

# Ecological Land Management: Its Implications for Reforestation and Nursery Operations<sup>1</sup>

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Abstract.--Recent events have changed implementable land management practices a great deal in the western United States. This presentation examines the situation, current trends and forecasts the future as related to reforestation and nursery operations.

## THE SITUATION

In only a few short years the range of land management practices that are socially acceptable has narrowed greatly. The agricultural paradigm of maximum commodity resource output has become, in many places unacceptable. This unacceptability is manifested in an interacting morass of laws, appeals, regulations and litigation leading to major restrictions of traditional land management options. The options most effected, such as clearcutting, rely on artificial reforestation to regenerate the stands harvested. So, the controversy and its manifestations have a direct effect of reducing or modifying the reforestation and tree nursery business.

In hindsight this change should be no surprise, except, perhaps, for its recent rapidity. Indeed the roots of what we are witnessing spring from the conservation movement of the late 19th and early 20th century that spawned the National Parks and Forests. While this movement attacked and spent much of its highly visible energies on battles such as those related to the regulation of private forest land use and other issues throughout the 1920's and 1930's, its less controversial forms became institutionalized and enculturated in America. Institutions such as the Park Service, Forest Service, Soil Conservation Service flourished as did State Forestry organizations, Soil Conservation Districts, etc. Concurrently, through these organizations and

other means such as education and conservation groups, the wise and conservative use of natural resources became, in general, the accepted way of regarding such resources.

The rapid expansion of the economy of the Country during World War II and the post war period required use of natural resources to a degree unimaginable only a few years before. This period of heavy use, if not flagrant exploitation, combined with the political and social turmoil of the 1960's generated a resurgence of concern among the public about fundamental natural resource protection and integrity. People perceived that natural resources are finite and directly connected to our long term survival. This manifested itself in a series of laws regulating resource use beginning with the Environmental Protection Act of 1970. This was followed by many others such as the National Forest Management Act of 1976, The Threatened and Endangered Species Act, and various state forest practices acts that regulated or restricted land manager's discretion. This legislative momentum continues to this day.

At the same time scientists were learning more and more about forest ecosystems and the sensitivities of such systems. We know now that some of the apparently minor parts of an ecosystem are vital to its integrity. We know that ecosystems require diversity in their makeup to function properly and persevere. We know that man is impacting ecosystems, seriously, in ways we were not even aware of a few short years ago. Examples are acid rain, global climate change, groundwater pollution impacts. These scientific theories and findings have contributed in no small way to the public concerns about ecosystem degradation.

A salient event was establishment of Ecosystem-based Management as an operating policy in the U.S. Forest Service this summer. Connected

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to that policy was a restriction on clear cutting as a silvicultural alternative on most National Forests.

So, you can see, this trend in events has been underway for some time, but its full expression was, for a considerable period of time, muffled and somewhat suppressed by the overwhelming demand for forest products, traditions of heavy resource use, resource surpluses, and until recently, public complacency or apathy. Presently, as you can readily see in the newspapers land management policy is an arena of intense and major social and political conflict. Jobs are at stake and so is the quality of the environment. The land management issue is only part of a much larger debate about natural resource protection and preservation.

#### THE TRENDS

One way to try to predict the future is to examine trends and to try to project them into the future. So what are the trends related to the ecological land management that may effect the reforestation and tree nursery business?

A couple of major trends were mentioned in the The Situation section:

1. The trend toward more restrictive legislation and regulation of land use. This means more uncertainty about how we can manage lands. Indeed, what use the lands will be devoted to is open to question. There is much uncertainty about what the management land base will be and how that will affect reforestation as a business.

2. Science has advanced enough to make it apparent that the ecosystems we deal with are far more sensitive and complex than we thought. They may not be as tolerant of, or resilient to, man's impacts as we formerly thought. As we continue to delve into ecological processes we may find this to be increasingly true.

In addition, let me propose some added trends that will affect the reforestation business:

3. Wood prices have continued to increase and total demand for forest products will increase, but at a slower rate. Wood substitutes continue to become more competitive and widely used. Many old projections about wood demand and needs have been contradicted.

4. Social awareness and activism about ecological issues continues to grow. Forest land use allocation continues to shift toward recreation, wildlife and fisheries and water outputs. The "baby boom" generation is coming to power politically and seems to support this trend. There is an increasing emphasis on "natural" or ecologically-based management of forests.

5. Wood is being intensively grown on acres particularly suited for it and of little use for competing purposes. Where intensive forestry is practiced, it tends to be very intensive.

6. More and more, forest tree nurseries are developing production schemes and marketing to take advantage of a diverse set of developing "niche" markets. Those that are most innovative and opportunistic are flourishing.

7. Reforestation has generally become smaller scale and more tailored to the needs of specific sites. Trees, shrubs and forbs are being planted in many cases for non-timber production purposes.

8. "Artificial Regeneration" as we have known and loved it now has a negative connotation in the minds of many of the public and connects to negatives such as monoculture, reduced biodiversity, destruction of scenic values, etc.

There are many other trends that could be discussed. This has been but a fragmentary and incomplete list. Some of these observations are debatable as to the scope and intensity of their effect. However, one thing is sure: we live in a time of change in forest management and wildland use allocations. The turbulence associated with this change process is disconcerting to many of us. It makes the future uncertain.

#### FUTURE SCENARIOS

Predictions about the future are risky because it is so hard to assess the probability of event occurrence. I have heard many forest managers predict that we are on the extreme end of a so-called "pendulum swing" in public attention and sentiment and that the pendulum will swing back to acceptance of what foresters consider traditional forest management activities sometime in the future. While this may be true to a modest degree as forest products prices rise, I think it is mostly wishful thinking and a way of avoiding reality. I suggest there are two main reasons to believe this:

1. The prolonged enculturation and activism of the American public in environmental affairs sketched in The Situation segment of this paper, which indicates this is no fad.

2. The fact that the forest management issue(s) are only part of a much larger, deeper, broader set of world environmental issues and concerns that command the attention of the public.

If this conclusion is accepted, any future scenario in the tree nursery and reforestation business has to deal with the current situation and the trends observable. Then we can begin to see realities of change which I think are:

1. Diminished large scale planting of a few species of forest tree seedlings.
2. More small scale projects of several plant species for not only timber production but for a variety of purposes.
3. More, smaller orders for plants of a specific, specialized nature, size, condition, etc.
4. Increased competition for what reforestation and nursery business there is and an oversupply of forest tree nursery capacity.
5. Broader political base possibly.

There may be more realities that you can think of that I have not, but those are enough to conjure up a scenario.

That scenario provides a nursery and reforestation industry that:

1. Provides a diverse set of tailored plant materials products in a responsive, custom, competitive way to a market made up of many clients with a variety of needs and expectations.
2. Has the capability to do any part of or all of the job. That means a complete revegetation job (from prescription through planting) or just part of it: custom seed collection, seed processing, contract propagation and rearing of various forms of plants, special micro-propagation, special

plants of an unusual **size** or combination, etc.

3. Can survive on lower total production by providing specialized and custom services to a particular set of valued, perhaps long-term, customers, possibly by carving out a niche that the organization has a particular expertise in and reputation for.

4. Aggressively markets its services and competes in the nursery and reforestation marketplace, continually interacts with its clients, and survives by being opportunistic and adaptable.

In short this scenario projects a competitive, adaptable, full service industry that senses and responds rapidly and capably to its customers needs. This expertise, adaptability, aggressiveness, and flexibility enables it to survive in a lower volume, but higher product value market.

#### CONCLUSIONS

- Current situation: not a fluke or fad - the old days are gone.
- Trends: the trend toward demand for diverse plant material needs will continue.
- Future scenario: a time of change - nurseries need to become more entrepreneurial and opportunistic. Closer to the horticulture industry and ecologists at the same time and clients.