

# Monroe County Canal Restoration Demonstration Projects



Sediment cores from Canal 29 revealed a highly decomposed medium void of vegetation, macro-algae, and typical marine organisms.



Below the surface, yellow colored water maintains anoxic conditions and elevated levels of hydrogen sulfide. Dissolved oxygen concentrations also routinely fail to meet FDEP standards at these lower depths.

Logistical limitations of canal backfilling:

- ▶ Limited space to stockpile backfill
- ▶ Limited access to the canal in highly developed residential areas
- ▶ High cost associated with fill and fill placement

## Restoration Technology: Backfilling

Canal 29 Sexton Cove, Key Largo, between Pigeon and Bunting Drives



**Canal backfilling** is being performed in order to decrease the depth of a canal to promote flushing and reduce/eliminate stratification. Prior studies (Kruczynski 1999) have indicated that approximately only the upper 6 feet of the canals will naturally flush in the shallow Keys near shore environment. The surveyed depth of canal 29 ranges from between 20 to 34 feet deep. The near shore waters were surveyed to be as shallow as 4 feet deep.



Moderate or even good visibility at the surface can mask hazardous conditions well below the surface.

**Backfilling** will work best in canals where there is sufficient energy, either from tidal fluctuations or wind force, to promote flushing at the canal mouth once the deep stagnant zones have been eliminated.

**The proposed restoration of Canal 29 is valued at \$1.36 million.**



Fill material obtained from commercial quarries on the mainland will be transported to the site via trucks across existing roadways.



Precision techniques utilized to place fill material into the canals will prevent impacts to Florida Keys National Marine Sanctuary waters.



The new canal bottom will provide a healthy environment for the establishment of a diverse benthic community.