Lessons From the Field

A HANDS-ON CRASH COURSE IN LANDSCAPE CONSERVATION

By Shawn Cleveland, Jerod Merkle, Ryan Stutzman, Greg Neudecker, Jim Stone, and David Naugle

The next generation of resource managers must prepare to implement lasting conservation in the face of climate change, population growth, and increasing urbanization. Those who focus on landscape conservation—with strategies built around focal species that represent an entire ecosystem—will face particularly tough challenges. They’ll need to maintain functional landscapes, prioritize landscapes for conservation, and build trust and credibility with landowners. Is education today preparing landscape conservationists to tackle these problems effectively?

In a word, no. A review of curricula from 11 top wildlife biology programs in the United States shows that university programs are weighted towards basic biology, techniques, policy, and management, but are weak in the applied aspects of landscape conservation, such as communicating with stakeholders, forming partnerships, and choosing focal species (unpublished data, see online materials). This scarcity of applied coursework is symptomatic of the emerging disconnect between land management and university teaching. At the University of Montana (UM), we’re bridging this gap with a field-based landscape ecology course that allows students to immerse themselves in the situations they will address as professionals.

Learning on the Land

This idea was born in 2007, when Greg Neudecker, a private lands biologist for the U.S. Fish and Wildlife Service (FWS), met with rancher Jim Stone, chairman of the Blackfoot Challenge, a grassroots land management organization that’s a national model for landscape conservation. Each had spoken to UM students about landscape conservation during brief field trips in the past, but felt that a more thorough field experience was necessary for students to truly understand the issues biologists face, from working with landowners to implementing long-term conservation plans. Together they envisioned a landscape-conservation field course and brought the idea to UM’s wildlife biology program.

Neudecker, Stone, and UM professor David Naugle co-taught that first field course in spring 2008. The semester-long course met weekly and included five day-long outings to the Blackfoot Valley in northwest Montana, home base of the Blackfoot Challenge. The goal of the course was to take interested wildlife graduate students and a few undergraduates—a group already well-educated in the science of conservation—and give them the skills to be successful conservation practitioners. Most students in the class, including ourselves—Shawn Cleveland, Jerod Merkle, and Ryan Stutzman—already had ample experience working in the field, but much less expertise interacting with public stakeholders such as landowners or ranchers.

Lessons in wildlife biology, ecology, social skills, and business made for a jam-packed semester. The first several weeks of the course were in the classroom, and the last several weeks included trips to the Blackfoot watershed and other landscapes.

Classroom lessons involved:
- Wildlife science: Required readings included scientific literature on focal species such as freshwater fish, grizzly bears, and waterfowl.
- Management strategies: Students learned how agencies such as FWS prioritize which landscapes to conserve.
- Conservation partnerships: Guest speakers gave students a real landscape challenge, involving specific wildlife species and stakeholders, and asked the students to choose the focal species, select stakeholder partners, and develop a conservation plan.
- Priority areas: Students discussed characteristics that make certain areas—such as the Blackfoot Valley and the prairie pothole region—important to conserve.
- Science as a business: Naugle taught students that conservation projects should be viewed as business ventures, considering available resources, partners, fundraising mechanisms, marketing strategies, and ways to avoid failure and maximize long-term results.

In the field, students acquired invaluable skills, learning how to:
- Evaluate success: After developing conservation
plans, students observed “real world” models in action then discussed why one strategy worked while another fell flat.

- Develop trust with partners: Landowners and biologist discussed working collaboratively to develop trust and credibility. They suggest starting with small, win-win projects such as spraying weeds before initiating complex projects requiring compromise.
- Hold a public meeting: Students learned about who should call a meeting and how to set up debates that will be productive and amicable.
- Hire employees: Professional wildlife biologist and managers shared their tips on hiring and managing teams of employees.

The field course is enriched by guest speakers including biologists and landowners affiliated with the Blackfoot Challenge. Students learn from people who have united communities, built support for landscape conservation, and enabled successful implementation. Renowned local rancher David Mannix, for example—a board member of the Blackfoot Challenge—helped students understand how a visionary rancher can do far more than a lone degree-toting biologist to develop the relationships needed to foster landscape conservation. Mannix sees the field course as valuable for both students and landowners. Helping the next generation of wildlife professionals understand and respect the values of ranchers and other landowners, he says, “will leave everyone better off in the long run.”

**Measuring Success**

Demand for the course increased in its second year, but enrollment was limited to 20 to ensure that students got the most from the experience. Instructors assessed student views before and after the course, and found that most participants dramatically shifted their approach on how to conserve landscapes. Students moved away from a short-term, reactive approach that favored preservation of remnant parcels (such as acquiring a small piece of parkland to preserve a single orchid species), and came to favor a long-term collaborative approach to conserve large, intact landscapes (such as working with landowners to develop off-site water sources to improve both stream health and grazing potential). Students also changed their views on the preferred approach to lasting conservation by overwhelmingly selecting partnerships (83 percent) over regulation and litigation (7 percent).

The course is already making a difference. Aubree Benson, now a U.S. Forest Service fisheries biologist, took the course and uses its lessons daily. “It covered things most people don’t think about, like how you give someone a handshake, what you wear when you go meet a rancher in the field, how to place yourself in their shoes,” she says. “Every time I’m dealing with a landowner or asking for permission to access their property to shock some fish, I think about what I learned in the class.”

UM’s field course continues to evolve. In 2009, for example, we added a “capstone” three-day-long field trip to eastern Montana to see a different conservation partnership at work. Eventually we plan to offer a similar course to educate current professionals in landscape conservation. We can’t afford to wait a generation before these concepts become commonplace. In fact, it’s imperative that universities educate students with applied courses in landscape conservation. We know from experience that students in college can develop the necessary social skills to become effective managers, and we believe that state, federal, and private employers will demand it. We challenge colleagues to help students shrug off the days when biologists told landowners what to do, and instead inspire students to form partnerships that will safeguard wildlife and maintain rural ways of life.

To see the syllabus from the University of Montana’s landscape conservation course, view results from a survey of wildlife programs, and read more about partnerships in the Blackfoot Valley, see this article online at www.wildlife.org.