

To Ken Arney, Reviewing Official
Southern Region Objections
Ozark-St. Francis National Forests
Appendix F Plan Amendment

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I am writing to object further to Plan Amendment F to the current of 6 plan (long overdue for revision) Public oversight is required by NEPA to the extent of protecting species of concern AND critical habitats under The endangered species Act, the Migratory Bird Treaty Act, and especially the Multiple use-sustained Yield Act. Allowing constant changes in methodology, timing, desirable species, scale of projects, condition of proximal or landscape-scale stands and abuse resulting in loss of biodiversity and topsoil, sedimentation impacting both surface and groundwater, landslides predicted in USDA SCS county soil maps and burnt bare ground that won't grow back in forest or pasture. Deforestation is not sustainable or desirable.

The urge to constantly manage (through contracts and overkill technology) neglects the other Multiple Uses. The heaviest recreation use in the Forest last year was the Hawksbill overlook, in a multiwatershed plan that started just after Trump's inauguration and then took comments thirty days before the next election. During the long scoping, we met with district staff on the Hawksbill site early on, and asked specifically what sanitation was provided (none) for over 100 parked cars I've counted with more coming and going constantly from mid-morning until late afternoon. (district count 250 parked) Still no sanitation this last summer, but they did manage to expand parking, while neighbors complained about the toilet paper in their driveways.

Alum cove, a trail to a natural bridge and beyond below a bluffline and back built by the CCC as a day-use area is neglected by the district - 5 miles of once-paved roads from the Deer Work Center (16 still is but the Wayton road and especially the Forest road to the parking lot is full of potholes that are unavoidable) The pavilion was neglected, and while toilets were there, they were so filthy and stunk so bad that many people went to the woods. This neglect in the district for recreation is also shown by the recent plan to allow E-bikes on mountain bike trails in the Buffalo headwaters. That allows physically-less-able people to get to places where they need to be rescued with more technology demanding more disturbance and destruction. Budget for more search-and-rescue teams to wreck the Indiana bat habitat. (using what frequency?)

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I'll refer to two classic references at length on forest sustainability and dynamics. Henry David Thoreau wrote The Dispersion of Seeds and the Succession of Forest Trees shortly before his death. They were published in 1993 by Island Press (Washington D C) titled Faith in a Seed. The Succession of Forest Trees was a compilation of literature referring to the subject from the library at Harvard as the basis for a longer essay. The Dispersion of Seeds is a full book of observation and logic which explains succession and forest development over time. Observations are from Concord, Massachusetts, so species and habitats don't always match, Ozarks (red squirrels there, fox and gray here), but the basic processes are the same, and go from pioneer to old growth, with reciprocal replacement by canopy dominants.

A point that Thoreau made is that cattle are the enemy of pines and would straddle pine poles, walk them down and rub their heads in the tops, singling out pines in a field of seedlings and sprouts. He also wrote of the tar and pitch from tearing up pine cones still green but didn't make the connection. In the absence of rub bars, fresh pine tars and resins were the most effective fly repellent available to the cows, from bruising bark or needles, and rubbing where tails won't reach. Hang rub bars away from water.

This also means cattle (and other livestock) should be kept on permanent fenced pastures, rotated frequently between pastures to stay within carrying capacity and kept out of woods and deep water (approach to water should be limited by fencing to dry solid ground to avoid or minimize mud holes.)

The best common fence post species in the Ozarks is black locust (faster-growing and straighter than mulberry or Usage orange, chinquapin endangered from a then-desireable introduction) The Forest Service should be planting beests for pioneer nurse trees to be selectively thinned for posts as oaks, hickories, and other forest species are planted below them, while they fix nitrogen as legumes, make good honey, and make excellent firewood (splits easy). For sustainable grazing, stay within the carrying capacity of the pastures, inspect wherever they are constantly and move them before damage is done. Rotation also keeps horse and deer flies from building up populations.

The second classic reference is B.E. Fernow's History of Forestry University Press Toronto, Ontario 1907 from a series of 25 lectures to the Yale School of Forestry and written to be used as a forestry textbook worldwide. It is both an honest assessment of each forested country and the forestry practiced through its history, and what the results were.

Germany had the longest history of forestry in Europe, with Austria and Switzerland developing variations. As Fernow pointed out, history repeats itself. This generation didn't invent the wheel, unless it's now square. Somebody or several have had the same thoughts and made the same observations put to the same tests.

"So study the results, broaden our judgement and avoid the mistakes of others."

He goes on to say that "Forestry is an art born of necessity" and it takes a crisis to force responsible and sustainable long term forestry. (shortages)

Forest Conditions in Germany (pp 44-45) in the 1700s gets a comparison. "Virgin woods were culled of their wealth (high-graded) and then grew up to brush, as is usual in the United States."

Every forest ordinance began with complaints regarding the increasing forest devastation and predicted timber famine in view of the increasing population, increasing industry and commerce and hence increased wood consumption. Especially along the water routes, which furnished the means of transportation, the available supplies were ruthlessly exploited.

More serious enemies than the exploitation of the timber proved (to be) the pasturing of cattle, the removal of the litter, and above all the fires."

In the mid-1800s, the concept of mathematical and statistical tools of forest management with area, spacing and growth rate for a given species was getting an optimal rotation age to harvest. Similar to many computer and theoretical models of today, simplifying to get the desired results only makes those results unreliable for predicting future results. (cutting your throat with Lord Orcum's razor.) The model works only under consistent conditions, so for even-aged monoculture plantations on level ground with predictable weather throughout the rotation age, it might work.

Another point Fernow makes is that there are differences in landscapes that demand different methodology. In Germany, northern coastal plains (flatlands) had extensive conifer forests (pine, spruce, fir) so in Saxony or Prussia, clearings or reclaimed farmlands were restored by planting monocultures on a stand rotation. Hardwoods predominated in the south and west (Hesse, Baden, Württemberg, Bavaria) Oak, beech and chestnut were coppiced with standards enough to maintain closed canopy, function as seed trees for the coppice openings, and shade to retain soil moisture and biota. Firewood and leaf litter (for compost) were allotted when taken at all.

As Alexander von Humboldt long ago observed, altitude equates with latitude, so southern Germany and Switzerland and northern Austria have conifer stands at higher elevations up to timberline. In mountains, clearings create landslides and flooding. In Switzerland, extensive flood damage led to stopping alpine clearing for pasture, then existing pastures were overgrazed into wastelands.

Austria-Hungary had extensive forests of various types 82% conifers in Austria 75% deciduous in Hungary (oaks & beech). Similar to the Ozark-Boston Mountains, the Karstlands are a region from coastlands of the Adriatic with Dalmatia, Istria and Trieste, which from ancient times under Venetian rule, bring with them the inheritance of a mismanaged limestone country, creating the problems of the "Karst reforestation which has baffled the economist and forester until the present time" Still true now for here.

Fernow's comments on the United States of America (page 390) are accurate for the time. Pages 292-3 are the most relevant. Stability to allow sustainable yield can only be done in hardwoods by single-tree or very small group selection. Leave canopy trees that are oldest as standards for seed trees and shelter for soil as well as roots to hold a steep hill. Coppice younger canopy trees after incremental harvest at sawtimber size (minimize canopy openings) Leave understory, shrubs, ground cover, leaf litter, advanced regeneration and soil. Don't burn hardwoods or cedar groves or glades. Don't do even-aged management on hardwoods or cedar. Maintain biodiversity.

In a careful select system, when a tree is cut with, no advanced regeneration under it, wildlings within the stand from dominants or frequent associates within the canopy can be transplanted into the gap.

Oaks have the deepest taproots - tree height and root depth potential are about the same. Russians measured roots on rock quarry cuts in the Ural Mountains in the early 1960s and found oak roots could reach water at 100'. They also found muscledwood (*Carpinus*) as an understory in oak woods only if groundwater was within 20' of the surface. Otherwise the oaks would outsource them in a drought. Pawpaws and magnolias are indicators of shallow surface water here.

Fernow mentioned transport in northern Europe was largely by skidding on snow to minimize damage to soil and groundcover. Some German foresters now use horser and rubber-tired buggies to minimize damage from compaction. Low-tech methodology is sustainable with minimal impacts. Constant disturbance with expensive methodology degrades the forest and overextends the budget and assures failure at the next recession. (which makes rotation unsustainable)

The old plan allowed for prescriptions based on an ecological and successional type (oak-hickory, beech-maple-magnolia, cedar-locust) even though by site-prep for even-age, all roads lead to pine. These and others should be managed to protect biodiversity of late successional species. There is no current shortage of early successional brush on private land outside of the national forest or on inholdings. What is disappearing are forests worldwide and old-growth is especially rare.

The entire forest should have at least one year's inventory of biota by a team of scientists - both state and federal. Competency should extend beyond agency employees; otherwise don't expect results. Timing should be relevant to all seasons. Any unanticipated results should be checked by other experts in that field.

Accessing previously inoperable areas (roads, fire lines, ORV tracks) even for inventory or research causes fragmentation and disruption of forest dynamics. Until the situation demands it, impacts should be minimized. Removal of cover, rerouting water, compaction, noise, smells, and toxic chemicals all alter behavior of wildlife and resulting forest dynamics.

Animal (and even plant) awareness (cognition) is ignored in the process. "Animal cognition is a biological feature that has been molded through natural selection. To understand cognition, study its ecological consequences and evolution. Cognition is information processing and decision making (on resulting fitness)" from Cognitive Ecology Reuven Dukas ed. 1998 U of Chicago Press

For co-evolution to occur, at least one of the partners must be aware enough to select through choice or preference, which then impacts its own species.

Timing limits choices. Disruption of dynamics through ongoing disturbance creates a disclimax with chaotic responses to extremes reducing biodiversity at first, then settling into a more simplistic and unstable pattern. (not sustainable)

Even-aged systems make a stand on long rotation at high risk of failure to eventual total harvest. Selection stands stay stocked, yield is slow but steady and sustainable at minimal risk. Clearcuts eliminate other options and force even-aged management. (gambling against odds)

Pretending to consider other options (or public input) is a cynical way of approving pre-determined plans. A temporary economic situation will change before approved actions are implemented. Ecological stability is more important than short term profits.

Prescriptions should be based on the site condition and potential, not on current contractors demands. When has the timber industry been satisfied? What shape are private forests in? The forest service has the responsibility to do better. Learn from mistakes in the past instead of repeating them.

As I said before, all forms of management require extensive areas to operate. Restore the Buffalo Ranger district and operate it under careful selection, with watershed sized natural areas and wilderness. If you insist on even-aged cropping restore the Bayou district, which is already committed to cropping, and work through the rotation age, if possible with likely economic impediments.

Instead of Amendment F, change the overdue plan, as well as regional direction while there's still time.

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