

Foreword

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The “Managing Agricultural Landscapes for Environmental Quality: Strengthening the Science Base” workshop was one of a series of activities the Soil and Water Conservation Society (SWCS) has undertaken in support of the U.S. Department of Agriculture’s Conservation Effects Assessment Project (CEAP). The purpose of CEAP can be narrowly defined as an effort to improve our ability to quantify the environmental effects of conservation practices applied to agricultural land. That narrow definition, in my opinion, misses the most important and lasting contribution of CEAP—building the science base for effective, sustained, and confident management of agricultural landscapes to improve soil, water, air, and fish and wildlife habitat. The reason we need to better quantify the environmental effects of conservation practices, in other words, is to better focus our conservation programs and activities where they will do the most good.

The workshop that is the subject of this report grew out of an ambitious effort, led by Max Schnepf, to document the scientific knowledge of the effects of conservation practices on the environment. The book *Environmental Benefits of Conservation on Cropland: The Status of Our Knowledge* recently published by SWCS is the product of that effort. As Max notes in his preface to that book, the literature review stopped at the edge of the

crop field—the stopping point of most research on the effects of conservation practices in recent decades. The limitations of this edge-of-field focus were evident early on to everyone involved in the “Environmental Benefits of Conservation on Cropland” project. Indeed, participants at a workshop organized early in the project strongly recommended that SWCS take on the task of pulling together the state of our knowledge of the effects of conservation practices at watershed and landscape scales. The “Managing Agricultural Landscapes for Environmental Quality” workshop is our first attempt to take on that task.

I have been privileged to participate in, and in some cases lead, the activities SWCS has undertaken in support of CEAP. I have learned a great deal in the process. The most important lesson, I think, is the essential difference between an environmental effect and an environmental benefit. We can document many environmental effects of conservation practices at the field or farm level, but those effects don’t produce meaningful benefits until they are expressed at the watershed or landscape scale. Environmental quality is an aggregate phenomenon. It is the result of multiple activities—often highly disproportionate in their individual contribution—that add up to a perceptible improvement in a component of the environment important to local, national, or global communities. The effect of conservation tillage on reduced sediment loads doesn’t become a benefit, in other words, until the aggregate effect is enough to reduce the number of beach closings or to increase the viability of natural reproduction of trout.

The most important contribution of science and professional judgment in conservation is, I think, to connect the dots. Conservationists must understand how individual effort at the farm and ranch level adds up to real and meaningful results at the watershed or landscape scale. Conservationists must effectively direct conservation effort based on that understanding. Unless we learn how to connect the dots at the appropriate watershed or landscape scale, our efforts at the farm or ranch scale will come to naught.

We undertook this project in a spirit of exploration and experiment. We knew that many people have struggled and continue to struggle with the challenge of understanding the benefit of conservation at the watershed and landscape scale. Our

plan was to contribute to this effort by bringing together a multidisciplinary group of scientists and practitioners to share their understanding of how to connect the dots. The result far exceeded my expectations. I, for one, left the workshop with more confidence that we can connect the dots. I also left the workshop with greater conviction that

connecting the dots will dramatically improve the effectiveness of our conservation efforts.

Confidence and conviction alone will not build the science base we need or translate that science base into practice. We have a great deal of work to do. I hope our workshop and this book contribute to that important work.