

## Preface

The wetland literature is awash in textbooks, reference books, guidebooks, and philosophical treatises. Advocates, scientists, and consultants have numerous web-based tools and information at their fingertips. But the general public has few resources to turn to for a good wetland read—a rich story that makes the reader laugh, wonder, and learn.

Recent studies demonstrate that people are more deeply moved by stories than by statistics (Small, Loewenstein, and Slovic 2007). With this in mind, we have gathered the real-life tales of a number of wetland scientists, explorers, and advocates and incorporated those stories into this book. Our goal is for you to learn about wetlands not from a checklist of characteristics but by immersion in a description of real events happening to real people. Through the art of storytelling, we hope to put into your hands the science of wetland ecology and the passion of those who wade into the muck. Each story becomes a portal through which you will visit the wetland and discover its secrets, while also learning important ecological lessons.

Our book is organized by generalized wetland types, all of which are geographically wide-ranging. Wetlands are complex ecosystems, classified by an impressive number of different methods, but the typology we have chosen—based on dominant vegetation—is the one that is most visible and therefore most comprehensible. Each category of wetland is found in almost every state in the United States and many of the Canadian provinces, apart

from salt marshes and tidal freshwater marshes, which of course occur in coastal areas. Wetlands particular to certain regions — such as the Louisiana bayous or the Piedmont pocosins — we do not attempt to describe, but the ecological principles outlined in this book do very much apply to these and every other kind of wetland. However, because our experiences in wetlands took place primarily in the Midwest and Northeast of the United States, most of our stories and descriptions come from these regions.

We portray each wetland type through the tales of people who work in these wetlands; along the way, you will understand the driving forces that create wetland conditions, discover the many cool adaptations and structures that form in response to these conditions, and grasp the ecosystem services, or “functions,” of each wetland type. We have made a serious attempt to verify that the features and functions we describe are supported by the preponderance of evidence found in the scientific literature and do not reflect just one study or one location, unless specifically noted.

Despite the fact that half of the wetlands in the lower forty-eight states have been drained, filled, or irrevocably altered, we have tried to write an optimistic book. Wetlands are still being destroyed at an alarming rate, but there are many people working to reverse this trend. Chapter 8 describes the inspirational work of the field of wetland restoration — bringing wetlands back! These exciting endeavors restore not only the ecosystem but our faith in humans’ capacity for solving problems. The restoration of salt marshes and wet meadows also presents excellent opportunities for confronting the challenges of climate change.

Our last chapter takes a sober look at wetland loss, restoration, and protection, and draws together some of the themes that run through the book. First, as you will soon learn, wetlands are intricately bound with the health of the land and thus our own well-being. Long regarded as nothing more than breeding factories for disease-carrying mosquitoes, wetlands in fact protect our water quality by killing pathogens, degrading pesticides, and converting harmful fertilizer runoff into ordinary components of air. Wetlands also play a critical role in the long-term uptake and storage of the greenhouse gases that create climate change. This theme unfolds within each successive chapter, as every wetland type plays a different role in supporting our material conditions.

Second, the creatures — whether finned or furry, slimy or green — that

inhabit these magical places are nothing short of miraculous. Their unexpected adaptive responses to the often harsh conditions of salt marshes, swamps, and other wetlands would challenge the imagination of the wildest science fiction writer.

The final theme of the book is about the people: the bog walkers, swamp stompers, river rats, and marsh haunters who delight in detangling the intricacies of connections among wetland soil, water, microbes, flora, and fauna. They are truly a breed apart, tougher than most, and by necessity endowed with a rich sense of humor—sometimes the only way to get yourself unstuck from the muck is to be able to laugh at the situation. Perhaps the swamp gas seeps into their souls, for these explorers are deeply committed to the wetlands in general, and their special corners of the landscape in particular. Through their eyes, we come to know why the storytellers in this book have devoted their lives to understanding and protecting these special ecosystems. Through their stories, we come to a deeper appreciation of how we must connect to the earth, of the ethical obligations we carry, and how we can reciprocate for all it gives us.

This book is not a textbook and will not cover every facet, function, or feature of every hydrogeomorphic category of wetland. We focus on the fun and the fundamental. Yes, scientists and laypersons alike are subject to exclaiming “Cool!” when discovering such things as moss animals, beaver-fighting trees, underwater spiders, heat-producing plants, and rare shrimp in a clover field. We want you to look at wetlands in a whole new way, to make an emotional connection with the creatures and currents within and, optimally, to cherish and protect these unique places.

