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**Sustainable Forestry:
A process**

Sustainability is an oft supported, but little understood concept. Each day we are bombarded with the notions of sustainable agriculture, sustainable consumption, sustainable economic growth, sustainable societies...and yes, sustainable forestry. Sustainable forestry is a buzz word that we may associate with forest health, forest productivity, and forest biodiversity, but it is because of this buzz word status that the actual meaning of sustainable forestry, and the concepts that it represents are in danger of being overlooked. This essay will examine the elements of sustainability, how they are relevant to forestry, and how research institutions like the College of Forest Resources and Pack Forest can play a role in sustainable forestry.

In a perfect world we would not have to bring up the issue of sustainability. In paradise, sustainability would be a moot point, but unfortunately we live in a world of scarcity where it is possible for this generation to deprive the next of many things, including our forests, and the benefits we gain from them. Subsequently, a major component of sustainability is intergenerational equity. Dissecting the concept of sustainability further we see that three realms emerge. The social, economic, and ecological realms of sustainability arise again and again in our definitions of sustainability. Forestry fits this model because forestry is not just about trees. Forestry is where forests, societies, and economies intersect.

Although we sometimes think of these three ideas separately, the social, economic, and ecological components of sustainable forestry are closely related and overlapping in their effects. For example, changes in our economy (like globalization and a movement away from dependence on national timber production) change the way our society views the appropriate use and manipulation of forests by land managers. These economic and social factors in turn have an effect on the biological function of a forest. So when it comes to our forests, sustainability means providing our children and grandchildren with the ability to utilize economically, enjoy socially, and ensure ecological function in our forests. This is a real challenge, but this is also the reason that foresters and research institutions, like Pack Forest and the College of Forest Resources, consider and examine more than just the ecological aspects of sustainability.

Furthermore, we often think of sustainability and sustainable forestry as an end point or something that we work to achieve, but I would like to suggest that sustainability is not an achievement because it perpetually depends on the unforeseen future. Rather, sustainability is a process. Changes in our technology, societal values, economic drivers, knowledge about our ecological systems, and climate make our world so complex that we can never foresee all of mankind's challenges or available tools. I suggest that sustainability is the process by which mankind must determine what tools worked in the past, and how we might need to adapt for the future in order to ensure the perpetuation of biological function, social cohesion, and poverty alleviation in our neighborhoods, regions, nations and global world.

Addressing these changes in our ever urbanizing and globalizing world is part of the complexity of sustainable forestry. Advances in technology like remote sensing and computer based modeling are changing how land managers can assess past and future

forestry decisions. Society's expectations of what forests should look like and how we should use them continue to shift. The current economic gains or risks of forest product production, preservation, investment, recreation, and development also continue to shape forestry. And finally, our knowledge of how forest nutrient cycles, fire regimes, species succession, biomass production, and biodiversity are sustained is changing through discovery and careful research. So sustainable forestry does not mean using one set of tools or knowledge; instead it is the process of striving to integrate our knowledge and tools to address tomorrow's challenges.

To increase this complexity, the scale at which we can address sustainability is also variable. Social, economic, and ecological systems often operate on various scales from each other and within themselves. Let us take a small community in eastern Washington as an example. The social sustainability of this particular town depends on perhaps 10,000 people and the way their institutions function; the quality of the primary and secondary education system, the police department, or the city government. Additionally, this social fabric of the town is tied to state and federal governmental systems and social movements as well. The economic sustainability of this town may depend on local sales and service, tourism, as well as timber harvest and agriculture, much of which is marketed nationally and internationally. Furthermore, ecological sustainability operates at several scales including individual well water quality, air and watershed quality, fire regime of the regional forest, biodiversity of the biosphere, and even global climate patterns. We can see from this example that the complexity of addressing sustainability at all levels with a straightforward answer would be a mistake.

The point is, we cannot broadly assign a task, an ideology, a checklist, or a method to ensure sustainable function or sustainable forestry practices. The answer cannot be just: economic development, local production, globalization, national parks, managed forests, or more or less consumption because these are simplified answers. Ultimately the most complex question is: how do we become sustainable?

Paradoxically, there is no answer to the question, "How do we become sustainable?" because our world is a diverse collage of societies, economies, and ecosystems. Determining a silver bullet for sustainability would be like your doctor prescribing the same dose of medication every time you felt sick. This is where research institutions like Pack Forest and the College of Forest Resources come in. Because sustainability is so complex, variable, and site specific, knowledge about social, economic, and ecological function, how it is achieved, and how it may change in the future are imperative if we are to utilize our abilities to adapt and ensure the perpetuation and quality of life for all of mankind. Although it may sound grand, the discovery and dissemination of this knowledge is the key to our human ingenuity and ability to determine what tools worked in the past, and how we might need to adapt for the future in order to function sustainably. Sustainable forestry is ultimately a problem solving process to which Pack Forest and the College of Forest Resources can contribute innovation and energy.

Along with the role of knowledge discovery and adaptive innovation, institutions like Pack Forest and the College of Forest Resources can contribute to sustainable forestry,

and ultimately sustainable societies and economies by strengthening our ability to utilize this knowledge and innovation in collective action. If our goal is to provide for future generations we must deal with two sources of uncertainty: nature and our ability to cooperate with others. All the knowledge in the world is useless if we cannot apply that knowledge at some level in an effective manner through traditional or adaptive institutional structures. We cannot easily control climate or nature; therefore we must focus our efforts on understanding it, while continually strengthening our ability to cooperate with others on every scale of land management. Sustainability of our forests rests on our ability to coordinate our efforts and apply our knowledge and research at many scales. Pack Forest and CFR can not only disperse knowledge, but also provide a type of social technology that enables the coordination of landowners, researchers, community groups, agencies, students, faculty, staff, and the public in a way that provides us all with a common forestry language and a common goal of sustainable adaptability in forestry.

Achievement of sustainable forestry is something that cannot be measured by present generations. We can only minimize the risk of un-sustainability for our children. Research and continued knowledge accumulation about ecosystem function help us to minimize this risk. We often view resources like forests as fixed, and to a point they are, but we should not underestimate the capacity of human ingenuity and the logic of collective action. These are the roles that research institutions like Pack Forest and CFR play in the continuing struggle to achieve sustainability: ingenuity and the coordination of collective action.

Sustainable Forestry means providing our children and grandchildren with the ability to utilize economically, enjoy socially, and ensure ecological function in our forests. Although it may seem straightforward, in a wholesome and healthy way, sustainable forestry is the reality that we must create, which is more complex than brain surgery or rocket science. Understanding at least part of the complexity and creating an environment of cooperation is the role of Pack Forest and the CFR in helping to perpetuate sustainability.