

# Mara River Flows

## Integrated Water Resource Management

... for people and for nature

March 2010

Greetings from the Mara River Basin, where the El Niño rains have carried us through the dry season and the long rains have now begun. After the long rains essentially failed to arrive for the last two years, it is a cause for real celebration that they have started. This is also the first time we have seen the system so full of rain, so it will be very interesting to see how the water quality indicators we have been monitoring respond. March also marked the end of the second quarter of 2010 for the Transboundary Water for Biodiversity and Human Health in the Mara River Basin Project (TWB-MRB), funded by USAID, so there were a lot of exciting activities taking place on the ground. We stayed busy this month doing exchange visits with our partners, participating in governance building workshops and meeting with technical specialists in the region to discuss implementation of a Payment for Ecosystem Services scheme in the basin.

### State of the River

From December through February, typically the dry season in the Mara River Basin, unseasonal rain events brought by the El Niño kept the river from falling very low. However, the rains seemed to be only temporarily raising the levels, and both the water level and water quality indicators would fall quickly between rain events. In March, the rains became much more frequent and regular, and the river began to hold these higher levels. Salinity levels decreased and dissolved oxygen levels increased.



New Mara Bridge – February 13<sup>th</sup>, 2010



New Mara Bridge – March 14<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
02/13/2010	15:45:48	28.07	7.37	65.3	0.1	194
03/14/2010	16:15:11	24.75	7.28	77.4	0.05	183

## Research

This month we began planning for the official launch of the Environmental Flow Assessment and Biodiversity Strategy and Action Plan reports that have been prepared for the Mara River Basin under the GLOWS program. Because the documents have been officially adopted by the Lake Victoria Basin Commission of the East African Community, they will be hosting the event, which has been scheduled for April. This will be an exciting culmination of years of cooperative effort between a vast number of stakeholders from the Mara River Basin, and we are looking forward to the celebration.



*Picture 1: WWF Environmental Flows Workshop held in Naivasha, Kenya, on March 29-31.*

We also participated in an Environmental Flows workshop in Naivasha hosted by WWF-Eastern and Southern Africa Regional Programme Office under their Water Security Program. This workshop brought together participants and stakeholders from all the Environmental Flow Assessments (EFAs) that have been conducted in East Africa, which include Pangani River (TZ), Wami River (TZ), Ruaha River (TZ) and Mara River (KE/TZ). Participants included representatives from Worldwide Fund for Nature (WWF), Lake Victoria Basin Commission(LVBC), International Union for Conservation of Nature (IUCN), United Nations Environment Programme (UNEP), Florida International University (FIU), Kenya Ministry of Water and Irrigation (MOWI), Lake Victoria South Catchment Area of the Water Resource Management Authority (LVSCA), Kenya Wildlife Service (KWS), Wami-Ruvu Basin Water Office (WRBWO), Ruaha Basin Water Office (RBWO), Pangani Basin Water Office (PBWO) and Tanzania Electric Supply Company Ltd (TANESCO). One representative from each basin presented on the status of their EFA, and then we worked together to develop local and regional action plans for EFA implementation. This was an exciting group to meet with and learn from, and we look forward to the initiatives that develop from this effort.

We also had a visiting scientist arrive in the Mara River Basin this month, Nick Silverman. Nick has an MSc in engineering and has worked as a river engineer in the USA since 2004. Nick is beginning a PhD program at University of Montana in September, and he is interested in working on impacts of climate change on river systems in semi-arid areas. He is visiting the Mara River Basin for a month to volunteer with us and assist in our sampling, and to learn about ways he may be able to contribute to the growing body of research in the Mara. We're excited to have a new set of eyes join us on the ground.

## Governance

In March, we also met with the Mara River Transboundary Water Users Forum (TWUF), which was first convened by WWF and LVBC in 2008. The TWUF is a voluntary body comprised of stakeholders from the Mara River Catchment Committee (TZ) and the Mara River Water User's Association (KE); technical officers from the ministries of water, agriculture, livestock development, forestry and wildlife, and local government in both countries; representatives of Serengeti National Park (TZ) and Masai Mara

National Reserve (KE); and Barrick Mines, among others. The primary functions of the TWUF are to advocate for equitable utilization and management of shared water resources, promote harmonization of water policies and monitoring protocols, promote improved water conservation practices and provide a forum for transboundary dialogue regarding shared water resources.

Since their inception in 2008, the TWUF has developed a constitution, pursued official recognition by the Lake Victoria Basin Commission (LVBC) and developed a Work Plan to guide their efforts in the basin. In light of the recent adoption of the Environmental Flow Assessment (EFA) and Biodiversity Strategy and Action Plan (BSAP) reports by the LVBC, the TWUF met on 18-19 March to learn about the recommendations of these reports and incorporate them into their 2010 Work Plan. Amanda Subalusky, from Florida International University, spoke about the EFA, and Fred Mnhina, from the Lake Victoria Environmental Management Program II, spoke about the BSAP. Members of the TWUF then developed specific actions they could undertake to promote the implementation of these reports. This body plays a critical role in efforts to promote improved transboundary management of the Mara River Basin, and their dedication to their duty is quite impressive.



*Picture 2: Dr. Wakibara, Lead Ecologist for Serengeti National Park, speaking at the TWUF Meeting held in Narok on March 18-19.*

We also made huge strides this month in our work with Kenyan and Tanzanian water resource management authorities to design a payment for ecosystem services scheme for the Mara River Basin. WWF and FIU have worked together since 2006 to lay the foundation for this scheme, by conducting stakeholder workshops in the basin, conducting interviews with potential buyers and sellers of ecosystem services, and quantifying the implementation and opportunity costs of best management practices in the upper catchment that could yield improved quantity and quality of water downstream. You can find the four reports that resulted from this work on our blog at <http://maraadventure.blogspot.com>. We are now in the process of using that information to develop an implementation plan for the basin that will identify the critical hotspots in the basin in terms of land degradation, determine the specific land use changes that need to be implemented, and develop a business case for potential buyers and sellers of ecosystem services to be engaged in catchment restoration together. On 25-26 March, we convened a meeting of both the Hydrology and Legal-Institutional Working Groups, comprised of technical experts from the region to guide the development of this plan. In May, the final reports from these groups should be completed and will be used to help guide the Livelihoods and Cost-Benefit Working Groups.

In final governance news from the basin, we told you previously about the increasing controversy over illegal lodges in the Masai Mara National Reserve. There has been a number of interesting news articles in both the Kenyan and international press about this problem that is threatening the sustainability of the Masai Mara. This month, the Ministry of Tourism announced a crackdown on illegal lodges that was due to begin on March 15<sup>th</sup>, which you can read about in the following news article from the Daily Nation - <http://www.nation.co.ke/business/news/-/1006/872394/-/hc54hiz/>

[/index.html](#). We have been in the Masai Mara several times since then and we have not seen anything happening yet, but increasing press is covering the issue.

## Partners on the Ground

During the first week of March, we had an exciting opportunity to learn about payment for ecosystem services (PES) schemes already operating in the region by participating in an exchange visit with some of our partners. FIU personnel joined with the WWF teams from both Mara and Lake Naivasha to travel to the Uluguru Mountains in Eastern Tanzania. We visited a PES scheme being implemented by WWF-TZ and CARE-TZ, in partnership with the Wami-Ruvu Basin Water Office, which was started in 2006 and has been operational since 2009. The scheme targets the land degradation occurring in the upper catchment of the Wami-Ruvu River, where rotating cultivation on extremely steep slopes by small-scale farmers has led to large increases in sediment load in the river.

The project has been working with the farmers to implement soil conservation activities, such as terraces and agroforestry, in order to improve the quality of water going downstream, effectively making these farmers service providers to the industries downstream dependent on clean water. In turn, the project has worked with Dar es Salaam Water and Sewerage Corporation (DAWASCO) and Coca-Cola as service buyers, as they are both dependent on the water in the Wami-Ruvu Basin for their industries, and they both experience elevated water treatment costs with rising sediment loads. So far, this project has had great success in finding support from both sellers and buyers, and it gave us a lot of inspiration for our work in the Mara.



*Picture 3: Cultivation on steep slopes in the Uluguru Mountains, Tanzania.*



*Picture 4: Meeting with small-scale farmers participating in a Payment for Ecosystem Services scheme in the Wami-Ruvu River Basin.*

In mid-March, GLOWS sponsored a film-making crew to visit the basin and film some of the conservation activities being undertaken by FIU and WWF. Carl and Jason Kesser, from [Kesser Productions](#) traveled with us in the basin from 6-18 March, filming ongoing projects and interviewing stakeholders to help compile outreach and awareness raising material on our work in the Mara. You can learn more about their efforts to film this work and raise money to produce final products by visiting <http://www.maraRiverbasin.com/>.

During our travels with them through the basin, they filmed the source of the Mara River at Enyapuiyapui Swamp, interviewed members of the Mara River Water User’s Association, visited model farms and riparian protection activities in the upper catchment and filmed tourist lodges that have constructed wetlands to assist in the treatment of wastewater. One particularly exciting interview was with the Manager of Fig Tree Camp, who discussed the lodge’s decision to construct a wetland due to advocacy work by WWF on this issue. These wetlands not only help purify sewage water before it is returned to the environment, but they also limit long-term septic system costs paid by lodges, making it a win-win situation for everyone.



Picture 5: Carl Kesser interviewing Amanda Subalusky at the Ol Choro spring near Mulot.

### Other Interesting Happenings

In addition to our work in the Mara this month, there were a few other interesting activities worth noting. Chris graduated to senior level mechanic through extensive preventative maintenance he conducted on our vehicle, including installation of a new alternator, a second battery, a new fuel pump, a new y ejector for the coolant system, and two new tires (which came in handy last week when we got stuck in the Masai Mara!). You may have noticed that we haven’t had a “Land Rover breakdown story” to share in quite a while, and Chris’s diligent efforts are to thank for that.

We were also reminded of the need to always consider personal safety when someone tried to break in through the fence at our house while we were home catching up on computer work. Fortunately, we have a dedicated watchman who foiled his attempt, so we roasted a goat in his honor to celebrate in true Maasai fashion.

### See you next month!

As you can see, March was a tremendously busy and exciting month for research, conservation and governance in the Mara River Basin. However, it set the stage for more exciting work yet to come. In April, we will travel to Mugumu, Tanzania to visit our partner CARE-TZ for the TWB-MRB quarterly meeting, we will meet with the Chief Warden and the Lead Ecologist of Serengeti National Park about extending our sampling in to Tanzania, we will host three new PhD students whose research will focus in the Mara River Basin, and we will officially launch the EFA and BSAP reports. Stay tuned...!

<p><b>Who are we?</b>          Christopher Dutton is the Coordinator of the Trans-boundary 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 <a href="http://maraadventure.blogspot.com">http://maraadventure.blogspot.com</a></p>	<p><b>What is GLOWS?</b>          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 <a href="http://www.globalwaters.net">www.globalwaters.net</a></p>
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