

Fact Sheet

Natural Turfgrass Saves Lives- The Hurricane Katrina Experience

If you think the headline 'Turfgrass Saves Lives' is an overstatement, think again. Dr Jeff Beasley from the Louisiana State University spoke at the 2016 TPI Conference in Houston, Texas on this subject after Hurricane Katrina and its disastrous outcomes.

New Orleans was devastated by Hurricane Katrina in August 2005. Houston's floods are the result of pure rainfall, while New Orleans' floods were the consequence of faulty infrastructure—the infamous breaching of the levees. The catastrophic failure of levee banks along with the subsequent inundation of urban areas resulted in a death toll of 1,464. In order to prevent this tragedy from repeating itself, research was carried out on the best way to ensure structural integrity of over 3000 miles of levee banks in the New Orleans area when experiencing hurricane and/or flood conditions.

An analysis of why so many existing levee banks failed showed that it was the overflows experienced during severe hurricane and/or flood conditions that resulted in the erosion of the back side of the levee banks that caused these structures to fail. Various levee bank strengthening options, including concrete and turfgrass were trialled against each other. The sheer weight of concrete resulted in concrete levee structures sinking into the soft Louisiana ground, hence reducing their overall effectiveness

Initially based on a relatively small \$8,000 (USD) investment, turfgrass grown through turf reinforcement mat was shown to be effective erosion control agent and mechanism for stabilising and reinforcing levee banks.

More extensive research was then commissioned and conducted at the university of Colorado where it was found that Bermuda grass (known as Couch grass here in Australia) covered slopes, grown through turf reinforcement mat, could withstand more than 12 hours of constant, high velocity, flooding without sustaining any damage.

THE FOLLOW UP PROCESS:

As a result, 4.5 million yards³ or \$300 million (USD) worth of Bermuda grass sod (known as couch turf here in Australia) is being used to strengthen 3000 miles (4,8828,000 KL) of levee banks in the State of Louisiana. The turf is watered for at least 60 days after installation, to ensure good establishment, and an ongoing regime of fertility and pest management is also undertaken. New Orleans now has brand new US\$15 billion levees in place. New Orleans will be struck by hurricane and/or flood conditions again, but now turfgrass is hopefully there to save lives!

Here in Queensland we have had similar success with a landfill site in Far North Queensland Cairns.

The Portsmouth Landfill in tropical North Queensland (Cairns) is situated on a 20.12 hectare parcel of Crown land for which Cairns Regional Council (Council) is a trustee under the lease which expires on 31 August, 2062. The landfill has been operational since 1984 and received household and commercial waste until November, 2009.

On 7 February, 2009 an environmental incident (stormwater and leaching) occurred at the landfill site and all deliveries ceased. The incident required civil rectification works to allow time to source and apply earthen cover material

For More Read Shortcut: <https://www.qtpa.com.au/knowledge-base/case-study-natural-turfgrass-averts-environmental-disaster/>

For more information please contact Turf Queensland specific project.