

SPECIAL FOCUS: FOCUS ON THE USA

Thompson Pump participates in Everglades Restoration Project

The Florida Everglades, the largest remaining subtropical wilderness in the USA, is home to an innovative pumping solution intended to improve the flow of water throughout the endangered ecosystem. A public-private effort between the government and leading contractors and equipment suppliers, including Thompson Pump, is underway to redistribute the flow of water in a way that better balances human needs with the natural ecosystem. Lisa Blythe of Benedict Advertising provides the details.

For hundreds of years, the Florida Everglades was a vibrant and free-flowing ecosystem, providing clean water throughout the 10 300 km² (4000 square miles) that meandered between Lake Okeechobee and Florida Bay. Then torrential rainstorms and hurricanes caused flooding in the area that was beginning to support two-legged as well as four-legged creatures. The 1948 plan to improve flood control and water supply succeeded in satisfying most of the human

population, but did very little for the other animals and plants – including storks, alligators and panthers – that thrived in this unique subtropical wetland.

With 70% less water flowing through the struggling area, and water shortages a way of life, a new plan has been implemented to restore and preserve South Florida's natural ecosystem while enhancing water supplies and maintaining flood protection.

The restoration project

The Everglades Construction Project (ECP) comprises 12 separate construction projects between Lake Okeechobee and the Everglades, the foundation being six large construction wetlands, or stormwater treatment areas (STAs), totalling over 47 000 acres (190 km²). These STAs will use naturally occurring biological processes to reduce the levels of phosphorus that enter the Everglades to an interim goal of 50 parts per billion (ppb). In addition to the STAs, the ECP contains four hydropattern restoration projects that will improve the volume, timing and distribution of water entering the Everglades.

Modern Continental South, Inc, the pump station contractor for this project, has contracted with Thompson Pump to provide hydraulic submersible and rotary wellpoint pumps to dewater the area so pump station foundations can be installed. The effluent pump stations will aid the removal of phosphates by pumping water out of the treatment area to a canal, eventually making its way back into the Everglades.

"Modern Continental South used Thompson B" and 12" hydraulic submersible pumps in

Figure 1. Thompson's 6-inch vacuum-assisted pump is used to drain water from trenches so excavation can continue.



the first stage to rim ditch", explains Pat Kennedy of Thompson's West Palm Beach office. "A ditch was dug around the excavated area in order to lower the water table so we could prepare the area for the pump station."

The pump station will sit on a concrete slab foundation that is approximately the size of a football field. Because the pump station will sit 6 metres (20 feet) below groundwater level, a continuous dewatering process is required to keep the water table down. "Three of Thompson's HPU hydraulic submersible pumps have been set up 20 feet below the water table. The pumps are working 24 hours a day", says Kennedy. Modern Continental South also purchased two 8" Thompson rotary wellpoint pumps, which they have connected to a horizontal sock system to dewater the structure excavation. Thompson's hydraulic submersible pumps can process up to 1 480 000 litres (390 000 US gallons) of water per hour, while the rotary wellpoint pumps move up to 680 000 litres of water per hour.

The dependability of the Thompson brand is what led Modern Continental South to purchase Thompson pumps for this project. "We selected Thompson Pump to supply our equipment because they have the capacity and reliability to handle such a huge application", says John O'Brien, equipment manager for Modern Continental South. "The volume of water we are dealing with is tremendous. The fact that Thompson's pumps could re-prime themselves was a definite advantage in this situation." "We are very proud of Thompson Pump's involvement in any environmental project, especially one of this magnitude", says Bill Thompson, president of Thompson Pump & Manufacturing. "Our approach has always been to do much more than provide the physical product to a project, so working closely with the engineers and contractors on the Everglades Restoration has given us special satisfaction."



Figure 2. Large areas of land can be dewatered with a Thompson wellpoint system.

The result of the original Central and Southern Florida project to provide flood protection to South Florida in 1948 resulted in approximately 70% less water flowing through this struggling ecosystem. The water quality severely deteriorated, adversely affecting the plant and animal life that depends on the Everglades. Nearly 70 Everglades species that once thrived in this region are currently on the endangered species list. Water shortages and water restrictions are now a way of life in some parts of South Florida. The growing population is only adding to the problem. The area's 6 million residents are expected to become 8 million by 2010 and up to 15 million by 2050. Water supply demands are expected to grow from 4 billion litres of water per day to 7.5 billion by 2050.

While the Everglades will never return to its previous size, the

Restoration Plan developed by the US Army Corps of Engineers (ACOE) Jacksonville Engineer District and the South Florida Water Management District (SFWMD) is expected to restore and preserve South Florida's natural ecosystem, while enhancing water supplies and maintaining flood protection. Nearly 250 miles of existing levees and canals will be removed within the Everglades as part of the ECP in order to connect the natural areas and allow the water to flow more naturally and freely.

CONTACT

Thompson Pump & Manufacturing Co, Inc
4620 City Center Drive
Port Orange,
FL 32129,
USA.
Tel: +1-386-767-7310
Fax: +1-386-761-0362
E-mail: mtavakoli@thompsonpump.com
www.thompsonpump.com