

IGERT Field Course: Managing Water, Wetlands, and Watersheds in Southern Africa

A multidisciplinary team from the University of Florida's Integrative Graduate Education, Research and Traineeship in Adaptive Management (IGERT-AM) spent the summer of 2008 in Southern Africa participating in a field course designed to examine adaptive management of water, wetlands and watersheds. The course is part of a National Science Foundation (NSF) IGERT Program grant at UF. Designed as an integral part of the IGERT-AM program, each summer for the past three years a new cohort of Ph.D. students has spent 6 weeks in southern Africa studying the biophysical, social, legal and political issues involved in the management of major watersheds in Botswana, South Africa, and Swaziland. This year's team was composed of ten students, a post-doctoral fellow, three faculty, and one staff member.

The course began in Durban, South Africa, where the team met with students and faculty from the University of KwaZulu Natal to share experiences and understandings of water management issues in their respective areas. The Florida team presented a synthesis of the management issues of the Florida Everglades, a system they had studied as part of the summer field course prior to traveling to Africa. Students and faculty from UKZN presented an overview of management issues and research related to the St. Lucia estuary on the east coast of South Africa. The UF team then traveled from Durban to St. Lucia to further examine the unique hydrological system and its management issues.

Following the St. Lucia experience, the team traveled to Swaziland and explored the Lower Usuthua Smallholder Irrigation Project, a poverty alleviation initiative situated in the lowveld of Swaziland. The dam project will ultimately provide irrigation to over 11,000 hectares of land, transforming the local economy from subsistence farming into sustainable commercial agriculture. The team visited the project site and participated in round table discussions with community leaders about capacity building, farm managed institutions, water management institutional frameworks and participatory planning, and monitoring/evaluation processes.

Next, the team traveled to Kruger National Park where they participated in several days of discussion sessions with biologists, hydrologists, planners, and managers concerning initiatives to adaptively manage park resources. Kruger has a very robust research program with over 200 research projects spread

throughout its 2 million hectares of land and across all spheres of its operation. Important areas of research include the role of fire (frequency, timing, and intensity) in the Kruger ecosystem and programs regarding elephant dynamics, the most controversial of which involves testing contraception as a means of controlling their population growth. The Kruger system was an important juxtaposition to the park system of Botswana, visited next by the UF team.

The bulk of the overseas course (about four weeks) was spent in and around the Okavango Delta. The UF team heard lectures from faculty at the University of Botswana's Harry Oppenheimer Okavango Research Center (HOORC) in Maun and had the opportunity to meet one-on-one with HOORC scientists working in their areas of interest. The UF team traveled to multiple sites throughout the Delta and its surrounding area, learning the general ecology as well as details about the unique geology, chemistry, hydrology, and management of the area. Of particular interest to the team was meeting with members of a local Community-Based Natural Resource Management (CBNRM) project. Students were able to see and hear first hand how CBNRM projects function and are impacting the well-being of these communities. Students participated in ongoing research efforts of UF and HOORC joint projects through data collection to assess the impact of elephant damage, hydrologic data collection, and ecological transects in the Delta to assess characteristics of vegetative cover in floodplains.

While objectives of the summer



included increasing students' understanding of the factors affecting the management of various watersheds as well as introducing students to basic physical and ecological data collection, one of the overarching goals was to create an interdisciplinary team through which students are asked to perform and deliver as a collective. Throughout the summer, students were organized into teams and worked on assignments that revolved around the science and management issues of each of the watershed systems visited. Overall, a major objective IGERT-AM program is to develop a sense of camaraderie and respect for fellow students that will ultimately enable each student to become skilled in collaborative, cross-discipline, integrative science that will inform management of complex systems. The summer Africa field course is the first step in that process for each cohort of students entering the program.

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