grows on the estate's west promontory, but nowhere else, creating a wonderful vista. A glade of buckeyes encircles one of the site's rock outcroppings, where, even given this site's very thin topsoil, the always invasive bay is pushing to take over. Some spectacularly interesting trees, twisted or hit by lightning, dot the entire property. Removing the growth that surrounds these trees helps us articulate the landscape in an artful way—like painting the land with a fine brush.

In the estate's riparian areas, much of the true native vegetation is struggling. This gives us a wonderful opportunity to reintroduce selectively some lost species, particularly such native broad-leaved deciduous bloomers as dogwood, honeysuckle, and hazelnut, as well as numerous small plants in the understory. It's one of Harlan Estate's rare distinctions and opportunities.

The general mix of oaks and conifers here is very productive for wildlife, so bears and deer do indeed congregate along the edges of the forest. The edges are the areas where nature is always at her most interesting and most diverse, and where birds, mammals, arthropods, and so on tend to concentrate. Wildlife moves around. It's elusive. It hides. We know that the primary habitat here is along a ridge by the perimeter of the property, an area we will leave untouched because the wildlife lives in its big patches of downed logs and downed trees. The bears, mountain lions, and bobcats congregate up and down that corridor. The endangered pileated woodpecker nests somewhere in there, too. I have even encountered a northern spotted owl. As we discover precisely where these birds like to gather, we'll establish a sanctuary of sorts, since they tend to return every year.

It's tantalizing to imagine what happened on this very land many years ago. There would have been a lot of activity because the conditions are so favorable for hunting and acorn gathering. Certainly the Wappo and the Napa, and probably various other tribes, traveled this ground: artifacts like grinding stones still turn up in the creeks.

The more we continue to work on the land and refine our understanding of its distinctive differences, the more we'll instinctively reassess its boundaries. As we adjust our focus in ever-smaller increments, we'll come up with ever-finer refinements and adjustments to what lives and grows here. The more clearly we see the differences between vegetation types and accentuate them, the more naturally we will encourage diversity: definition creates edges, edges support wildlife, each species is itself a habitat. The greater our knowledge of this land and its continuum, where it has been and where it is now, the better we can gauge where it's going and the greater the opportunity to plan and nurture it responsibly into its future. Discovery, change, land, and life are ongoing, we hope, for many generations—even centuries—to come.