CONSERVATION COMPASS

The Role of "Disturbance" in Wildlife Management

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Those interested in public lands remain embroiled in debate. One group believes "nature knows best." Others espouse "management" to attain desired results. A mutual understanding of the role of "disturbance" in shaping forests and rangelands should shape that debate.

"Wildlife" describes animals that are wild as opposed to domestic. "Management" implies human control over nature.

"Disturbance" is an action that influences habitat. Natural disturbances include fire, insect and disease outbreaks, drought, flood, high winds, and eruptions. These events are unpredictable, except that they will happen. Timing, frequency, scale, and effect vary.

When humans became numerous, knowledgeable, and skillful enough, "management" became common and entailed preventing a disturbance (e.g., controlling fire, insect and disease outbreaks, floods, animal damage, removing animals, etc.) or creating the disturbance (e.g., controlling fire, cutting trees, planting vegetation, fertilizing, controlling grazing, applying herbicides, etc.). Further, these disturbances were arranged in time, space, and juxtaposition to create patterns and circumstances to benefit, or discourage, chosen species. Controlled disturbance is wildlife habitat management.

Progress in controlling natural disturbance has been dramatic over the last 100 years including aircraft, chemicals, weather forecasting, well-trained and organized personnel, transport, and accumulating experience and knowledge.

Management involved sequentially —protection of wildlife from predators (wild and human), regulation of harvest, reintroduction of animals into vacant habitats, and habitat protection and manipulation. Attention focused first on hunted species, then to other "charismatic mega fauna," followed by a generalized concern. Today, these concerns are expanding to ecosystems.

In the United States, management of public lands took two routes—preservation and multiple-use management. National parks exemplify the preservationist approach while national forests operate under the multiple-use concept (outdoor recreation, range, timber, watershed, and wildlife and fish purposes).

A plethora of environmental laws, reflecting the rise of the environmental movement, passed in the 1970s. A period now called the "era of environmental enlightenment."

These laws produced unanticipated results such as alterations in the focus and management of the national forests. The purpose, in law, is protection of the forests, securing a favorable condition for sustaining water flows, and furnishing a continuous supply of timber. However, little timber was cut until after World War II.

Then, cut levels reached 11 billion board feet (bbf) per year in President Reagan's last term, dropped to 4 bbf/year by the end of President George H.W. Bush's term 4 years later, and declined to 2 bbf/year by the time President Clinton left office after 8 years. This decline was more a consequence of obedience to law(s) than to policy changes.

Now, consider the rest of the story. The national forests were, to the extent possible, protected from fire starting in 1910. Fire prevention capability increased dramatically after mid-century due to ability to get crews to fires while they were small via an expanding road system and delivery via aircraft. Elite fire-fighting cadres emerged along with increasing interagency coordination and cooperation and enhanced technology supported by increased funding. Fighting fire emerged as the "moral equivalent of war."

Simultaneously, control of insect outbreaks became possible. Effective pesticides were available at low costs and aircraft were available to distribute those chemicals. The combination of effective control of fire and insect outbreaks saved trees. Those trees grew and, sooner or later, produced more "fuel" for forest fires. The intent was to harvest these trees at an opportune time. Protection was akin to protecting the contents of a warehouse until they could be marketed. That made good sense.

Then, overnight in historical terms, circumstances changed. Pesticides were discovered to have adverse consequences and many were banned from use in the forest environment. Large-scale tree mortality quickly ensued adding to fuel accumulations and increased likelihood of wildfires. Efforts to unload the inventory in the "warehouse" collapsed due to interactive effects of environmental laws and changes in public opinion.

The gradual increase in timber harvest between the late 1940s and the peak in the late 1980s produced a bonanza for hunters. Game animals benefited from early plant succession (food) and the "edge effects" between cutover areas and forests (cover) including deer, elk, turkeys, grouse, and quail. The roads built to facilitate timber management provided access. Foresters and biologists sized, spaced, and timed cutting units to maximum beneficial effects to selected species. Subsequent stand-tending operations were designed to yield additional benefits. Conversely, species adapted to "old-growth" were adversely affected with some ultimately becoming "threatened."

Such activities are down, perhaps as much as 90 percent, from their peak. Some organizations pursue cessation of all national forest timber management. In essence, consequences of 100 years of fire protection, 30 years of suppressing insect outbreaks, and 50 years of timber management have been frozen in place. In other words, managers are increasingly precluded from applying disturbances to manipulate habitat. We live with "natural" disturbances in "unnatural" conditions with "ugly" consequences that are getting worse.

If multiple-use is out, Congress should make that change. "Letting nature take its course" in a forest that is not "natural" is risky and without historical precedent. Spending half the year fighting ever-larger fires and arguing the other half-year over what to do next seems quite insane.

Default to de facto non-management lacks coherence and focuses on haphazard execution of small-scale activities that, somehow – almost at random - survive uncoordinated appeals, lawsuits, and judicial decisions. There is increasing chaos in place of clearly defined courses of action. It is time to face the consequences—ecological, economic, social, and political.

The application of "management" should not be taken lightly. Once the decision is reached to "manage" and actions vigorously instituted, it is essentially impossible to retreat to inaction and expect a return to the initial conditions. Once management is instituted, it is similar to being only a little pregnant. Or, in poker player's terms, "In for a dime, in for a dollar." The extant state of affairs is not a technical problem. It is a political problem that can only be solved in the political arena. ■