

# Mara River Flows

## Integrated Water Resource Management

... for people and for nature

June 2010

Greetings from the Mara River Basin! The extended long rains that had been keeping the basin wet since November finally ceased this month. After nearly eight months of rain, the surface and groundwater in the region has been recharged, and the river is flowing at normal levels for the start of the dry season. After so much rain and corresponding vegetation growth, many predicted the wildebeest migration would be delayed this year from their normal arrival time in mid-July. However, the wildebeest surprised everyone by arriving *earlier* than expected, in the middle of June! By late June, there were already wildebeest carcasses in the river, and happy crocodiles.

### State of the River

Several of our readers noticed that, although flow levels have been consistently high for the past few months, turbidity levels have declined or stayed the same. There are likely two reasons for this. First, the regular rainfall has flushed out the aquatic system, washing down debris and sediment that had collected on the river's bottom. This is healthy for the river because it reduces the amount of organic material decomposing in the river that would otherwise use the oxygen needed by aquatic organisms. Declining turbidity levels are also related to changes in the terrestrial system. When the first rains arrived in November, the rainfall rushed off of hillsides that had been left bare by drought, over-grazing and harvested crops.



New Mara Bridge – May 16<sup>th</sup>, 2010



New Mara Bridge – June 26<sup>th</sup> 2010

### Water quality parameters for the Mara River

| Date       | Time     | Temp  | pH   | DO%  | Salinity | Turbidity |
|------------|----------|-------|------|------|----------|-----------|
| M/D/Y      | hh:mm:ss | C     |      | %    | ppt      | NTU       |
| 05/16/2010 | 13:41:45 | 22.44 | 7.72 | 82.6 | 0.05     | 163       |
| 06/27/2010 | 15:51:08 | 22.96 |      | 83.3 | 0.06     | 130       |

The sudden influx of everything that had accumulated on the landscape into the river caused sudden changes in the water quality that led to a large fish kill. Now that repeated rains have allowed grass and vegetation to grow back on the hillsides, rainfall events no longer cause such drastic inputs of chemicals and soil into the river.

With the river so recharged, it will be interesting to see how the water level fluctuates during the upcoming dry months of July and August. We're certain it will remain higher than it did last July, when the wildebeest barely wet their ankles crossing the river.

## Research



*Picture 1: Monitoring the Mara River inside the Serengeti with Dr. James Wakibara*

In May, we were hosted in Serengeti National Park by Dr. James Wakibara, the Serengeti's Lead Ecologist. The Serengeti manages an impressive resource monitoring program, and they have been conducting monthly water quality monitoring of 47 points throughout the park for a number of years. They are interested in revising their monitoring to focus more on the Mara River, which is one of their 6 priority areas. We visited with Dr. Wakibara and spent two days traveling through the Serengeti with him, in order to learn more about the goals and activities of their monitoring efforts and to provide some input on their proposed changes.

We were very impressed with their initiative to monitor the health of this critical water resource as it enters and leaves the park. During this meeting, we discussed the need for a harmonized monitoring program that extends into the Masai Mara National Reserve. We met with Brian Heath, Director of the Mara Conservancy, and James Sindiyo, Chief Warden for the Narok County Council, and they both agreed to participate in such a program. Florida International University and GLOWS will be working with these partners over the coming months to develop and implement this program, and we look forward to keeping you updated on this incredibly important step.



*Picture 2: Mussels from Talek River that have been eaten by an animal*

## Governance

In May, we were visited by Faith Sternlieb, a doctoral student from Colorado State University who is conducting her research on water governance in the Mara River Basin. Faith is interested in analyzing the institutional structures for water governance at multiple scales. She will also be working with focal communities to conduct participatory mapping of their water resources and formal and informal



*Picture 3: Meeting with the a Catchment Management Group in Mugongo, near the Mau Forest*

structures for water management. Faith accompanied us on a trip through the basin from the Mau Forest to Lake Victoria, and we had the opportunity to meet with 4 communities from 4 different regions. All of them were excited about working on these issues and potentially using their water and governance maps to help them communicate more effectively with other water users up and downstream. Faith is currently looking for funding for her research, but she hopes to return to the Mara to begin her work in May, 2011.

During her visit, Faith also had the opportunity to meet with several of our GLOWS partners on the ground, including WWF-ESARPO and CARE-Tanzania (more on them below), as well as other actors in the basin, such as Joseph Terer, of NELSAP's Mara River Basin Project. Joseph graciously hosted us in Musoma and provided us with a detailed background of the Nile Basin Initiative and NELSAP's history in Mara, as well as an update on some exciting activities in which they are currently engaged. NELSAP has recently received funding to implement a portion of the Hydromet Network that was designed for Mara through a participatory stakeholder process in 2007. They are in the process of purchasing rainfall gauges, automatic water quality samplers, staff gauges and automatic water level meters to distribute to Kenyan and Tanzanian water resource managers to install in the Mara. They are also in the process of hiring a consultant to conduct a feasibility study in the Mara River Basin regarding installation of a dam that could be used for hydropower and water storage. This study, funded by the World Bank, should commence in the upcoming months.



*Picture 4: Joseph Terer, of NELSAP's Mara River Basin Project, meeting with Faith Sternlieb*

## Partners on the Ground



*Picture 5: Training workshop on clay jars for water storage facilitated by CARE Tanzania*

During our travels through the basin, we visited several of our GLOWS partners and learned about their ongoing activities. In Mugumu, Tanzania, we visited CARE, who is working with communities around the Serengeti National Park to develop improved access to water supply and sanitation facilities and to promote good hygiene practices. During our visit, CARE was conducting a training in one of their target communities on the construction of clay jars for water storage. These jars have a capacity of 200-300 L, but they can be constructed with locally available materials. During the training, they discussed not only how to build them, but also household management of the jar

and treatment of drinking water.

We then traveled to Musoma, near where the Mara River empties into Lake Victoria, where we visited the WWF-Tanzania office. WWF has been working to develop Water User's Associations in the Mara, in accordance with the new TZ Water Resources Management Act (2009). They have helped to establish 14 WUAs under the umbrella of the Mara River Catchment Committee. We went to visit one community, Kwibuse, located just at the edge of the Mara Wetland. They told us of their concern about the water quality in the Thigithe River due to the presence of the Barrick Gold Mine, and their interest in improving communication with upstream WUAs to keep them informed about any problems. It is exciting to see this network of grassroots water users and managers grow.



*Picture 6: Meeting with the Kwibuse Community Group, near Mara Wetlands*

### **Other Interesting Happenings**

During our final trip to the Masai Mara before our return to the US, we had the amazing opportunity to assist the Mara Conservancy in some of their management activities. They were doing a planned burn on an area of savanna, and they used this opportunity to train their poacher-tracking bloodhounds. Chris and Amanda got to act like poachers and arsons, and run through the burned area to hide in the bushes. Amazingly, the dogs tracked us right through the ash! Since the Conservancy has started working with the dogs, they have helped them to track a number of poachers.



*Picture 7: Brian Heath and rangers from the Mara Conservancy starting a prescribed burn*



Picture 8: A Mara Conservancy ranger with a poacher tracking bloodhound



Picture 9: A bloodhound sniffing out poachers through a fire

### See you next month!



In July, Amanda and Chris will be leaving Kenya to begin their graduate studies in the US, and they will be welcoming Chris’s replacement, Nathan Karres, to the basin. Nathan will be arriving just in time for our TWB-MRB Quarterly Meeting, so look forward to more updates on the activities of our partners. In July, we’ll also keep you posted on how the levels of the Mara respond to the dry season and how it affects the wildebeest migration, and we’ll bring you more results from our water quality analyses. See you then...

#### Who are we?

Christopher Dutton is the Coordinator of the Transboundary Water for Biodiversity and Human Health in the Mara River Basin (TWB-MRB) Project. Amanda Subalusky is the Research Coordinator – East Africa for Florida International University. We both work within the GLOWS consortium. Read more about us at <http://maraadventure.blogspot.com>

#### What is GLOWS?

GLOWS is a consortium financed by the United States Agency for International Development (USAID) working to increase social, economic, and environmental benefits to people of the developing world through clean water, healthy aquatic ecosystems and sustainable water resources management. Read more about it at [www.globalwaters.net](http://www.globalwaters.net)