



Patrick Dearen, *Bitter Waters: The Struggles of the Pecos River*. Norman: University of Oklahoma Press, 2016. xii, 241 pp. Hardcover \$29.95.

The Pecos River is dying, beset on all sides by challenges natural and man-made, new and centuries-old. *Bitter Waters* is Patrick Dearen's attempt not only to chronicle the river's history in light of these problems, but also engage in didactic activism. Dearen clearly cares for the river, and while he does not prescribe solutions, he never shies away from sharing those proposed by others. His compassion becomes evident through extensive interviews conducted with the farmers, ranchers, scientists, and conservationists whose lives are deeply connected to the river's welfare. Their stories recount not only the discovery of problems and attempts at their resolution, but also the interviewees' worries, frustrations, and love for the Pecos. Using these personal stories allows Dearen to transcend what might have been dry, fact-by-fact reporting, while at the same time avoid an excessively emotion-laden appeal to defend and protect. It is environmental journalism done right.

Oral histories and interviews are Dearen's strongest source material, particularly in the final seven chapters that detail late twentieth and early twenty-first century human interaction with the river. He bolsters these accounts with an array of other sources, from sixteenth century, first-hand accounts of the river, to government surveys and reports, newspapers and other periodicals, and a host of scientific articles, books, and data. Even still, the Pecos' story would make little sense without judicious use of maps, photographs, and illustrations. Dearen has supplied those in abundance, enabling readers to comprehend the varied topography, biomes, and areas of human interaction along the river's thousand-mile track.

The numerous problems that define the Pecos are the result of over five hundred years of man combating nature, nature striking back--or, as often, disregarding man entirely while still dismantling his efforts--and man retaliating in kind. For example, the rise of agriculture, irrigation, ranching, and mining brought with it reduced water levels, pollution, and in the case of the Pecos, dangerously increased salinity. Salt levels have long been the river's defining characteristic, and over a century of private technological investment has done little to cure it. Irrigation also meant dam building, efforts that only partially succeeded in the face of infrequent but violent flooding. Importation of saltcedar trees resulted in their almost uncontrollable proliferation throughout Pecos watersheds, altering the floral nature of the river with both positive and negative consequences. Natural outbreaks of golden alga destroyed the river's fish population, but went unnoticed by experts until the mid-1980s because of their determination to blame the issue on man-made causes, such as pollution. Man versus nature, in perpetuity.

Bitter Waters is thorough, but tightly written and engaging; factual, but tinged with emotional appeal. Dearen's approach could easily be applied to the study of other rivers, river systems, or non-riparian environments. Environmental historians and activists alike would be well served to add it to their library.

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