



# THE EDEN AGAIN PROJECT

## RESTORATION OF THE MESOPOTAMIAN MARSHES

This is the second edition of the Eden Again Project’s quarterly newsletter. Much has happened. Our project has gone from the forlorn hope of expatriate Iraqis to personally witnessing the restoration of the marshes. The following sections provide a brief overview of the status of the marshlands, a personal anecdote of a re-flooded marsh, and an update on our project activities.

### STATUS OF THE MARSHLANDS

Conditions on the ground have verified the findings of satellite image analysis -- most of the Mesopotamian Marshes have been desiccated. While many marsh dwellers are returning to their homeland, they lack basic services – clean water, food, and basic health care. But the biggest obstacle is the limited extent of re-flooded areas which means that most of the marsh dwellers remain dispersed. These photographs illustrate typical conditions in the desiccated areas of the marshlands.

The photograph to the right shows a dried area in the Central Marshes.



The photograph below is from the dried Sannaf Marsh, located northwest of Haweizeh Marsh.

The photograph below shows a close-up of desiccation cracks in the Central Marshes.



The photograph below is from the western Haweizeh Marsh.



The photograph below is from the Hammar Marsh.



There is good news, however, in the re-flooded portions of the marshes. These include the southeastern extremity of the Hammar Marsh (Garmat Ali area), westernmost portions of the Hammar Marsh (Bani Said and Karmashia), north of the Euphrates east of Naseriyah (Fuhud area), the periphery of the Haweizeh Marsh, and the northeastern portion of the Central Marsh (Hawr Al-Awdah, described below). On the ground, these areas seem enormous – water as far as the eye can see – but when located on the satellite images, we see how small their extent actually is. Some of the areas that have been recently re-flooded have abundant re-growth of reeds and return of marsh dwellers while other re-flooded areas remain barren. Possible problems could include salinities that are too high or water levels that are too deep to allow for germination of the seed bank, or simply too much time has passed since these areas became dry and the seed bank has lost its vitality. The section below is offered as a snapshot of a re-flooded marsh, in the words of Azzam Alwash.

## GOOD NEWS FROM THE HAWR AL-AWDAH

In September, as I was traveling back to Baghdad with my driver and an engineer, on a whim we decided to visit Maymunah, an important village in the northwestern portion of the former Central Marshes. The local head of the village gave us a guide who told us rumors about a re-flooded area only a half hour away. So we traveled down the river, collecting water samples as we went. In the 1980s, this area was lush rice fields with fields of date palms and prosperous villages, but what we saw were sparse encampments of people living in mud hovels. The people were not allowed to farm anymore except for wheat, and what was grown was of such poor quality that it didn't bring enough money to even pay for the seeds. Wind blew dusty clouds around us from the barren earth and whenever we stopped, kids gathered around begging for water.



When we crossed the last bridge, we saw nothing but vast desert in front of us. We continued along a potholed dirt road ending at a pumping station. We were told that until recently, this equipment had been used to collect water from ditches that were constructed to drain the area. Due to irrigation of the "reclaimed" wheat farms, left over water from irrigation and high groundwater conditions required the pumping stations to keep the area dry. The guide told us that

in May 2003, the local leaders prevailed on the pump-house operator to stop pumping, and then the locals breached the levees along the drainage ditches, allowing water to go into the former marsh. As we followed the levee, we started to see reeds popping up and the brown desert turns slowly into green. In the distance I saw birds flying and I felt a cool fresh breeze.

We came upon a crudely constructed reed hut, inside of which there were kids eating fish. In the typical hospitality of the Marsh Arabs, they invited us to eat with them – we thanked them and give them water. We proceeded, with the kids following on foot. We climbed a small hill – constructed of the dirt that was dug in May from the levees of the drainage ditches to allow water to pass through. From the top of the hill I can't believe my eyes – I see blue water and deep green reeds stretching 180 degrees across the horizon.



There are mashhufs all over the place with fishermen bringing in their daily catch. They come to us and our guide buys ten pounds of fish for about two dollars. The fish were mostly carp, ranging in size from less than an inch to about six inches. When I inquired as to why there are small fish being caught, the fishermen told me they're using electrical shock to kill the fish. I said this is haram (not moral in Islam) and they said "no its halal (moral) what do you want us to feed our kids?" That was the last time I condemned their actions because I don't have an



answer to that question. The men here are daily fishermen, they come in to work during the day then head back to their mud huts in the desert. They tell of one encampment inside the marsh where a family of water buffalo herders has come back, but they don't think there is enough water for buffaloes yet. The fishermen told us that the water is very little, they need more water, they asked me to help to allow more water to get in. I can't promise anything, I feel helpless but I don't want to bring them false hope.

We took a mashhuf into the reeds to collect water samples and for the first time in my stay in Iraq, I heard the sound of silence, wind rushing through the freshly grown reeds, an occasional frog croak, and flies buzzing. Every now and then you hear a bird sing and I hope it's a reed warbler. I stand up in the mashhuf at the risk of capsizing it, with the guides holding on to the reeds to stabilize this small craft, and I can barely see above the reeds and its green all over the place. I leave reluctantly as the sun is setting and the road to Baghdad is long and hazardous.



The water samples indicate that the salinity in the marshes is higher than that of the Tigris River. This result suggests that the water is evaporating in the marshes, and leaving behind salts which could limit the re-growth of plants and the re-population by native animals. Flow-through of water needs to be engineered into this system to combat evaporation and maintain this piece of heaven.

## THE EDEN AGAIN PROJECT IN IRAQ

The Iraq Foundation's Eden Again Project remains committed to promoting the restoration of the Mesopotamian Marshes. In June, we participated in the first scientific expedition to the marshlands, led by USAID. The conditions at that time shocked us. In August 2003, Dr. Azzam Alwash became our project's full-time Director and has established our primary offices in Baghdad. He has divided his time between Baghdad and the marshes since then. Our primary financial support at this time comes from the Italian Ministry of the Environment, which has generously funded a broad survey of the water resources of Iraq, including hydrologic modeling to assess the lateral extent of the areas that can be restored, based on existing water resources. This project also includes an assessment of other water needs and a feasibility study for utilizing the energy from flared gas to provide fresh drinking water for the marshes. We also have had many generous gifts from individuals and from the Green Hope Trust. We are working closely with Iraq's new Ministry of Water Resources, which has declared marshland restoration its number one priority. The Ministry has established a Center for Restoration of the Mesopotamian Marshlands, which is in charge of coordinating activities related to marshland restoration. We also work closely with other ministries such as the ministry of Municipalities and Public Works, Environment, Electricity and Oil, and with international conservation organizations and have attended several coordination meetings hosted by the United Nations' Environmental Program.

The Iraq Foundation works actively to monitor the progress of restoration in the marshes. Over the last three months, we have conducted five separate expeditions to the marshlands, each time discovering new areas that have been reflooded. With funding from the Italian Ministry of the Environment, we will be conducting formal monitoring of the restoration of Abu Zarag Marsh. This project includes biweekly measurements of hydraulic parameters, water quality testing, and ecological monitoring. The goal of monitoring is to determine under what conditions re-growth of marshland vegetation will spontaneously occur, and what are the limiting conditions to re-growth.

Please visit our new website at [www.edenagain.org](http://www.edenagain.org) to keep up with events in the marshes and the progress of our project. We continue to develop additional proposals and seek participation from any group or individual that desires to achieve restoration. We thank you for your continued support and good wishes and hope to see you someday in the marshes.