



# Working for Water

## E-News

Welcome to the *Working for Water* electronic newsletter. This publication is aimed at keeping staff and stakeholders informed on the progress made towards controlling invasive alien plants (IAPs), the challenges encountered during implementation and the achievements of *Working for Water* nationally.

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### E-News Water Edition

In this edition we focus on Water Month under the theme "Water is Life."

Approximately 7% of all water run off is lost to invasive alien plants. That's some 3,3 billion cubic metres of water in excess of that used by indigenous vegetation every year.

The *Working for Water* programme (*WfW*) is committed to eradicating poverty and conserving water by encouraging the removal of invasive alien plants and the planting of indigenous species. Most of these plants consume vast amounts of water.

By using cost effective methods of clearing and removal of invasive alien plants (IAP's) the *WfW* programme has managed to date to yield 34.4 million m<sup>3</sup>/yr which is about 42% of the yield of the new Berg River Scheme in the Western Cape (81 million m<sup>3</sup>).

We'll focus on how IAPs impact on our water resources and highlight the events held around the country to commemorate Water Month.

- E-News Team



The Eastern Cape Choir dominated the country with their harmonic mix of cultural and change songs.



DWAF Western Cape encouraged the employees gathered at Lord Charles in Somerset West, to embrace the change.



*WfW* National Office choir led by Isaiah Moyo, sings about making the change together.

## Change is Possible – Do It Now!

By Anelisa Zwelendaba

During the month of February, our Director-General Ms Pam Yako, introduced the DWAF Change Journey Strategy when she visited the Western Cape for this campaign. The purpose of this “Change Journey” was to create a new vision for DWAF and its staff.

Through the change journey process, the DG created a platform whereby she could communicate with all staff members in regards to the new vision and mandate with a committed common set of values as a department. These values speak to issues on Transparency, Respect, Excellence and Everyone (TREE). This new vision would create “A dynamic, people centered department, leading to the effective management of the nation’s water and forestry resources, to meet the needs of current and future generations”, said Ms Yako.

With the DG and other senior officials present, the staff had the opportunity to ask questions and raise concerns regarding this new Change Journey and how the DG was planning to achieve this. Ms Yako said that with the commitment of all staff members, change would be possible.

Ms Yako, called upon all staff to commit themselves to the change journey process by signing a pledge as a show of commitment to the TREE vision of building a better future for DWAF.

Change is inevitable, in order for any department to grow, change needs to happen because with change comes opportunity. However the only way to deal with change is to adapt and not resist what is changing. With the DGs vision of change, we as a department need to embrace change, “I am part of a changing DWAF and I like it”.



DWAF DG: Ms. Pam Yako shares in light-hearted moment before presenting her Change Journey Strategy



Joan Scott, who has been with WfW for ten years, signs the Pledge of Change.



Chief Director DWAF Western Cape: Rashid Khan and Director WFW: Mandisa Mangqalaza present Ms. Yako with gifts of appreciation.

## Aquatic weeds- A Threat to Water Security

By Leon Jamarie

Aquatic weeds are a serious threat to water resources nationally, costing the country millions of rands annually. These weeds invade major rivers, dams, lakes and irrigation canals.

Aquatic weeds are created from the run off water from human habitation and agricultural land which are eutrophic, creating the ideal conditions for undesirable aquatic weeds to flourish. A water system once cleared of aquatic weeds will inevitably be overrun by a fresh wave of aquatic invaders unless the water quality is properly managed at the same time.

Aquatic weeds pose significant environmental, economic and social problems. Floating aquatic weeds form dense mats which keep sunlight out, thus destroying the aquatic biodiversity; deoxygenates the water at night and when decaying blocks canals, pumps and turbines and increases siltation, thus aggravating floods. It restricts access for fishing, river transport and recreation, increases water loss by evapo-transpiration, causes cattle to drown and provides breeding sites for disease vectors such as mosquitoes and bilharzia-carrying snails. Two of the worst Aquatic weeds to be found in our water resources are Water Hyacinth (*Eichhornia crassipes*) and Hydrilla (*Hydrilla verticillata*).



Water hyacinth (pictured on left) is considered to be the most destructive aquatic weed and the no 1 invasive alien plant in the world. Indigenous to the Amazon Basin (South America), it was introduced to many parts of the world as an ornamental plant, and today occurs in more than 50 countries on five continents, where it invades waterways.

Water hyacinth infestations are associated with a variety of socio-economic and environmental impacts. Dense mats that block waterways inhibit boat traffic, and hence disrupt trade and recreational activities. It also clogs irrigation canals and pumps, and threatens hydro-electric power schemes. By impeding water flow and trapping particles in suspension it increases siltation of rivers and dams. The water hyacinth adversely affects the quality of drinking water, and poses a health risk. Furthermore it changes ecosystems and impacts on aquatic biodiversity.

The Vaal River is the largest tributary of the Orange River in South Africa and is the river most used and controlled by humans. The river has its source in the Drakensberg Mountains in Mpumalanga, east of Johannesburg, and flows southwest to its conjunction with the Orange River southwest of Kimberley in the Northern Cape.

The area supplied from the Vaal River System generates more than 50% of South Africa's gross geographical product (GGP), more than 80% of the country's electricity and includes some of the largest gold, platinum and coal mines in the world. The Vaal River System is therefore of great importance to South Africa and a key component of the water supply infrastructure for Gauteng and the surrounding provinces. As part of the Vaal-Hartz Scheme it is a major source of water for irrigation. Water drawn from the Vaal River supports 12 million consumers in Gauteng. The Vaal River System supports roughly half of the economic activity in South Africa (Water in South Africa: Rand Water).

The proliferation of Water hyacinth and other invasive aquatic plants on the Vaal River System in South Africa poses a huge threat to the ability of this system to meet the needs of the millions of people dependent on it.

Hydrilla (pictured on right) is a rooted submerged, perennial aquatic weed and it was the first submerged weed species to be targeted for bio-control in South Africa. A relatively new invasive aquatic weed to the country, it is thought that the Hydrilla may originate from the warmer parts of Asia. It is used as an ornamental plant in aquariums resulting in the aggressive weed spreading and infesting our waters. *Hydrilla verticillata* (hydrilla) is a major economic and environmental weed in the United States, with millions of US dollars spent annually on control measures.

The plant was discovered in Pongolapoort Dam in northern Kwa-Zulu Natal by Lesley Henderson (PPRI) in February 2006. The plant forms dense mats below the water surface, disturbing natural aquatic ecosystem functioning and out competing indigenous vegetation. Dense mats of the plants also interfere with recreational water-use and hinder irrigation, hydroelectric operations and commercial boat traffic. The plant is easily and readily spread between water bodies by fisherman, recreational boaters and water birds. It is estimated that the infestation covers approximately 600 ha of the bay area in the Pongolapoort Dam.



These weeds are being controlled by *Working for Water* using various methods such as manual or mechanical control, herbicide, water level manipulation and the most cost effective bio-control.

Sources: Invasive Aquatic Plants; Lesley Henderson and Carina J Cilliers  
Biological Control of *Hydrilla verticillata* in South Africa (G10809),  
Angela Bownes

## **Water is Life!**

By Anelisa Zwelendaba

During the month of March, the Department called upon all people living in South Africa to participate in the Water Week/ Month campaign, which was celebrated from 2- 8 March 2009.

The *Working for Water* Programme (*WfW*) hosted numerous events during the month of March on a national scale as it realizes the importance of educating the public about water issues.

The campaign calls on all people living in South Africa to maintain and improve the quality and quantity of freshwater available for current and future generations, hence the theme for this year's campaign "Water is Life: Securing the Nations needs across generations".

Water Week is celebrated by the department with the realization of the important role that water plays in our country. The department does not simply focus on raising awareness but also facing the challenges such as water scarcity, access to safe clean water, pollution on our rivers and the growing demand of water amongst few other issues.

With all the different events that *WfW* hosted during the month of March, awareness is raised and the department is working towards ensuring all South Africans have access to safe clean water by maintaining and improving the quality and quantity of water.

Water Month is a significant period on the departmental calendar and the public is made aware of the department's role in conserving water, therefore celebrations continued throughout the month with the 22 March 2009 being World Water Day. "Water is Life: Securing the Nations needs across generations", is something that all South Africans should be aware of especially in the month of March.

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### **Inauguration of the Berg River Project**

By Anelisa Zwelendaba and Leon Jamarie

The Berg Water Project in Franschhoek in the Cape was officially inaugurated by President Kgalema Motlanhle on 5 March 2009. The event formed part of Water Week activities.

The Berg Water Project (BWP) is the culmination of a 14 year strategic integrated planning process by the Department of Water Affairs and Forestry (DWAF) to identify appropriate measures to address the water shortage in the Western Cape.

The BWP is implemented by the Trans-Caledon Tunnel Authority (TCTA) and it is estimated the project will increase Cape Town's water supply to 523 million cubic metres per year.

The dam supplies an incremental historical firm yield to the Western Cape water system of 56 million cubic meters per annum.

The concrete-faced rock fill Berg river dam is built 250 metres above sea level; it lies in the upper reaches of the Berg River and consists of an embankment of rock mined from the basin with an impermeable 300mm thick concrete face on the upstream side. The dam wall is 70 metres high and 929 metres long.

Cabinet approved the construction of the R1.5 billion project in 2002 which comprises the Berg River Dam and the Supplement Scheme.

The Dam was opened with great fanfare as President Motlanhle, assisted by Western Cape Premier Lynn Brown and the Minister of water Affairs and Forestry, Mrs. Lindiwe Hendricks, opened the flood gates.

DWAF entered into a raw water supply agreement with the city of Cape Town in 2003.

"The Berg Water project is the first water resource development project in South Africa that is directly linked to water demand management", said Minister Hendricks. Minister added that she was particularly proud that this was the first large water resource infrastructure development project in the country which was designed, constructed and operated within the prescripts of the National Water Act.

"This dam is a symbol of National pride as it is the first to be completed in South Africa since the democratically elected government came to power in 1994", said Minister Hendricks.

It is also the first time special measures were applied in support of the strategic objectives of government to maximise the opportunities for employment of local communities.

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**President Kgalema Mothlante, Minister Hendricks and Western Cape Premier, Ms. Lynn Brown at the Inauguration of the Berg water Project.**



## Working for Water: Working on Fire

By Leon Jamarie

Large areas in the Western Cape were recently ravaged by wildfires costing the country and private landowners millions of rands in damages. Whilst these could not have been prevented, it is the intensity of the fires and its volatility that has created the most havoc.

*Working for Water's* sister programme *Working on Fire*, has done much in its efforts to control the infernos deploying its teams and calling in various reserves in order to save many community livelihoods. *WOF* through the FFA Group, have transformed veld and forest fire fighting to include disadvantaged groups, which includes women, in veld and forest fire fighting, supervision and management assigning experienced personnel to train, mentor and transfer skill to recruited fire fighters.

These blazes bore a striking resemblance to previous fires of 2007 in areas such as Mpumalanga, KwaZulu-Natal, Free State, Eastern Cape, Limpopo and Gauteng which would beg the question of whether the extent of the damage could have been accelerated by the invasive alien trees such as Pine and Port Jackson that are present in these areas.

According to the report published in *The environmental impacts of Invading Alien Plants in South Africa* (Van Wilken, Van Wyk, 1998), "The invasion of grasslands and shrublands by tall trees and shrubs increases the amount of plant material (commonly referred to as "fuel load") that can burn." In the report scientific studies were carried out in which it was established that "typical fuel loads in grass and shrublands are around 0.3 – 4 tonnes per hectare, while invaded sites have up to 10 times more fuel (10 – 25 tonnes per hectare)." It was concluded that the increased fuel loads lead to higher intensity fires and a range of detrimental effects, including physical damage to the soil, resulting in soil water repellency and increases erosion after fire.

Ecosystems in South Africa are normally quite resilient to regular burning, but with the decrease in the viability of the soil due to IAP infestations, IAPs are promoted over the germination of indigenous ones. The report further states: "the seeds of some IAPs such as the Port Jackson Willow (*Acacia saligna*) are able to tolerate the high soil temperatures associated with the intense fires, while the seeds of some indigenous fynbos species, such as *Podalyria calyptra*, are killed after brief exposure to this temperature. Intense fires will therefore favour recruitment for some IAPs by promoting their germination over that of indigenous species."

Do you part to help prevent these fires:

- Take every precaution to avoid fires being started.
- Veld should not be burned without permission. (Severe costs, both criminal and civil, are possible, should people break the law in this regard.) This also applies to the burning of rubbish.
- Cigarette butts should be extinguished in ashtrays/containers.
- Open fires for cooking and warming should not be left unattended. They should be carefully extinguished, when finished, and the ashes carefully disposed of.
- Be particularly careful about using fire to smoke out hives, to get honey as this can contribute to ½ of major causes of fires.
- Farmers, Traditional Leaders and other relevant land-users should join their local Fire Protection Associations, and get guidance on steps to be taken to prevent fires being started.

Sources: [www.workingonfire.org](http://www.workingonfire.org)



### Hamba Kahle Mza

Mzameleni Mkhwambi passed away after suffering complications during surgery.

The news has come as a shock to the *Working for Water* family who describe him as being "friendly, supportive, and funny, with a love for life and a passion for his chosen career".

Mza, as he was known, came to *Working for Water* as part of his experiential learning and was stationed in the Communications Unit, being a regular contributor to this Newsletter. For the short time Mza was here, he blessed those around him with his positive attitude. It was this same attitude and outlook on life which saw him survive his horrific vehicle accident last year.

"This is painful. What a waste of a young life", said Mandisa Mangqalaza, Director for WfW. She extends her condolences to his family.

Mza, you will be sorely missed. Hamba kahle.

Please forward contributions to

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For more information contact the *Working for Water* toll free information line on 0800-005-376

or visit our website [www.dwaf.gov.za/wfw/](http://www.dwaf.gov.za/wfw/) or send your queries to: [wfw@dwaf.gov.za](mailto:wfw@dwaf.gov.za)

To see pictures of invasive alien plants go to <http://www.agis.agric.za/wip/>