

# Newsletter Wet Notes

www.pakistanwetlands.org

July 2008



The monthly newsletter of the Pakistan Wetlands Programme (PWP) is published to inform donors, scientists, academics, researchers, environmentalists and environmentally concerned individuals of all qualifications and ages about the Programme, its projects and upcoming events while giving insights and updates on research, education, and habitat management activities. The PWP's objective is to conserve the globally important wetlands biodiversity in Pakistan while alleviating poverty. It is a progressive initiative of the Federal Ministry of Environment and is being implemented by the World Wide Fund for Nature, Pakistan (WWF P). It is funded by a consortium of national and international donors including, the Global Environment Facility (GEF), United Nations Development Programme (UNDP), the Royal Netherlands Embassy (RNE), WWF Global Network and the Pakistan Poverty Alleviation Fund (PPAF).

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photograph of the beautiful Shandur lake.

## Shandur, the Place, the Festival!

The Shandur Plateau, where the Shandur Polo Festival is held each year between traditional rival polo teams of Chitral and Gilgit, is located at 3,700 meters elevation in the Chitral district at the border between the North West Frontier Province and the Northern Areas and is said to be the highest polo ground in the world.

The Shandur plateau stretches 10km down eastward to form Langer valley. Langer Shandur wetlands complex comprises of three high altitude lakes and is one of the largest wetland ecosystems in the Ghizer district of the Northern Areas. It lies at N 36° 04'

and 72°31' at an elevation ranging from 3,353 - 3,810 m above sea level. Langer valley has extensive peat bogs and perennial streams which originate from Khukush Lake and Shandur pass. All the lakes and peat bogs have been created by permanent streams while the valley remains entirely covered with snow during the winter season.

The polo match is played between different teams from Chitral and Gilgit every July. The game originated long ago in the high mountains of the Hindukush and Karakorum ranges. Now, among the horse loving people of Chitral,

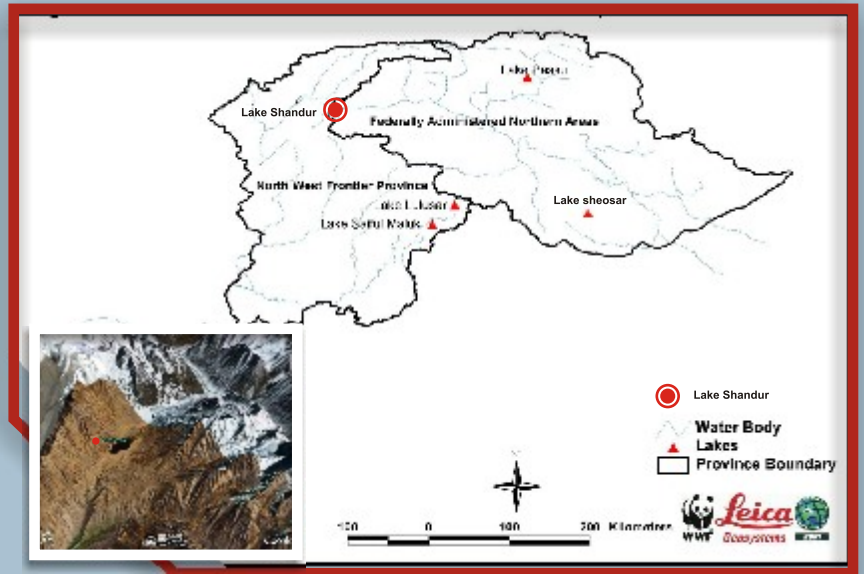
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Gilgit and Hunza, polo at the festival is still played in its original form, a game as tough, rough and hard, on man and horse as the surrounding terrain.

Since its inception in 1936 the polo festival has been, and continues to be, a boost for tourism in the area on one hand, but on the other hand by attracting a large crowd to a remote area there are problems as well. It has been estimated that as many as 10,000 people attend the event over the course of one week.



A map showing the location of Shandur Lake.

## Our reason to believe

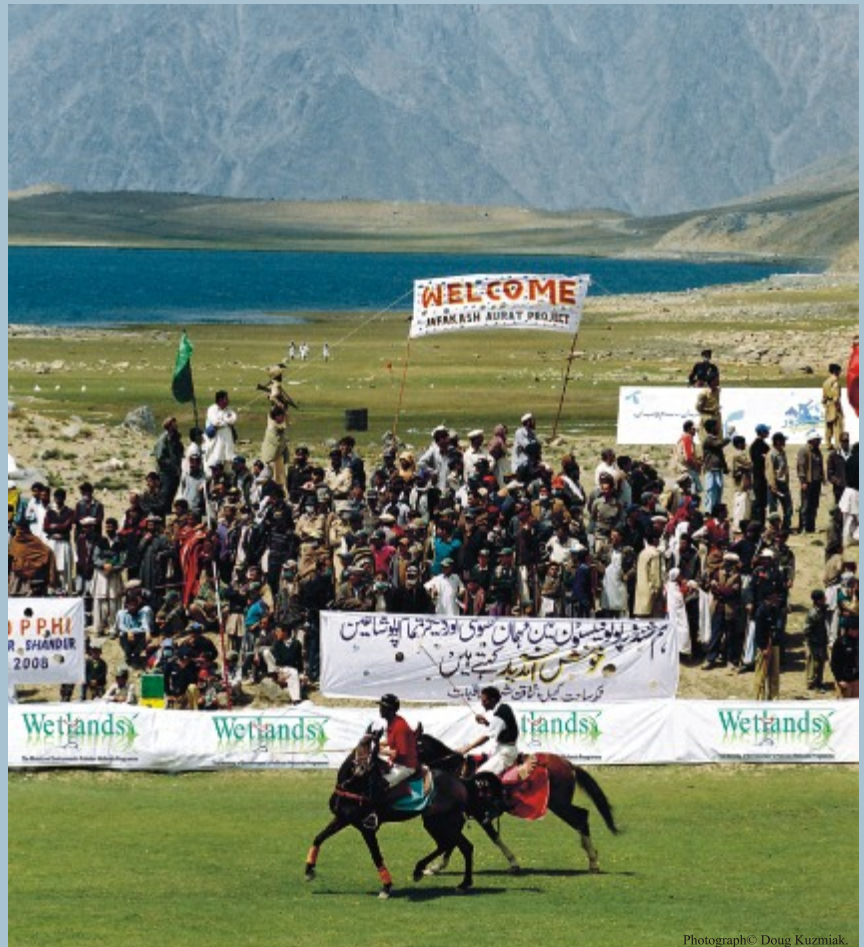
Lake Shandur is fragile and not as tough as people may think it might be. Research conducted in 2006 in conjunction with the Pakistan Wetland Programme (PWP) found that Shandur Lake and its surrounding areas were under serious stress.



Wetland's warrior setting-up dustbin in the bazar.

According to the research the environmental consequences of the Festival are becoming significant. These environmental issues have been caused by the absence of appropriate arrangements for the disposal of waste, washing of clothes and cars, along with the tossing of garbage into the lake and surrounding areas. This is becoming increasingly impossible for Shandur's environment to manage.

This polo tournament, turned a key earning opportunity and a boost for tourism in the area on one hand, but



Photograph © Doug Kuzniak.

On-going Polo match with Lake Shandur in background.

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bringing a large crowd for a period of about a week is other side of the coin. Human activities are also causing dense submerged vegetation and decay around the lake. Such an accumulation of vegetative matter can choke off the lake's waters, causing it to slowly become land over time.

The research found that the water and sanitation situation during the festival falls well below even the minimum standards for humanitarian emergencies. It is increasingly showing signs of high concentrations of phosphates and nitrogen contents in the waters from the detergents and other waste materials which flow into the lake from this one polo event. In addition the lake is losing its shoreline through earth which is being pushed into it by people, horses and vehicles.



One of the camp sites at the festival.

## Focus with Distinction...



David Johnson using the Hydro-lab for water sampling.

David Johnson, who received his M.Sc with distinction for his research work, that the annual polo festival has triggered "Cultural eutrophication" of the lake. This means an increasing nutrient and organic matter in the lake due to human activities during the Polo festival that degrades water quality of the lake. Basically we are poisoning the lake to a slow and miserable death. The Pakistan Wetlands Programme provided technical assistance to conduct this collaborative research among experts from WWF-Pakistan, Lahore College University and Oxford University. The research,

measured several physical, limnological and chemical variables before, during and after the Polo festival, to assess its impact on the lake. This showed that conductivity of the feeding streams remained high during and after the festival, probably as a result of waste decomposition in the channels. Turbidity, a measure of transparency of water, showed an increasing trend during the Polo festival, particularly on the spots near to active human activities such as market place and campsite on the plateau levels of Dissolved Oxygen and pH dropped significantly with

increasing human concentration around the lake and its feeding channels.

The nutrients, such as ammonia, nitrate and phosphorus were found to be slightly higher than 0.1 mg/l, showing that the lake is potentially at risk of eutrophication that may be caused by the human activities in the surrounding. In addition, dense submerged vegetation, occurrence of snail population, heavy growth of diatoms, and an algal bloom and decay around the zone where human activities were higher.

The research study reflected impacts of the Polo festival in the waters of the Shandur Lake, which is considered a part of the Shandur-Handrap National Park. To avert this risk and sustain the aesthetic value of the area for sustainable ecological and economic benefits, there is a need for managing the Polo festival on lines of minimum waste generation and disposal to the lake. Meanwhile, arising from David Johnson's report, another aspect that is of value would be the involvement of local communities.

## Technical Innovations ("Coolstuff") When Less is More: The Simplest is Coolest at the Shandur Polo Festival

It seemed like Mission Impossible: One item had to be both highly visible and light, strong, cool in the hot weather, unencumbering, identifiable and able to withstand repeated washings while the second item had to be light, strong, stable, having a high volume in a compact space, visually friendly and useable for years to come while the third item had to be super strong but soft and pliable, capable of being used on its own but also twinned.

Simplicity was the keynote. All items had to be found, made or fashioned and in a hurry and ideally they should be available in Pakistan, preferably of local manufacture and eminently user friendly.

The destination for all these items was to be the July 2008 Shandur Polo Festival and the "Save Shandur" initiative spearheaded by PWP. For the first time in the history of the festival a fully coordinated effort incorporating the integration of the Northern Areas Environmental Protection Agency, NWFP Wildlife Department, police, Chitral Scouts, Northern Area Scouts,



Wetlands warriors attending a briefing. community organisations and volunteers were brought together by PWP.

The objective was to put a dent into the mountain of solid waste which accumulates during the festival officially lasting three days but in reality covering almost a week in duration, and to raise consciousness for good environmental stewardship among festival goers through high visibility activities, and proactive public outreach plans. But the challenges remained. And the first one was quickly dispatched by none other than PWP's own Colonel (Retired) Mohammad Waseem, the programme's Man in Charge of Logistical Supplies and Support for all the varied and numerous surveys and expeditions conducted by the PWP.

When he learned that at a PWP,



PWP's Ahmed Said in the Shandur Bazar.

organisational meeting staffers organisational meeting staffers were grappling with the issue of a visible vest for the Wetland Warriors, he immediately suggested and organised highly durable, yellow/lime green cool weave vests with intensively reflective stripes manufactured by Control-All Textile Holding Company, Ltd. Although made of 100 per cent polyester the material would prove to nevertheless be very wearable even in the heat of Shandur, and were guaranteed to be washable 25 times. They were loose enough to provide unrestricted movement but could be held together in front with "Velcro" type fasteners.

The Islamabad Head Office of

PWP was able to organise the necessary quantity, about 200, and have both the PWP logo printed on the front with "Wetland Warrior" emblazoned across the back.

The vests proved to be both a talking point, means of identification and even coveted item at the polo festival and helped attract on-the-spot volunteers to the cause of Saving Shandur.



Volunteers celebrating after a hard day's work.

The next challenge facing PWP was to organise appropriate garbage "bins" into which the solid waste would be tossed especially in the "bazaar" area of the festival where sellers of all kinds set up their stalls and is one of the key areas of solid waste generation.

These bins had to be "visually" friendly, big enough to hold a substantial amount of material but not so big that they were obtrusive, light enough to be carried by one person if necessary, designed so that many could fit into the comparatively small space of a tow-able trailer, and aerodynamically stable.

Here the Northern Areas Environment Protection Agency NA-EPA came to the forefront. They concluded that plastic containers not unlike those used by climbing expeditions to carry food-stuffs could be adapted for the solid-waste collection needs. These bins had a wide enough

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Bags full of waste from the festival.

mouth so that things could be conveniently dropped in but not so wide that they could be easily blown out by the high winds of Shandur, widened out towards the middle, and narrowed again towards the bottom but not so much as to impair stability.

The high impact injection moulded plastic would withstand the rigours of the designated use and still be light enough to be lifted and carried, empty, by one person. And the sun-faded navy blue colour would make them blend in enough with the surroundings while still distinctive for the intended use. In addition a lid could be attached if necessary. The bins carried the *PWP*, *NA-EPA* and *Shandur LSO Teru* initials printed onto them.

In a goodwill move towards the "Save Shandur" initiative *NA-EPA* bought 30 of these bins from Gilgit and donated them to the cause. When the polo festival ended they were placed into the custody of participating "Save Shandur" Local Support Organisation *LSO* called *Shandur LSO Teru* for storage and use at next year's event.

The last "Cool Stuff" to be acquired were the liner bags which would go into the bins.

These had to be durable and not just tear-resistant but virtually tear proof. They would have to withstand an untold amount of abuse before being transported to the *NA-EPA* approved landfill site where the garbage bags were to be thrown in and buried. Tonnes of weight could be accumulated on top of each bag and they had to be rupture proof, as well as withstanding sharp objects which could, and would, be contained in them.

The answer proved to be a simple flour bag commercially available in Pakistan. Here again, a *PWP* staff member with local knowledge saved not just the day, but the initiative. In addition to being Manager National Programmes, Masood Arshad is also well versed in farming practices in and around his hometown of Sargodha.

At an organisational meeting he confidently asserted that the flour bags would meet and probably exceed expectations and further suggested that the *PWP* logo be printed on the bags so that they could be used, if necessary as 'stand alone' trash receptacles.

His foresight proved correct when during the polo matches themselves, the authorities

would not allow the plastic bins inside the grounds for security reasons but had no issues with the logo-printed flour bags. These helped to keep the area clean by providing easily accessible receptacles at the event itself and served to further spread the visibility of the Pakistan Wetlands Programme. The bags came from a *designing company (Design and design)* and were made from a tough, woven textured polyurethane. Additionally, 100 bags were also donated by *NA-EPA* which they acquired from the city of Gilgit.

Testimony to the durability of these bags became evident



The landfill used to dispose off the waste collected.

when it was found that 70 per cent of what was collected amounted to 2.9313 metric tonnes or 2,931.3 kg of non biodegradable material including glass, and none of the liner bags experienced serious damage.

Last, but not least, *PWP* organised more than 200 T-shirts with "Save Shandur" slogan splashed right across them. These shirts proved to be extremely popular and were not only demanded by all the volunteers and staffers of *PWP* but also by other people who visited the *PWP* camp. They also came in very handy as a goodwill present to the Northern Areas, Dir and Chitral Scouts who had helped *PWP* in various ways during the campaign.

By **Doug Kuzmiak**  
Special to the Pakistan Wetlands Programme

## Consultations with Partners prior to the Shandur Polo Festival, 2008

Following on from the extremely well received work of David Johnson, It had been decided that Pakistan Wetlands Programme would participate in awareness-raising regarding solid waste management and its impacts on Shandur wetlands during the Polo Festival, the NAWC Regional Operations Base, Gilgit initiated contact with various relevant stakeholders including local communities and



The trolley used for dumping the waste into the landfill.

administration, polo teams, Forest and Wildlife departments, Northern Areas Environmental Protection Agency, Tourism Department, Agha Khan Rural Support Programme and prominent academic institutions to forge partnerships for the activity.

The meetings resulted in effective joint action plan for the Greening of Shandur awareness campaign. Few examples include contribution of thirty dust bins with garbage bags for solid waste collection, technical input into the site selection and dimensions of a land fill for waste disposal.

The Chief Secretary lauded the decision made by PWP and directed the relevant departments to give all possible assistance to PWP during the festival.

Back in Gilgit, the PWP got in touch with the Conservator Forests, Northern Areas and requested him for four guards to operate the eco-check post to be established by PWP on the Northern Areas side of the Shandur Top. He responded right away by instructing the Ghizer Forest office to nominate four personnel for this purpose. During the course of planning the Chairman of Municipal Committee, Gahkuch, which is the administrative centre of Ghizer district, contacted PWP and offered tractor trolley for hauling garbage bags from the collection site to the landfill at Shandur.



Pre-visit by Dr. Humaira and officials from NA-EPA and Tourism Department.

Together the two offices of NAWC, with the assistance of Programme Management Unit of PWP managed to conduct a very successful awareness-raising and solid waste collection and disposal for Greening of Shandur campaign on quite a large scale at the Polo Festival 2008. PWP intends to organise such campaign every year with more meaningful and long term impacts.

By: Dr. Humaira Khan, NAWC Regional Operations Base, Gilgit

## Quotes from participants

An expert tour operator who has been coming to Shandur for over 25 years had to glanced across, "Look at it now," he said with an arm sweeping the western horizon. "You can hardly see the place for the dust and air pollution. And the lake can't flush itself clean. Trash goes everywhere. People don't realize how just a little impact can do a lot of damage." But he said that the event and the environment could co-exist if properly managed

Shah Hussain a member of the Shandur Local Support organisation in Teru spoke at length about the campaign. "Since the festival started, clean-up has been very limited. This was the first large scale clean up by Pakistan Wetlands Programme collecting over 4000 kg of waste, which is admirable, next year they should enlist more volunteers to pick garbage and circulate among the public for awareness messages this would make even bigger difference."

One foreigner volunteer to the save Shandur initiative expressed her delight with the way the clean up campaign was organized and the enthusiasm that had be encouraged by Pakistan Wetlands Programme

"When I came here I had no knowledge about this campaign, but when I arrived here to the event I was invited to volunteer with the clean up" the visitor from Britain described taking part in the campaign as way of repaying Pakistani's for the hospitality she had be shown by them.

## Greening of Shandur Campaign...

The PWP initiated the 'Greening of Shadur' Awareness-raising Campaign centered around Solid Waste Management procedures and conscious raising at the Shandur Polo Festival to implement recommendations of David Johnson's thesis.

The Pakistan Wetlands Programme acknowledges and appreciates the past efforts on the part of individuals, organisations and, of course, the Government of Pakistan to hold form waste management schemes applicable to the polo event. However, the PWP believed that now, for the first time there is an opportunity to pull all these groups together and act as a "single organism" to help ensure proper solid waste management practices.

During a preliminary, exploratory and feasibility meeting held on April 2<sup>nd</sup>, 2007, it was determined that with the proper activity matrix an initial attempt at this coordinated effort could be

attempted at this year's polo event at Shandur. Subsequent semi-informal discussions have apparently led us to believe that this first attempt is, indeed, possible, even given the now diminishing amount of time left to organise and motivate people.

We would also appreciate being able to make this first effort at comprehensive solid waste management at this event following on from the extremely well received work of David Johnson of Oxford University who last year conducted a detailed study of Shandur Lake and the effects on the water system resulting for impacts sustained during the one week event.



Collecting waste and putting it in the trolley.

organisations, NGOs, hotel owners, shopkeepers and general public were issued with large dustbins and canvas bags provided by the Northern Area Environmental Protection Agency. They were asked to dump the bio-degradable and non-degradable litter in these dustbins and bags separately for subsequent collection by the Wetlands Warriors.

The study was also designed to estimate the amount and types of solid waste collected and



Literature to save Shandur even catches the eye of an aam wallah

## Getting Your Hands Dirty



Dr. Humaira briefing volunteers in Shandur.

After carrying out preliminary planning pertaining to task assessment, resources required, and coordination among the partners, the volunteers were briefed about their areas of responsibility in the camp, collection of garbage and general conduct.

Following the slogan "Keep Shandur Clean" and 'Greening of Shandur', thirty Wetlands Warriors clad in their typical yellow jackets, comprising enthusiastic volunteers from

nearby villages set out to undertake the gigantic task of solid waste management in the Shandur lake and surrounding area.

Wave after wave of the Wetlands Warriors swept the entire area to clean it from garbage and litter, besides vigorous awareness raising campaign by the senior Wetlands team members to educate the general public and the organisations camping in the area. Government



Col. Mushtaq Rtd. briefing officers of Northern Areas.

## All is not Lost !



Wetlands warrior making themselves heard during the festival.

No one is advocating ending the Shandur Polo Festival. But the scientific evidence does exist to support the need for environmental sensitivity during the festival and after.

What is being advocated is the implementation of good and environmentally sound management practices by polo players, visitors, local communities, allowing the land and lake to be of benefit for future generations.

Simple management practices can make a difference. Some of the tried and tested methods for diverting such disasters are very basic and simple, such as: a comprehensive system for the collection and removal of refuse, the establishment of buffer zones around the lake and the provision of appropriate ablution facilities. Such good management practices also include the establishment of proper camp sites at an appropriate

distance from the lake and its streams. In addition, providing proper waste disposal points, adequate numbers of toilets and sanitary facilities, and restricting the washing of clothes, cars and animals in the lake will do a lot of good.

Understanding the problems and proactive action to correct and prevent these problems, will ensure a healthy environment for all. Everyone who has had the fortune of going there will tell its worth every penny, but once there you can play a role in saving Shandur too. When visiting the Festival or such sites please, Don't Litter, Don't Wash Cars In or Near the Lake, Don't do Laundry In or Near the Lake, Use Appropriate Ablution Locations, Use Appropriate Camping Sites, Take Responsibility for Your Own Trash (Take Out What YOU Took In).

## Environmental Impacts of the Festival

Because of the high altitude of the polo ground and surrounding lake, the summer growing season is short, and winters with accompanying snow accumulations are long. The land and lake have little or no time to recover from the impact of the festival. Snowmelt continues the shoreline eroding process begun during the polo tournament and the drainage from the lake via small, natural channels and streams does not drain the pollutants fast enough for Lake Shandur to recover. These pollutants, which travel through those natural watercourses from the lake and also in the vicinity of the lake,



Working late into the night to save Shandur.

have an adverse effect on the fish, wildlife, livestock and human populations further downstream.

All this shows that the lake is potentially at risk of eutrophication – a fancy scientific word for slow death --- that may be caused by those human activities connected with the Festival.

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