

The Everglades: An Environmental History, by David McCally, Gainesville, FL: University Press of Florida (1999), xxii, 215 pp.

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I am one of those few lucky people who lives so close to the Everglades that I am able to visit them at least once a month. Living close to the Everglades makes you appreciate the sheer size of the Everglades, the diversity of habitats, the magnitude of wading birds during the breeding season, and the amazing differences between the wet season and the dry season. As someone who is deeply interested in the Everglades, I not only visit the Glades as often as I can, I also like to read anything that is published about the Everglades, which is probably why I was very excited to review David McCally's book *The Everglades*.

The book starts out in a promising manner, with a description of the pre-drainage Everglades. In this part of his book, David McCally uses a chronological approach to explain the factors that contributed to the formation of the Everglades. The strength of this approach is that it clearly shows that the original Everglades are the product of the subtle interactions between a subtropical water regime, the unique rock substrate and the ever-present fires. McCally illustrates that because of these factors, the Everglades can only exist on a vast scale which provides resilience and minimizes the effects of natural events such as hurricanes, floods, fires and freezes (p. 26). What is probably most interesting in this section is that McCally shows how the Everglades went from being a "aquatic cornucopia to the backwater of a backwater" after Florida's indigenous Indians disappeared in the mid-Eighteenth Century (p. 57). According to McCally, indigenous Indians prospered in south Florida "because they understood the environmental setting and lived within its parameters" (p. 57), while the Spanish and later Americans regarded south Florida as wasteland that had to and could be transformed (p. 56).

After McCally describes the origins of the Everglades in the first three chapters, he discusses the era of transformation that starts in the Nineteenth Century and continues until today. This section discusses successive attempts to drain the Everglades to make it suitable for agriculture:

Ever since Florida came under American control in 1821, the climate of the southern peninsula encourages the Americans who settled the region to believe that it could support tropical agriculture, and the organic soils of the Everglades convinced early observers that the peninsula's interior would support luxuriant growths of such crops (p. 85).

McCally continues to show us that the promise of fertile lands was false and that agriculture in the Everglades was, and is, much more complicated than originally thought. The entire section describes the "political chicanery, fraudulent engineering data, ... financial fast dealings" (p. 115) and the general lack of understanding of the intricacies of the Everglades system during this period. The story is interesting, and shows that until 1948, when the Army Corps of Engineers became involved, most of the drainage effort was not based on scientific research of the region but on speculation and politics. McCally ends this section by describing the ultimate result, a relatively small agricultural area just south of Lake Okeechobee dominated by what is known in south Florida as "Big Sugar".

Finally in the epilogue, McCally discusses the need for restoration of the Everglades. He argues that the engineering plan created by the Army Corps of Engineers "effectively killed the Everglades" (p. 157) and that we need to create a sustainable Everglades. To achieve this, McCally states that three things need to be done: 1) recreate the region's historic hydrologic regime, 2) form a constitutionally mandated state park, and 3) accept an "Islands and Seas" image of the Everglades. McCally makes a good argument for the hydrologic regime and his conclusion that a "sustainable system cannot be created as long as the southerly flow of water is controlled by the interests of the EAA's growers" (p. 179) is right on point. The second conclusion about the creation of a state park comes out of nowhere and, although the idea is interesting, McCally does not give any support for this anywhere in his book. In fact, McCally does not even mention the establishment of Everglades National Park in 1947, or Big Cypress National Preserve in 1974, nor does he discuss the consequences of the protection of these areas for the health of the overall Everglades. Finally, McCally asserts that restoration of the Everglades can only be successful if Floridians, and in fact all Americans, readjust their image of the Everglades from Marjory Stoneman Douglas' "River of Grass" (p. 180) to an "Islands and Sea" image (p. 181) that does more justice to the true nature of the Everglades.

Although the book is very instructive, McCally fails to give the reader a comprehensive view of the Everglades. In fact, it is likely that someone who is not familiar with the region will have a lop-sided perception of both the current Everglades and the reasons for its demise. McCally is absolutely right, the Everglades are much

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more than a River of Grass, but, besides a description in his section on the pre-drainage environment, he does little justice to those areas in the Everglades that are not part of the Everglades Agricultural Area. Just as important is that it is impossible to understand the current problems in the Everglades without at least acknowledging the burgeoning population in South Florida and the urban development that has encroached the Everglades from the east. McCally does not acknowledge that the scientific drainage and flood control of the Everglades that started in 1948 with the Army Corps of Engineers' Central and Southern Florida Project was not just for agriculture. In fact, the goal of the project was to build a water management system that provided flood control and water not only for agricultural users, but for municipal and industrial users along with preventing salt water intrusion and protecting Everglades National Park and other fish and wildlife resources (US Army Corps of Engineers 1999: pp. 1-10).

Obviously, the project has dramatically altered the Everglades, but it was not just the project that "killed" the Everglades. When the project was designed in the 1950s, only about 500,000 people lived in the region, and the population was estimated to grow to 2 million by the year 2000. Today's population of over 6 million people is three times more than the project was ever designed to serve. The remaining Everglades only occupy 50 percent of the original ecosystem, wading bird populations have decreased by almost 90 percent, and fisheries are declining steadily. Besides the problems associated with a decline in land mass of the Everglades and the detrimental effects of agriculture, the protection of urban development from floods and the provision of water for human uses has changed the water regime of south Florida. Increased urban development and the resulting water runoff has made it difficult for the managers of the existing water system to handle the natural fluctuations in rainfall. Lake Okeechobee is increasingly used as a water reservoir and storage basin, and no longer functions as a natural fresh water lake. The end result of providing for the water needs of the people is that the Everglades do not receive historical natural water flows, which has led to flooding of nesting areas and destruction of tree islands. At the same time, other ecosystems - such as the Florida and Biscayne Bays and the St. Lucie and Caloosahatchee estuaries - have been adversely affected by unsuitable freshwater flows (US Army Corps of Engineers 1999: iii).

It is too bad that McCally does not acknowledge the most recent attempts to restore the Everglades and provide water for all stakeholders in the region. In 1992, Congress directed the Army Corps of Engineers to review the Central and Southern Florida Project to determine if modifications in the system were necessary (PL 102-580, Section 309(i)) and in 1996, Congress authorized the Army Corps of Engineers to formulate a Comprehensive Review Study of the original Central and Southern Florida Project (The Restudy) (PL 104-303, Section 528). The purpose of this Restudy was to develop modifications to the Central and Southern Florida Project to restore the Everglades and Florida Bay ecosystems while providing for the other water-related needs of the region (US Army Corps of Engineers 1998). The result of this review was the Central and Southern Florida Project Comprehensive Review Study, better known as the Restudy, which was submitted to Congress on July 1, 1999 and written into the Water Resources Development Act, which was passed by Congress in the Fall of 2000.

Given the publication date of McCally's book (1999) one cannot blame the author for not discussing the Restudy. However, McCally gives some of the information that has been ignored by both residents and policymakers of south Florida, which makes it potentially a very valuable contribution: he explains the complexities of the pre-drainage Everglades. This part of the book really gives the reader a much better understanding of the uniqueness of the system and the delicate balance between water, rock and fire. It made me wonder if the Florida Everglades can survive in the long run, since the current system is about half the size of the original Everglades, and the hydrological conditions have inalterably changed due to the water demands of agriculture and ever encroaching urban development. If, in the next edition of the book, McCally would include a discussion about urban development, population growth and the Restudy, this book might indeed become more central to the Everglades public policy debate as the author indicates is his intention in the preface.

References Cited:

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