

FOREWORD

This book is a product of two important changes in U.S. agricultural conservation policy: (1) the advent of the environmental movement and (2) major increases in funding for U.S. Department of Agriculture (USDA) conservation programs.

For decades, the primary purpose of agricultural conservation programs was to improve the productivity of U.S. farms and ranches and to protect the “natural resource base” that sustained the agricultural enterprise. In the past 15 years the environmental agenda—water quality, air quality, biodiversity, among other objectives—has superseded traditional objectives as the primary purposes of agricultural conservation programs. This change in goals, in my view, is the most important development in U.S. agricultural conservation programs since their inception in the 1930s.

This change in purpose has been accompanied by a very large increase in funding for U.S. Department of Agriculture conservation programs and a new emphasis on improving the environmental management of working farms and ranches. Departmental conservation programs now account for expenditures of more than \$4.5 billion a year, nearly double what was spent annually for those programs prior to the 2002 farm bill. Demands to document what taxpayers’ are getting for their investment in conservation have increased hand-in-hand with the increase in funding.

These two policy changes create an urgent need to retool conservation practices, programs, and policy to meet the environmental challenge and to improve our ability to quantify, or at least simulate, the effect conservation practices and programs are having on environmental outcomes. Both of these needs can only be met by retooling and building our science base to inform environmental management in agricultural landscapes.

This book is intended to be a first step toward retooling and building that science base by documenting what we know and what we don’t know about the effect current conservation practices applied to cropland have on the environment. Our goal was to consolidate current scientific knowledge to (1) immediately enhance the effectiveness of conservation programs and (2) make strategic decisions about strengthening our science base in the future.

Our task proved more difficult than anticipated, but also more rewarding. After reading these chapters, I am left with a greater sense of optimism that we can achieve our ultimate objective—enhancing productivity, sustaining our resource base, and improving the environment simultaneously.

Clearly, we know much more than we are using on a day-to-day basis to improve environmental quality in agricultural landscapes. We could increase immediately the effectiveness of our efforts by wider and sustained application of the knowledge of practice effects and interactions contained between the covers of this book. A more intensive effort to translate science into practice would pay large dividends for taxpayers, agriculture, and the environment. The benefit, for example, of more precise targeting of conservation practices emerges in these pages as perhaps the biggest short-term opportunity to increase the effectiveness of our efforts. Where conservation practices are placed on the landscape appears to be as important to determining environmental effects as which specific practices are applied. Translating what we currently know into more effective tools for targeting effort and investing more in research and development to produce and deploy more effective tools should, I think, be a high priority for policymakers, research leaders, and program managers.

Finally, it is clear that we have in hand conservation practices and systems that, if applied effectively, produce real and meaningful environmental benefits. Those practices and systems are the “low-hanging fruit” that, if harvested, would accelerate production of the environmental benefits agriculture needs and taxpayers want.

There are many more reasons for optimism contained in this book—too many to list here. But there also is ample evidence of the magnitude of the challenge we face and the imperative of making strategic investments now to improve our ability to meet that challenge. I hope this book helps to improve conservation science, practice, programs, and policies. Most importantly, I hope this book is just the beginning—a helpful contribution to a strategic, coordinated, and effective effort to meet the environmental challenge confronting our nation’s agriculture.

— *Craig Cox*

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