Wetland Wire

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DUWC Joins Iraqi Marsh Restoration Project

An expedition by Duke University Wetland Center director Curtis Richardson to evaluate damage to Iraq's storied Mesopotamian Marshlands revealed an environmental disaster of vast proportions. However, he also found the potential for restoring a significant portion of the marshes and with them the Marsh Arab culture.

On his June 14-28 trip, he encountered dust-bowl-level desiccation within the former wetlands, a destroyed date palm industry, a drinking water crisis, wrecked laboratories, and a pressing need to train a new generation of environmental researchers.

Richardson, the only university researcher on the trip, was joined by Peter Reiss, an anthropologist from Development Alternatives, Inc. of Bethesda, MD, who served as team leader; Azaam Alwash, a hydrologist and engineer with the Eden Again Project and Iraq Foundation; and Doug Pool, an agronomist with the U.S. Agency for International Development's (USAID) Iraq Office.

Together, they are developing with Iraqi experts a plan to restore a portion of the marshlands, which some legends identify as the site of the Garden of Eden. The formerly pristine wetland ecosystem of more than 20,000 square kilometers has been reduced by an estimated 90 percent through a combination of upstream damming, protracted warfare, and deliberate draining. The draining was done by Saddam Hussein's government, both for land development and to suppress an indigenous 5,000-year old Marsh Arab culture that opposed his regime.

DUWC Director Curtis Richardson, poses with a local marsh Arab Sheik in the Haweizeh marshes, one of the best remaining marshes in Iraq.

For Richardson and his colleagues who made the USAID-sponsored visit, there was potential danger starting with an early morning armed convey racing across the Iraqi border from Kuwait and continuing with his first night on the third floor of his hotel in Basra. “I was lying there hearing machine gun fire getting closer and closer, and wondering if we would ever get to see the marshes,” he recalled in an interview.

The group traveled up to hundreds of miles daily, sometimes under the protection of armed U.S. military guards, occasionally under hired local Iraqi guards in the region north of Basra. Often unarmed, the four scientists were led by the Assisting Marsh Arabs and Refugees (AMAR) international charitable foundation into the small villages in marsh areas. There, they made initial damage assess-

continued on page 3

On The Inside

2 From the Director: The Adventure of a Lifetime

7 Faculty News: Curtis Richardson named 2003 Society of Wetland Scientists Fellow

DUWC Joins Iraqi Marsh Restoration Project

continued from page 1

ments by collecting soil and water samples, many of which are now being analyzed at the DUWC laboratory.

"Saddam Hussein was a master 'brown field generator,'"said Richardson, referring to a term for environmental decimation. "He churned that country upside down. It looks like you let a child loose in a sand box with hand grenades."

Of the three remnant marsh areas, he found the Central Marsh to be in the worst shape. "It's just a complete dust bowl," he said. Locals had broken a Hussein-built drainage dike in one area in an effort to return some water, but "nothing was growing there yet," except for a few remaining desert plants, he added. In another recently re-flooded area, too much salt had been drawn out of the long-dry soils to support freshwater vegetation, and this area was now turning into a salt-flat.

His group found the Hammar Marsh area, nearest Basra, to still have some remaining lush areas where some stately date palms are still in cultivation. But Richardson said Hussein, in his vendetta against the Marsh Arabs, "basically wiped out" the local date palm industry, once the world's largest exporter. The largest remaining wetland areas are the Haweizeh Marshes along Iraq's border with Iran. That's where Richardson and his colleagues reached a place where locals had reintroduced their traditional water buffalos and were seen fishing.

While Marsh Arab villages are beginning to be reconstituted in areas adjacent to the Haweizeh marsh, in some cases reoccupying still-roofless former dwellings, "all of the communities we talked to are desperate for clean water," he reports. That's because rivers feeding the marsh areas are currently contaminated, and upstream utilities could take years to repair.

"They're having all these problems with poor water, and they're surrounded by the answer," he said. That's because, with the proper knowledge, Iraqi scientists and engineers could build special "constructed wetlands" within marsh areas, he added. By so engineering nature there, the filtering properties of natural vegetation could be harnessed to clean some of the polluted water.

First, however, Iraqis will have to overcome the aftermath of war and 30 years of neglect that has decimated the country's research infrastructure, Richardson said. He and his colleagues witnessed the destruction firsthand at the University of Basra's marine science center, where looters had stripped many classrooms of their contents as well as smashed vital scientific equipment.

Richardson quickly learned that Iraqis also lack needed training. "They have excellent marine biologists and zoologists who are very competent in what they're doing," he said. "But they had been completely out of the field of environmental science, which took off in the '70s. They are not trained in wetlands ecology and management. They've completely missed that. They have lost a generation of researchers.

"We're developing a program with the USAID where we would help restore some of the marshes through some pilot projects," he said. "We know, for example, that we would use the Haweizeh Marshes as a seed source."

"If this goes through and is approved, we're also going to work with some of the universities there to bring some Iraqi scientists to Duke for some environmental and wetland training," he added. "Then we're going to do some training in Iraq."

In the end, Richardson predicted that Iraqis "will not be able to restore all the marshes, because they won't have enough water. There has been a long process of draining. Maybe they can get 15 or 20 percent back."

"The trip gave me hope that we can make a difference in the marshes and give some of the marsh Arabs a chance to return to their culture. These people, like most rural populations, are survivors, and with a little help they will be able to return to their rice farming, fishing and mat-making from freshwater reeds."

—Monte Basgall
Duke Office of News & Communication

Left. Arabs carry goods on boats and wash clothes in the water in one of the few remaining healthy areas along canals near Basra. The date palms are among the few survivors of a once productive date palm industry destroyed when the marshes were drained. Right. Deserted Madan dwellings slowly collapse in a drained marsh where dust-bowl-like conditions allow only a few desert plants to grow. Photos by Curtis Richardson.