



## VALUES AND LIMITATIONS OF APPLIED SCIENCE IN THE REAL WORLD

**Intelligent Tinkering: Bridging the Gap between Science and Practice.** Robert J. Cabin. 240 p. \$35 (paperback). Island Press, Washington, DC, 2011. ISBN: 9781597269643.

How can the applied scientist provide timely, useful results to the land manager whose job is to save and sustain our complex ecosystems under the scrutiny of the profession, public, and policymakers? Author Robert J. Cabin tells his story in *Intelligent Tinkering: Bridging the Gap between Science and Practice*. As a restoration scientist, Cabin describes his experience in setting up a research program to save an extremely degraded tropical dry forest in Hawaii and to provide “the best available science” to the practitioner. After meeting locals, participating in a working group, and working the land himself to restore the forest, he learns that the idealistic role of science, especially of applied science, to be the “knight in shining armor” in restoring and managing ecosystems is not directly practical as assumed, but, rather, indirect at best. Cabin attributes this reality to the science–practice gap. In this book, he first describes the science–practice gap from his personal experiences in Hawaii and then explores more generally why it exists and potential strategies to overcome it. While Cabin genuinely recognizes the value of basic and applied sciences, his conclusion is that successful restoration and management of ecosystems is really dependent upon “intelligent tinkering,” a concept first proposed by the eminent conservationist Aldo Leopold. Intelligent tinkering is knowledge gained through trial-and-error by skilled “amateurs.” Cabin suggests that this is the method that advances practice. Science follows to explain when, where, why, and how.

The strength of this book was the explicit documentation of a science–practice gap problem. Cabin tells the hard truth—applied science isn’t as applied as we like to think. As a research forester, I found his emphasis on this a little hard to swallow at times. Despite this, the book made me think about science and practice more deeply. In addition, Cabin is straightforward in his message, but he delivers it in a very personal tone, which adds both emotional depth and good humor to the book. Furthermore, he gives

a range of viewpoints from managers and volunteers to scientists. Here’s a quote he included from a manager: “It’s a big deal for us to find the time and money to go to these [research] meetings . . . I admit a lot of it is cool, fascinating stuff, but it doesn’t tell us anything about how to take care of the land we are struggling to manage. . . .” His exploration of the gap and its players feels well-rounded and sincere. I found it captivating to read and reassuring that I am not the only one who has encountered these issues.

Less impressive was the section on solutions to the science–practice gap problem. Cabin does describe personal attempts to bridge the gap, some examples of what he considered successful bridges, and some advice to overcome it. For example, he details key characteristics and intelligent tinkering approaches for three other restoration programs in Hawaii that, from his point of view, successfully bridged the science–practice gap. However, the solutions section comprised less than a third of the book. The title suggests a strong focus on closing the gap between science and practice and, thus, I was expecting more. Cabin’s main intention appears to be telling his story to help others recognize the gap and support those trying to bridge the gap rather than providing a recipe book of solutions.

SAF members are no strangers to the science–practice gap. In fact, bridging the gap is part of the organization’s mission. Therefore, this book provides a good example of the gap, thoroughly examines problems that contribute to the gap, and does offer potential solutions to bridge the gap. Managers impatient for scientific results, early career scientists, and students will get a sense of the challenges of field studies and potential obstacles to publishing and disseminating applied research. Experienced scientists and managers frustrated with the science–practice gap will find some humor and new ideas to close the gap.

For me, the book could not have been more timely. This may be because I am an early career scientist or because I read this tropical-setting book during the bitter cold winter of northern Minnesota. Nonetheless, I found this book to be engaging, honest, and valuable. I recommend it.

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