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BOOK REVIEW

Doremus, H. and Tarlock, A.D. 2008. *Water war in the Klamath basin: Macho law, combat biology, and dirty politics*. Washington, DC, USA: Island Press. ISBN: 978-1-59726-394-8, 260 pages, US\$30.

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The Klamath basin, straddling southern Oregon and northern California, is relatively unknown to water researchers and professionals outside of the USA. This is set to change, if the draft Klamath Hydroelectric Settlement Agreement (KHSA) of September 2009 and the larger Klamath Basin Restoration Agreement (KBRA) of which it forms a part, released in January 2008, come to fruition (see the paper on the Klamath basin in this issue of *Water Alternatives* for details). These agreements, if finalized, will lead to the largest dam removal project in the world to date, with the removal of four hydroelectric dams on the main stem of the Klamath river, and to a socio-ecological river restoration programme on a scale never attempted before, including the restitution of 36,000 ha of land to the Klamath tribe. As this will generate sizable international interest in the basin, it is very fortunate and timely that Holly Doremus and Dan Tarlock have produced the superbly well-written and researched book *Water war in the Klamath basin: Macho law, combat biology, and dirty politics*, which provides a comprehensive analysis of the history of water development and conflicts in the Klamath basin up to mid-2007.

Two well-renowned experts on environmental law, with a special interest in the Endangered Species Act (ESA) and the role of science in ecosystem management, Doremus and Tarlock were drawn to "the Klamath basin water conflicts in part because of the drama of the ESA's impact but even more because the story of the Klamath raises all the key problems of managing ecosystems on living landscapes occupied by real people with settled expectations" (Doremus and Tarlock, 2008: xvi). This story revolves around the conflicts between the ESA listing of two freshwater suckers in the Upper Klamath basin and a salmon run in the Klamath river, irrigated agriculture, Indian tribes struggling to claw back from termination, salmon fisheries, environmentalists and the impacts of large dams. They retrace and analyze these conflicts and the history leading up to them in admirable detail, and bring conceptual depth to their analysis by focusing on four themes they posit are fundamental to understanding conflicts over natural resources anywhere. These are "the historic entrenchment of resources entitlements granted without recognition of competing interests; the clash of fundamental values closely intertwined with natural resource use; pervasive uncertainty, not just over environmental impacts of activities but over the priority to be assigned to competing entitlements; and a 'problem-shed' extending across political and order boundaries" (ibid: 6-7).

In their analysis they use the terms "water wars" to refer to "the deep divisions and antagonisms among those who seek to control the water future of the basin", "macho law" to refer to the "two inflexible, winner-take-all legal regimes – prior appropriation and the Endangered Species Act – that the protagonists tried to use to impose their vision for the basin on their opponents" and "combat biology"

to "describe the plight of scientists in the basin, squeezed between the demands of conducting science as they learned it in graduate school, the macho legal regimes, and political pressures from various constituencies" (ibid: xvii). The "dirty politics" part of the title is self-explanatory. With the use of these adversarial terms the tone for the book is set, and not surprisingly many of the lessons the authors draw from the Klamath Water War are negative.

The authors provide a meticulous analysis of the many-sided conflicts in the Klamath basin in eight chapters. The story begins in chapter 1 with the dramatic showdown in the summer of 2001 in the Upper Klamath basin, when the United States Bureau of Reclamation for the first time in its history was forced to shut down deliveries to one of its irrigation projects. Incidentally, the Klamath project, covering roughly 210,000 acres and taking its water from the Upper Klamath lake, was one of the first federal irrigation projects built by the Bureau in 1905. The shutdown decision was based on the biological opinions issued by the US Fish and Wildlife Service and the National Marine Fisheries Service in early 2001, which concluded that deliveries to the Klamath project would threaten the survival of ESA-listed fish species, including the coho salmon. This rapidly led to the conflict being framed in "fish versus farmers" terms, but Doremus and Tarlock show that the story is much more complex, with chapters 2, 3 and 4 providing the context and history of the Klamath water conflicts and chapters 5, 6 and 7 delving into water allocations and the ESA listings, the role of science in the Klamath conflicts and the myth that science can determine policy decisions, and the efforts to find solutions to the conflicts since 2001. Each of these chapters is well crafted and contains a wealth of information and insights on the deeply intractable nature of water conflicts.

The concluding chapter discusses why the 2001 water crisis did not provoke more profound changes in water allocation law and practice or lead to reduced pressures on the ecosystem. The authors conclude that "the principal lesson is that the task of maintaining working rivers as rivers that also work ecologically is extremely difficult" (ibid: 182). However, they are cautiously optimistic that there is hope for the Klamath basin, especially if the KBRA is finalized and funded, but that this will require hard work and a change in mindset:

All participants must be ready to surrender some of the security of the macho legal regimes on which they have relied. All must move beyond seeing science as a weapon with which to bludgeon one another, to seeing science as a shared tool for understanding trade-offs. Scientific work in the basin should be a collective effort, overseen and directed collaboratively, rather than a form of cage fighting, pitting one set of scientists or one collection of data against another. Finally, all participants must be willing to engage in political discourse and give-and-take, without crossing the line into 'dirty' politics by taking advantage of their own special access to decision makers to make end runs around other participants. (ibid: 207-208)

If the stakeholders in the Klamath basin pull this off, and if the dam removal proposals become a reality, the Klamath basin will move into the limelight of international attention. However, even if macho law, combat biology and dirty politics retain the upper hand, the book by Doremus and Tarlock is required reading for water researchers and professionals from around the world. Their in-depth and insightful analysis of the deeply intractable and complex transition from water resources development to sustainable water and ecosystem governance is a much-needed antidote to the belief that better science, more funding and deeper integration can resolve water conflicts. They are to be commended for having written an excellent book that is very well documented, balanced, comprehensive and realistic, while also offering a glimmer of hope.