

Creating New Visions of Sustainable Forestry

By James R. Boyle

I imagine a landscape that integrates a Swiss mountain valley, a Swedish countryside and a small town in Oregon's central Cascade Mountains.

I envision future forest landscapes as mosaics of communities like this. The landscapes would include four components—reserved native forests, forests managed using “New Perspectives” and “New Forestry” techniques; intensely managed forests; and towns and villages integrated in these forests.

The native forests would be reserved for ecological study, provide varied habitats and create an aesthetic and ecological fabric for the land.

The forests managed through New Forestry and other techniques would help meet a number of human needs, would be managed through conservative, ecological-based approaches and would yield timber and other products.

Third, intensely managed forest lands—tree farms—would be managed with techniques that emphasize the potential for long-term productivity and efficient wood-fiber production.

The fourth component would be towns and villages of forested landscapes. These would be thriving places where people live, work and derive their livelihoods, seek recreation and find spiritual and cultural renewal in forests.

Sustainable forestry should sustain both human communities and forest ecosystems. In parts of Finland, Sweden, Norway and Denmark, sustainable forestry does just that. I have seen towns, villages, farms, pastures, fields and woodlands all integrated into the landscape. In southern Sweden, a farmer and recent national plowing champion is a proud and skilled operator of a mechanized tree-harvester processor for a forestry cooperative. His farm has grain and hay crops, animals and trees. Machines, people and techniques are all part of the mosaic of the land.

During a trip to Denmark last May, Niels Elers Koch, director of the Danish Forest and Landscape Research Institute, showed me the Jaegersborg deer park just north of Copenhagen—3,000 acres of beech forest accommodating 3

million recreational visits per year, a population of 2,000 fallow deer and red deer and annual timber harvests of 300,000 cubic feet. The forest is hundreds of years old. As Niels and I walked there, I marvelled at the tranquility, unobtrusive areas of selective tree harvest, successful tree regeneration, wide variety of habitats and excellent system of pathways for walkers, runners and cyclists.

In addition, I have enjoyed cross-country skiing in Finnish-managed pine and spruce forests and seen the rare capercaillie there. I have run with friends in the tranquility of rolling mosaics of Swedish farm and forest land. I have camped by a rushing stream in the Norwegian mountains. These are landscapes in which forestry and human communities have been sustained for many generations.

In a May, 1991 *Journal of Forestry* article, Dick Gale and Sheila Cordray presented eight possible answers to the question, “What should forests sustain?” Their answers: a dominant product; a community; a human benefit; a global village; a self-sufficient ecosystem; an ecosystem type; ecosystem insurance; an ecosystem-centered approach. They concluded that each of these proposed scenarios implies “distinctively different political consequences.” They also pointed out that the management of any given part of a forest can simultaneously incorporate several of these approaches. I propose that this last idea is sustainable forestry.

Central to my vision of sustainable forestry is the concept of sustainable cultural carrying capacity. This is based on Garrett Hardin's definition of cultural carrying capacity which is, simply put, the number of humans that a given region—or nation—can support with a reasonable level of cultural amenities. Hardin presented this idea in relation to the availability of food and other basic resources in the face of booming world populations, especially in developing countries. In forestry, the challenge is to define the sustainable carrying capacities of our forested landscapes. How many humans—what sizes and compositions of human communities—can and should our forested landscapes support and sustain? In the Pacific Northwest, sustainable

carrying capacities for forest-based human communities are defined primarily by politics—and not by any logical planning. We need to use ecology, sociology and economics to create some visions of sustainable forestry and cultural carrying capacities.

I see several possible ways of defining sustainable cultural carrying capacity.

—Base the definition on current forest-based employment in communities. Then, on the basis of land productivity and reasonable land allocations, make calculations of the forest-product production and other uses that would be required to maintain these existing forest-based communities.

—Define the productive capacity of forested landscapes surrounding a given community. Given some assumptions about the processing of these products, and the likely benefits—such as recreation and the production of special forest products—determine the number of people that could be supported by the landscape.

—Develop scenarios for ways to allocate forest lands, from versions of New Forestry to forest-land allocation approaches based on habitat-conservation strategies. This has been done in Oregon and Washington. Then, identify the forest products and the other benefits that would come out of these forests and calculate associated employment opportunities. Determine what kinds of communities could be maintained under these scenarios.

I would prefer a scenario based on the current or a recent composition of forest-based human communities. This scenario would attempt to maintain similar community sizes and compositions. Some of the approaches that would be necessary to meet this goal:

—Working with public and forest land management organizations to define a reasonable range of sustainable carrying capacities for individual communities or clusters of communities.

—Continuing work in research that defines the ecological conditions necessary to sustain forest ecosystems in ways that will allow them to meet human needs and provide forest products.

—Developing forest management and silvicultural techniques that permit the wisest management of forested landscapes based on well-tested and documented ecological principles, not just on the basis of interesting and provocative hypotheses about ecological conditions.

—Supporting the development of innovative processes for the utilization of forest resources, including composite wood

products and innovative harvesting techniques that are environmentally sound and that prudently use petroleum and human resources.

—Working with public forest land management organizations to designate, define and set aside significant areas of forests for ecological study. These will provide the baseline ecological information needed to advance our understanding of forest ecosystems and the potential contribution of silvicultural techniques.

—Continuing to advocate for intensive forestry—tree farming for wood-fiber production—on the forest and other landscapes that are ecologically and economically suitable. It is justifiable to “farm” wood products, just as it is reasonable to farm agricultural products.

—Advocating lifestyles that reduce per-capita wood consumption in the U.S. and other overdeveloped countries.

Data-based systems, optimization techniques and geographic information systems could be used to illustrate sustainable carrying capacities under a variety of scenarios. These could provide the basis for detailed discussions of forest management alternatives. The vision is possible, and so is the reality.

Essential to my vision is integrating views of human communities as parts of forest landscapes. As Aldo Leopold asserted, we should view ourselves as members of the community of the land. We should work to create sustainable forestry within the appropriate context of a land ethic—a dedication to sustaining both ecosystems and humans. This requires a focus on ecology, sociology, economics and philosophy.

The U.S.'s forested landscapes can be as productive and attractive to humans as the European landscapes that are made up of clean towns and villages interspersed with forested areas. We should be pleased that—unlike our European colleagues—we have vast areas of reserved national parks, wilderness areas and other unmanaged forests. We should continue to call for their wise use, as well as the wise management of landscapes that can provide us with wood products and other resources that help sustain reasonable levels of human culture.

We are challenged to create a vision of sustainable forestry and to make that vision reality. Sustainable forestry is possible. It's essential. And it's up to us.

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