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BOB DOPPELT: Scientist ushered in new era of land management

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One of the nation's leading aquatic scientists recently passed away. Most readers probably don't know him. But if you like to fish, value clean water or treasure healthy forests and watersheds you owe him a great deal. Jim Sedell's accomplishments were enormous. He was a mentor and an inspiration to me and to many others. Elected officials, forest and fisheries managers can learn a great deal and avoid costly mistakes by heeding the lessons of his lifetime of work.

I first met Sedell back in the mid-1980s when he was with the U.S. Forest Service Pacific Northwest Research Station in Corvallis. At the time, the Forest Service, Bureau of Land Management, and many other public agencies practiced single issue and species management. Most forests were managed to meet specific timber cutting "targets." Many fisheries were managed on a stock-by-stock basis.

Through seminal research done earlier in his career, Sedell discovered how energy and materials are recycled along gradients from small streams to large rivers. His findings led to a new ecosystem-based paradigm for watershed management called "The River Continuum Concept." It raised serious questions about the single-issue management approach.

Sedell's research helped explain why in the 1980s forest management in the Northwest had become so controversial. Pacific salmon and other species were being driven toward extinction because timber harvest, road building, and other management activities intended to meet narrow objectives were disrupting the interconnectedness of rivers and streams. The lack of connectivity undermined the overall health of watersheds and the organisms they supported.

This is just one example of the nationally and internationally recognized scientific programs Sedell led that developed new theories and approaches to the management of watershed and river ecology, riparian ecosystems and fish habitat.

Some of his research forms the basis of management and conservation strategies that are today employed by almost every unit of the Forest Service, the Bureau of Land Management and other agencies nationwide.

Perhaps his greatest legacy is the Aquatic Conservation Strategy that forms a cornerstone of the 1994 Northwest Forest Plan. The ACS, as it is known, came about when Sedell and his

colleague Gordon Reeves were asked by President Bill Clinton to join forest scientists Jack Ward Thomas, Jerry Franklin, John Gordon and Norm Johnson to develop ecosystem-based options for managing federal lands in the range of the northern spotted owl. Using approaches such as PacFish they had previously developed, the outcome was the nation's first regional ecosystem-based approach to watershed, riparian, and fish management and restoration.

While single issue and species management dominated at that time, the ACS took a different approach. It sought to conserve and restore the structure, functions and key processes of whole forest and watershed ecosystems.

The strategy includes riparian reserves, which are ecologically defined protections for streamside vegetation on almost all streams in a watershed. It also includes protection of 'key watersheds', which consist of systems with high water quality or fish values. In addition, the ACS discarded the practice of having development actions determined by administratively established 'targets' that were unrelated to the characteristics or conditions of the ecosystem. In its place, the ACS established standards and guidelines for restoration and management actions that must be identified through a watershed analysis.

The ACS replaced the old approach of allowing development activities to occur unless adverse impacts could be proven, with a requirement that management actions contribute to, or at least not retard, the health and restoration of the ecosystem.

Although not perfect, the approach seems to be working. A study published in 2006 led by Reeves found that conditions had modestly improved in 64 percent of the 250 watersheds that were sampled, declined in 28 percent, and remained about the same in 7 percent.

Improved riparian conditions were deemed the most important reason for improvements. Increases in exotic species, as well as climate change, were some of the factors that appear to slow or prevent recovery.

We can all learn a number of lessons from Sedell's body of work.

First, natural systems should never be managed for a single outcome. This approach perhaps made sense decades ago when forests and watersheds were relatively undisturbed by humans. Today, entire landscapes remain degraded and recovery often takes decades or a century. More single-issue management will only make conditions worse.

Similarly, policies such as the O&C Lands Act that seem to require public land to be managed for the special purpose of producing revenue for local counties are outdated and should be changed. Most importantly, the ecosystem-based approach pioneered by Sedell, helped lead forest and watershed management into a new era. With climate disruption adding more stress on public lands, now is not the time to reverse course.

Bob Doppelt is executive director of The Resource Innovation Group, which is affiliated with the Center for Sustainable Communities at Willamette University. A memorial for Sedell will be held at 1 p.m. today at the World Forestry Center in Portland.

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