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Unexpected Harmonies: Self-Organization in Liberal Modernity and Ecology

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I watched the “Forest Conference” in Portland, Oregon, on the 2nd of April 1993. Although I heard nothing new, I feel it’s a good beginning – but only a beginning. There are things, barely mentioned at the conference, that ultimately must be taken into account: things like soil health and water quality and quantity, the fact that “tree farms” are not forests and are not biologically sustainable in the long run, and things like the other forest-dependent industries that, along with the timber industry, compose the supporting structure of our communities.

Because a forest is cyclic – not linear as economist and industrialists would have us believe – to write about any one piece is to write about the many, which becomes incredibly complicated. I will therefore concentrate in a simplistic way on three things: soil, water, and forest-dependent industries.

## Soil

The soil lies between the living (plant and animal) and nonliving components of the landscape, an exchange membrane much like the placenta through which a mother nourishes her child. The soil, derived from rock, is built up by plants that live and die in it. It’s also enriched by animals that feed on plants, void their bodily wastes, and eventually die, decay, and return to the soil as organic matter. Soil supports the plants and animals that in turn create and maintain the myriad hidden processes that translate into soil productivity.

Many cultures have emphasized in their religion and philosophy that humans must be trustees of the soil. In his covenant with God, Abraham was instructed: “Defile not therefore the land which ye shall inhabit, wherein I dwell.” Confucius saw in the Earth’s thin mantle the sustenance of all life and the minerals treasured by human society. And a century later, Aristotle viewed the soil as the central mixing pot of air, fire, and water that formed all things.

In spite of such long-held beliefs, most people cannot grasp them because they’re intangible. We pay little attention to the soil – it’s as common as air and, like air, is taken for granted. When we think about it, however, we realize that human society is tied to the soil for reasons beyond measurable materialistic wealth. Yet, in the name of short-term profits, we rob the soil of the very organic material necessary to its sustainable fertility. We then use artificial chemicals that not only poison the soil and alter the way in which its many

hidden processes function but also pollute the water flowing through it into the streams, rivers, estuaries, and the seas of the world.

Soil is the stage on which the entire human drama is enacted. Destroy the soil and the forest ceases to be! Destroy the forest and the soil becomes further impoverished and erodes, which degrades water quality. If we continue to destroy the stage on which we depend for life, we will play a progressively ebbing role in a terminal tragedy of human society.

## **Water**

Water is a necessity of life. The world's supply of quality water is therefore precious beyond compare and is one of the most important commodities from the forest – far more important in the long run than board feet.

In the United States, the amount and quality of water available for human use are largely the result of climate and our strategies for managing the sustainable ecological health of watercatchments – particularly those in high-elevation forests – to protect the annual accumulation of snow from which comes the vast majority of all useable water. But protecting the quality and quantity of society's water supply is not a primary consideration during the harvesting of timber.

We seldom seem to realize that our useable water comes from forested watercatchments – including much of the prehistoric ground water we're now pumping. A curious thing therefore happens when water flows outside the forest boundary. We forget where it comes from; so we spend our time fighting over who has the “right” to the last drop while paying only lip service to the supply – the health of the forested watercatchments.

When snow melts, the water percolates deeply into the soil. It's purified when flowing through soil healthy with Nature's processes; it's left impure when flowing through soil with impoverished processes, and it's poisoned when flowing through soil polluted with artificial chemicals. As snowmelt flows through poisoned soil, in addition to indirectly polluting water systems, water bearing tons of toxic effluents flows directly into streams, rivers, estuaries, and the open ocean. Water is a captive of gravity, so all the impurities it retains and all the pollutants it collects on its downhill journey cycle through our city water supplies before ending up in the oceans where they accumulate in ever-increasing concentrations.

## **Forest-Dependent Industries**

We must have a biologically-sustainable forest before we can have a biologically-sustainable yield of any given forest commodity. We must have a biologically-sustainable yield in order to have an economically-sustainable forest-dependent industry; we must have an economically-sustainable industry to have a sustainable economy, and we must have a sustainable economy to have a sustainable community.

Sustainability means that we must first practice sound “bio economics” (the economics of maintaining a healthy forest, beginning with soil), before we can practice sound “industrial-economics” (the economics of maintaining a healthy forest-dependent industry), before we can practice sound “socio-economics” (the economics of maintaining a healthy community). And it all begins with a solid foundation – a biologically-sustainable forest.

Everything Nature has done in Her design of forests adds to the cyclic dynamics of diversity, complexity, and stability in space and time. We, on the other hand, are not now headed toward sustainable forestry because, unlike Nature, we decrease diversity, complexity, and stability by redesigning cyclic forests into linear, economically -designed plantations, which are not biologically sustainable in the long run.

We have a unique forest in the Pacific Northwest, yet we are teaching and practicing European plantation management, which confirms what the poet Matthew Arnold observed almost a century and a half ago: that we live “wandering between two worlds, one dead, the other powerless to be born.” Arnold could see that our human perception of Nature, reflected in our basic institutions, including science, is inconsistent with the world around us.

And still the new world is unable to be born because all new experience demands letting go of the old and the dead—demands risking the living unknown, something we’re loath to do. We therefore insist, to the greatest degree possible, on facing the unknown future of our rapidly changing world with concepts, methods, and institutions that remain tenaciously rooted in the old comfortable experience.

We need to learn to see the forest as it is, a dynamic living organism – an organism that requires healthy soils to grow trees and filter water; that produces pure water to drink and with which to irrigate crops; that produces habitat for the rearing of salmon and steelhead, deer and elk; and that produces the countless other products and amenities necessary to the social stability of our communities.

We need to learn about reinvesting biological capital into the processes of the forest so our mills will have a sustainable harvest of timber. We need to understand that Nature cannot be constrained to absolutes, that a sustainable yield

is a trend within some limits, that even the timber industry must be flexible and continually change as the forest changes. And our schools of forestry must become leaders in research, management, and human relations rather than the last bastions against inevitable change.

In addition, the timber industry, which is resisting change at the expense of our global environment, needs to be redesigned and restructured if it's seriously concerned about people, the sustainability of their jobs, and the sustainability of their communities. To this end, we also must change our historic view of the timber industry.

The timber industry as it's usually thought of goes from the forest to the mill, but the United States – in fact the world as a whole – is founded largely on an interrelated, interdependent suite of forest-dependent industries, which individually and collectively depend much more heavily on abundant, clean water than they do on growing and harvesting wood fiber.

A forest-dependent industry is any industry that uses raw materials from the forest, including amenities and services like oxygen, water, electricity, and recreation, and commodities like migratory animals, such as salmon and steelhead. A forest-dependent industry also includes any industry that uses extractive goods like minerals, wood fiber, forage for livestock, resident fish and game animals, and pelts from fur-bearing mammals.

Some forest-dependent industries are based on amenities and services that are not extractive in the sense that the products either enter and/or leave the forest under their own volition. Such industries include the sport and commercial fisher who catches migratory salmon and steelhead in the ocean and rivers outside of the forest, the farmer who uses water to irrigate crops, the person who markets those crops, the electrical company that uses water converted to electricity, and the municipal water company itself.

Other forest-dependent industries are based on extractive products that are physically removed as raw materials from the forest and made available for refinement. Such industries include timber companies that cut trees; ranchers that graze livestock in forested allotments; miners who extract ore; hunters, fishers, and trappers who kill and remove forest-dependent wildlife.

Forest-dependent industries that refine the extracted products include jewellers, carpenters, boatbuilders, artisan woodworkers, anyone who uses paper, meat cutters and packers, and furriers. Finally, these forest-dependent industries are all interwoven because each industry uses one or more of the other's products, such as water, electricity, wood fiber, red meat, vegetables, and so on.

Today, however, the driving economic force is the extractive timber industry, which the public perceives as the “forest industry,” an industry that goes primarily from the forest to the mill. How have we let it happen that the timber

industry has for so long been the only forest-dependent industry with a voice? We're in essence allowing it to speak for all forest-dependent industries, while in truth it's looking out solely for its own self-interest by grossly altering the biological sustainability of the world's forests for short-term economic profits. In addition, the timber industry is continuing to eliminate many jobs by shipping one in every four logs to other countries for processing and by automating its mills to get rid of people and their jobs (although it speaks of the latter only in the euphemistic terms of "economic competition").

As the timber industry affects the biological sustainability of the forest for short-term profits, it has a dramatic effect on all forest-dependent industries – often to the detriment of the long-term product base of those industries. For Oregon, the Pacific Northwest, and indeed the world, we must have a balance between the short-term profits for the timber industry and the long-term economic sustainability of all other forest-dependent industries. Whatever balance is struck, it must, of social necessity, favor first and foremost the biological sustainability of the forest.

It's clear that the timber industry must change. It's equally clear that such change must render it dramatically different than it is today. After all, it's only one of a suite of the forest-dependent industries that serve the economic benefit of humanity.

Today, the sustainability of our forests rests – as never before – in our hands and in the wisdom of our decisions that, for better or worse, will determine our legacy for tomorrow, a legacy that's becoming increasingly irreversible. Consider, for example, a violin as a symbol of the fine-grained wood from our ancient forests. Then consider such composers as Johann Sebastian Bach, Wolfgang Amadeus Mozart, Ludwig van Beethoven, and Franz Schubert each of whom committed to paper music of great beauty, the translation of which for more than a century has been through orchestras. An orchestra, in turn, is composed of musical instruments and musicians that together give voice to the mute notes on paper. And a musician's ability to play a instrument is dependent not only on human skill but also on the quality of the instrument.

Over the last two centuries, the violins made by Antonio Stradivari have given the human ear some of the world's most exquisite melodies. Indeed, the wood of the ancient trees and the loving labor with which Stradivari crafted the wood to perfect his violins is a marriage of such harmony that each violin he made is called a "Stradivarius."

I've heard it said that a bird doesn't sing because it has an answer; it sings because it has a song. In the same sense, a musician doesn't play because he or she has an answer; a musician plays because he or she has a melody and a fine instrument, such as a Stradivarius, with which to create that melody.

To build a violin with the quality of a Stradivarius, one must be an expert violin

maker and also have available fine-grained wood from ancient trees. The quality of a Stradivarius is thus of yesterday and of today, but what about the violins of tomorrow? I was once confronted with this question in Seattle, Washington, where I spoke at a rainforest conference.

A young man who made violins entirely by hand came to me. “What will I do for a living,” he asked, “when the ancient forests are all gone and there’s no more special high-quality wood, such as that of an ancient, tight- ringed, clear-grained Sitka spruce, for me to work with? There are,” he said, “very few people who work the way I do, and we’re rapidly becoming fewer.”

Think carefully about his question. If we continue to convert biologically- sustainable forests into nonsustainable tree plantations that, among other things, deplete soil fertility and produce inferior- quality wood, the symphonic beauty of the centuries will become a hollow echo of dull tones as they play a requiem for our forests.

We can have sustainable forests, but only if that’s what we’re committed to and only if we act now. We can have sustainable forests, but only if we constantly question and re-evaluate along the way what we think we know and only if we retain all of the pieces – including native forests in all successional stages – from which to learn. We can have a sustainable suite of forest-dependent industries, including the timber industry, to produce products for people, but only if we redesign the timber industry to operate, in fact, within the sustainable limits set by the forest, not by short-sighted timber economists and corporate/political board members.

In both cases, we must learn humility, which means we must learn to be teachable by Nature. In both cases, we must become students of processes – not advocates of positions. In both cases, we must grow beyond the limited view of our own narrow interests. In both cases, we must work together for a common goal, with a common commitment: a sustainable forest for a sustainable environment for a sustainable suite of forest-dependent industries for sustainable human communities.

But before we can create and maintain a biologically-sustainable forest, we must have the humility to sit in Nature’s classroom – the native forest – with a beginner’s mind, a mind that’s simply open to the wonders of the present and the possibilities of the future. Here, away from the corporate/political boardrooms, can our scientific knowledge blend with our intuition. Here, with pen in hand and an inkwell called choice, we can craft a visionary plan that protects both the biological sustainability of the forest and the economic sustainability of the forest-dependent industries on which the social well being of our communities depend.

As I said before, the Forest Conference is a good beginning. But we must now go beyond the conference to resolve the fundamental ecological issues concerning

the long- term sustainability of our forests. The resolution of these issues is critical to the economic and social adaptability of our communities. The choice is ours. To our children, their children, and their children's children unto the seventh generation and beyond we bequeath the consequences.

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