

ONRUS RIVER PALMIET WETLAND – RUIN TO RESTORATION

The 24 December 2018 fires that ravaged the Overstrand Municipality burned down into the Hemel-and-Aarde Valley on 11 January 2019 and found its way into the Onrus River Palmiet Wetland. This was no ordinary fire. After two weeks of intensive firefighting, the Overstrand Fire Department realised that this fire was burning underground, it was a sub-surface fire. The sub-surface fire smouldering in the dry, desiccated channels of peat wetland was a huge threat to surrounding farms and ecological infrastructure and if not contained it could have disastrous impacts on the affected environment.

Because of the combination of the underground fire and peat wetlands it was important to involve wetland and fire specialist. Dr Piet-Louis Grundling and his team from the DEA Wetlands Programme, Mr Martin Bolton and his team from the National Operations office at WonFire and a drone specialist, Mr Rob Erasmus from Enviro Wildfire, was approached to assist with the unconventional situation.

Dr Piet-Louis Grundling, Deputy Director: NRM Wetland Programmes explained that Palmiet wetlands are endemic to the coastal provinces of South Africa and palmiet peatlands (mires) are even more rare and unique in their distribution and globally significant as biodiversity hotspots, carbon sequestration, water filtration and stores. These wetlands buffers the impacts of floods and droughts alike.

He stated that Palmiet peatlands are generally associated with flat bottom valleys in the Cape Fold Mountains with the peat, characterised by a high sand content, underlain by rocks. Dr Piet-Louis visited the site and concluded that this palmiet peatland however was in an unchannelled valley-bottom HGM setting. It contained peat of more than 7.25 m thick, dominated by a lower thick sedge layer with a basal sand and not bedrock layer and that this palmiet peatland is therefore unlike other palmiet systems.

He stated that this combined Palmiet and older sedge-radicell peatland system in a seemingly V-shape valley bottom system, is very unique. He also stated that to his best knowledge (refer to many peat surveys across many Palmiet/peatland wetland systems but also from Prof, Fred Ellery's work) this is the first time that such a phenomena (both the 2 different layers of peat and V-shape Valley bottom) is found. It was clear due to the unique stature of this wetland that it urgently needed to be protected and the sub-surface fire contained. An immediate coordinated approach with various role-players was put in place.

The project needed to be split up in Phases with specific objectives to deal with each aspect separately.

A meeting was convened to put the following processes in place:

1. It was agreed that part 1 of the objective of Phase 1 would be to ensure that the fire is extinguished by implementing the specific WonFire techniques.
2. It was agreed that part 2 of the objective of Phase 1 would be to stabilize the head-cut erosion moving towards the pristine wetland.
3. It was agreed that the Phase 2: Rehabilitation Plan should be submitted to NRM as a Catchment to Coast Project and to include all the different aspects required for the restoration of the system. This would require further investigation and specialist input and would be a long-term objective for the Onrus River Peat Wetland System.

On 1 May 2019, Phase 1 of the project was executed and a Working on Fire team set up base camp at Camphill farm. It was envisaged that by using the unique SPIKE TOOL, developed by Martin Bolton WonFire specialist, which was successfully used on a peat fire in Indonesia, could also be used for the Onrus fire.

By using this SPIKE TOOL to penetrate the soil deep underground and in this way douse the fire with water from deep within, there would be a chance to contain and hopefully extinguish the sub-surface fire.

On the afternoon of 21 June 2019 the WonFire teams have officially declared their work on the site as completed. It took them 53 days to complete the task. The Overstrand Municipality's Environmental Section and Fire Department will be monitoring the Peat Wetland every morning to ensure that no visual re-ignition of the site is observed. This process will continue for the next month, until end July 2019.

The sub-surface peat wetland fire was a first for Hermanus and the SPIKE TOOL implementation a first for South Africa. We would love to share our success story with you.