



# Tampa Bay Update

Holly Greening, Director  
Tampa Bay Estuary Program  
July 2016



# *Tampa Bay in the 1970s*



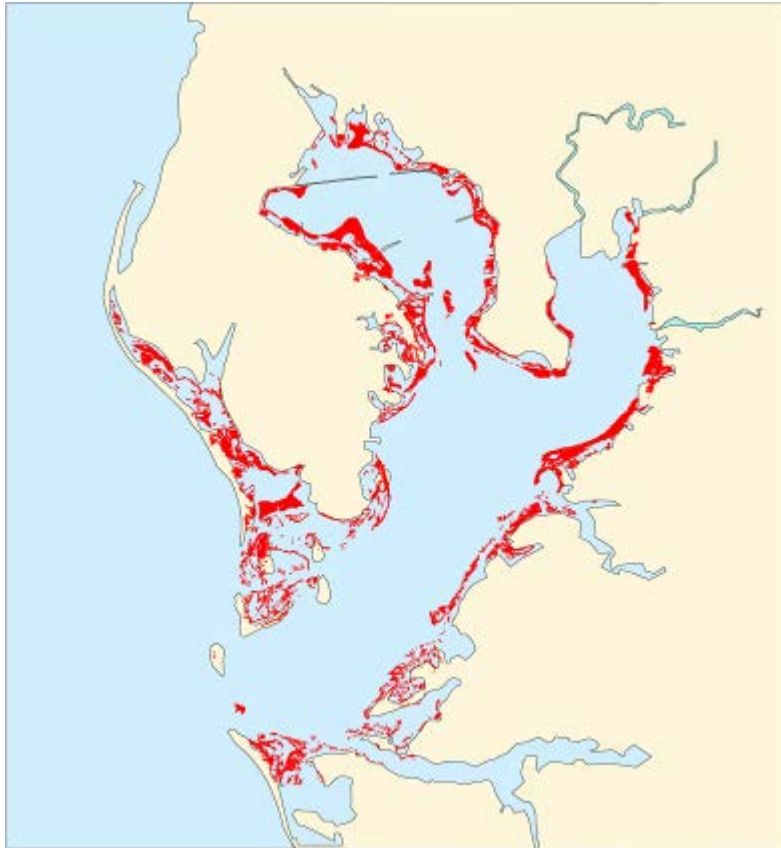
*Archie Creek*



*“The Kitchen” (Hillsborough Bay near Gibsonton)*

*Photo by JOR Johansson*

# *Tampa Bay Seagrass Restoration Goal*



Difference between 1950 and 1990  
seagrass cover

**Seagrass  
Restoration Goal:  
Restore seagrass  
acreage to that  
observed in ~1950.**



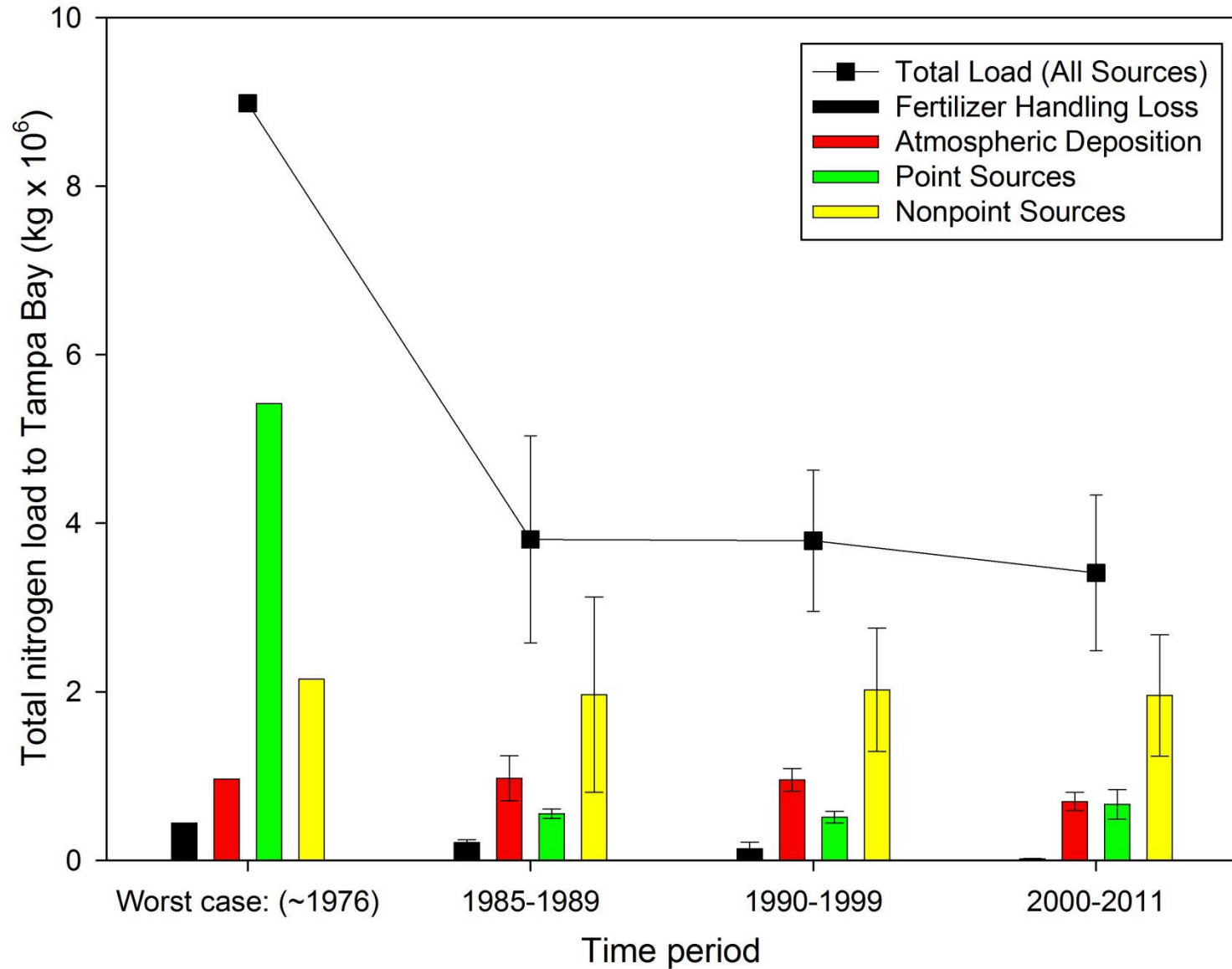


# Tampa Bay Nitrogen Management Consortium

- 45+ public and private partners throughout watershed- collaborative approach to meeting regulatory water quality goals (EPA-recognized TMDL).
- 500 projects and actions
- Pinellas County is an active participant- thank you!



# *Nitrogen load has decreased*



# Water quality has improved

Annual average chl-a concentration thresholds

Advanced wastewater treatment begins

Stormwater regulations enacted

TBEP formed

NMC formed



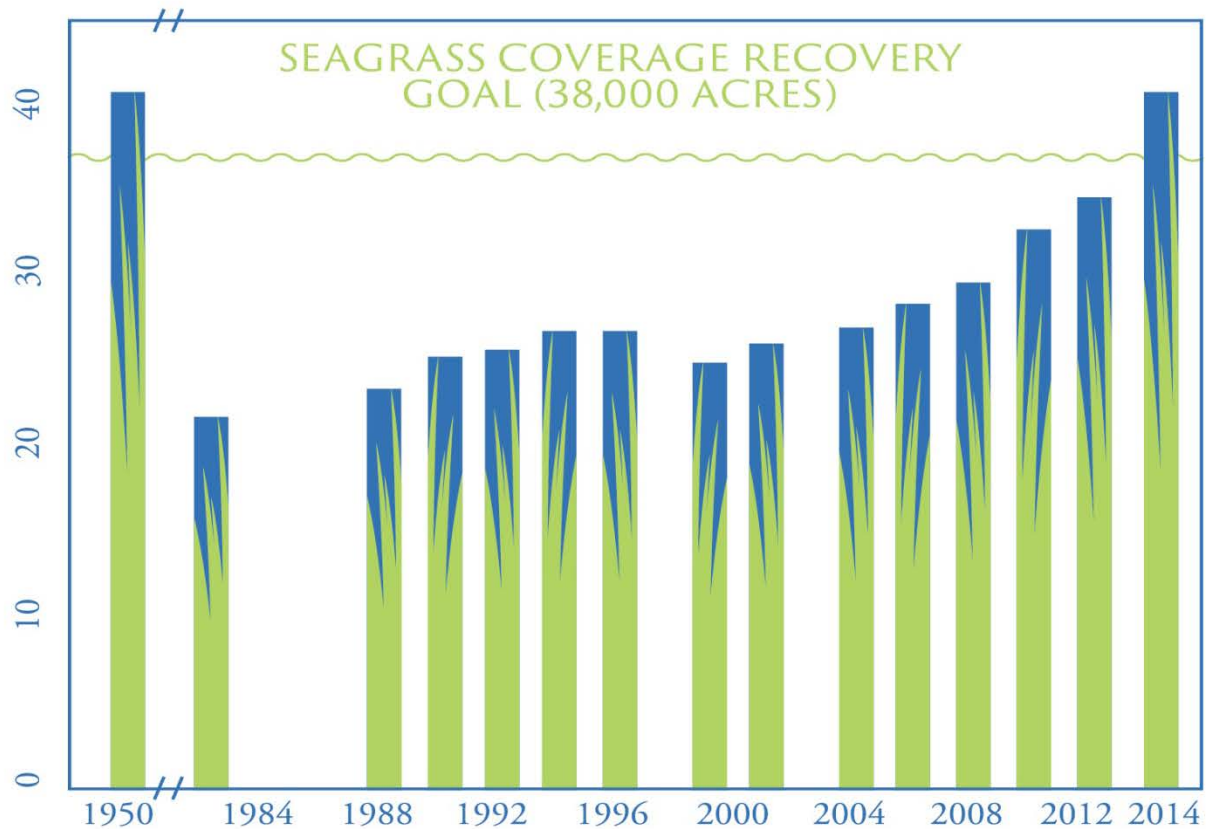
Photo by Bryan Chamberlin

| Year | Old Tampa Bay | Hillsborough Bay | Middle Tampa Bay | Lower Tampa Bay |
|------|---------------|------------------|------------------|-----------------|
| 1974 | No            | No               | No               | Yes             |
| 1975 | No            | No               | No               | Yes             |
| 1976 | No            | No               | No               | Yes             |
| 1977 | No            | No               | No               | No              |
| 1978 | No            | No               | No               | Yes             |
| 1979 | No            | No               | No               | No              |
| 1980 | No            | No               | No               | No              |
| 1981 | No            | No               | No               | No              |
| 1982 | No            | No               | No               | No              |
| 1983 | No            | No               | No               | No              |
| 1984 | Yes           | Yes              | No               | Yes             |
| 1985 | No            | No               | No               | Yes             |
| 1986 | No            | No               | Yes              | Yes             |
| 1987 | No            | Yes              | No               | Yes             |
| 1988 | Yes           | Yes              | Yes              | Yes             |
| 1989 | No            | Yes              | Yes              | Yes             |
| 1990 | No            | Yes              | Yes              | Yes             |
| 1991 | Yes           | Yes              | Yes              | Yes             |
| 1992 | Yes           | Yes              | Yes              | Yes             |
| 1993 | Yes           | Yes              | Yes              | Yes             |
| 1994 | No            | No               | No               | No              |
| 1995 | No            | No               | No               | Yes             |
| 1996 | Yes           | Yes              | Yes              | Yes             |
| 1997 | Yes           | Yes              | Yes              | Yes             |
| 1998 | No            | No               | No               | No              |
| 1999 | Yes           | Yes              | Yes              | Yes             |
| 2000 | Yes           | Yes              | Yes              | Yes             |
| 2001 | Yes           | Yes              | Yes              | Yes             |
| 2002 | Yes           | Yes              | Yes              | Yes             |
| 2003 | No            | Yes              | Yes              | Yes             |
| 2004 | No            | Yes              | Yes              | Yes             |
| 2005 | Yes           | Yes              | Yes              | No              |
| 2006 | Yes           | Yes              | Yes              | Yes             |
| 2007 | Yes           | Yes              | Yes              | Yes             |
| 2008 | Yes           | Yes              | Yes              | Yes             |
| 2009 | No            | Yes              | Yes              | Yes             |
| 2010 | Yes           | Yes              | Yes              | Yes             |
| 2011 | No            | Yes              | Yes              | Yes             |
| 2012 | Yes           | Yes              | Yes              | Yes             |
| 2013 | Yes           | Yes              | Yes              | Yes             |
| 2014 | Yes           | Yes              | Yes              | Yes             |
| 2015 | No            | Yes              | Yes              | Yes             |

Data source: EPCHC

# 2015- Seagrass Goal Met!

## SEAGRASS COVERAGE (x 1,000 ACRES)



Data: SWFWMD

# Old Tampa Bay Priority Issues

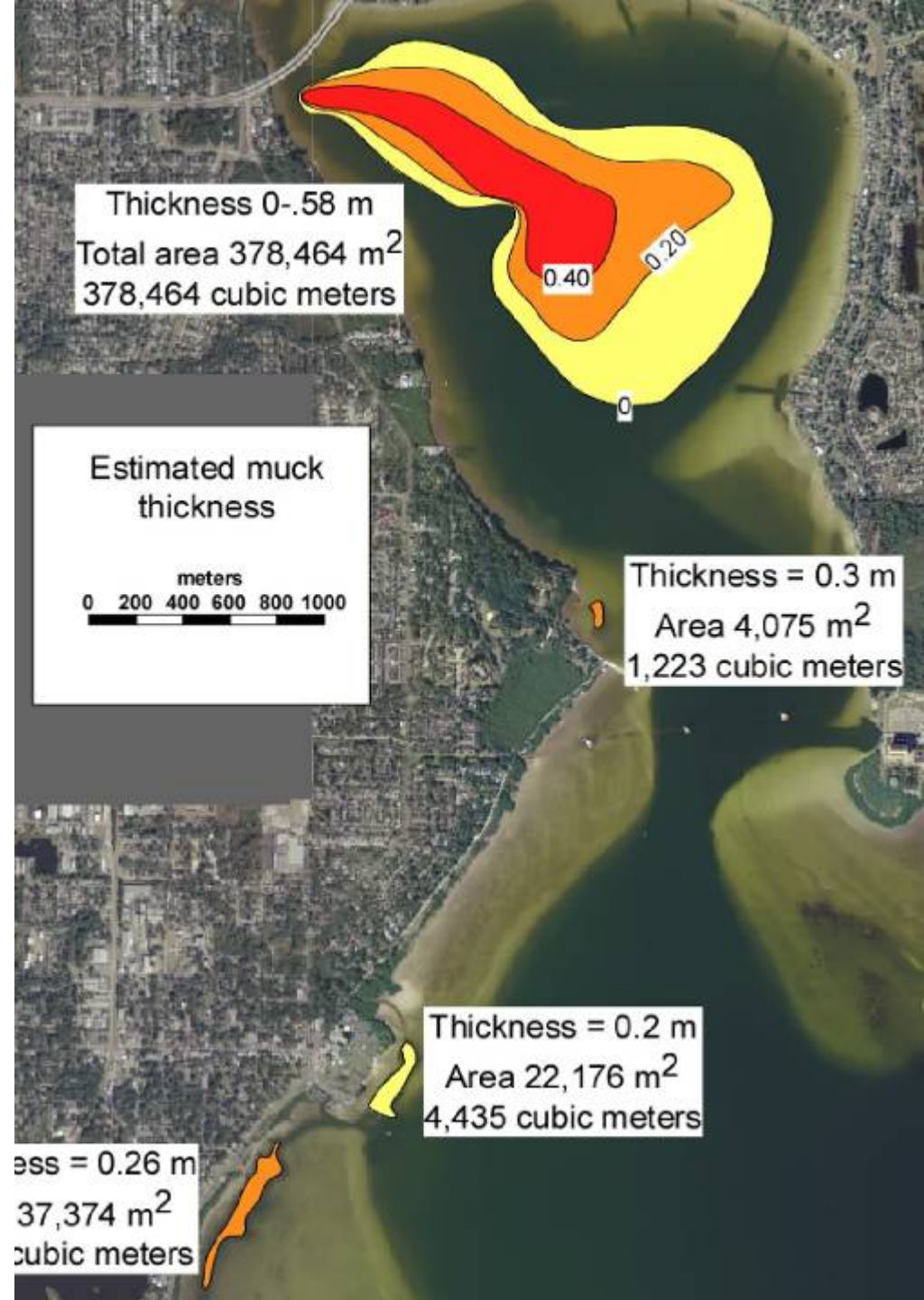
- Slower seagrass
- Periodic poor water quality
- Circulation and localized muck accumulation problems
- Significant algae (*Pyrodinium*) blooms in recent years





# 2010 Safety Harbor Muck Study\ USF

- “Muck” accumulating more rapidly in recent years;
- Remains of microscopic algae and small shrimp-like organisms living in the water column in Safety Harbor;
- Residential fertilizer is a primary N source in recent years.



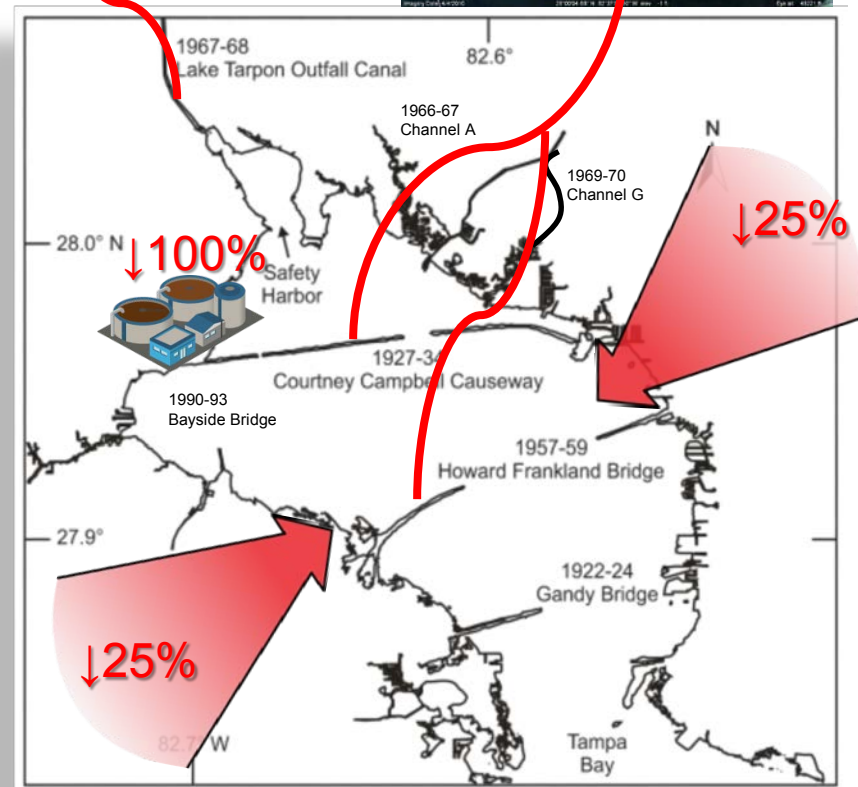
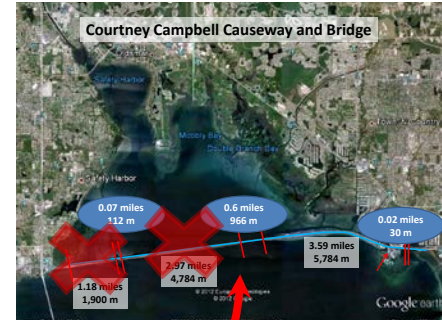
# ***Follow-up Action:*** **Integrated Ecosystem Model for the Old Tampa Bay Watershed**



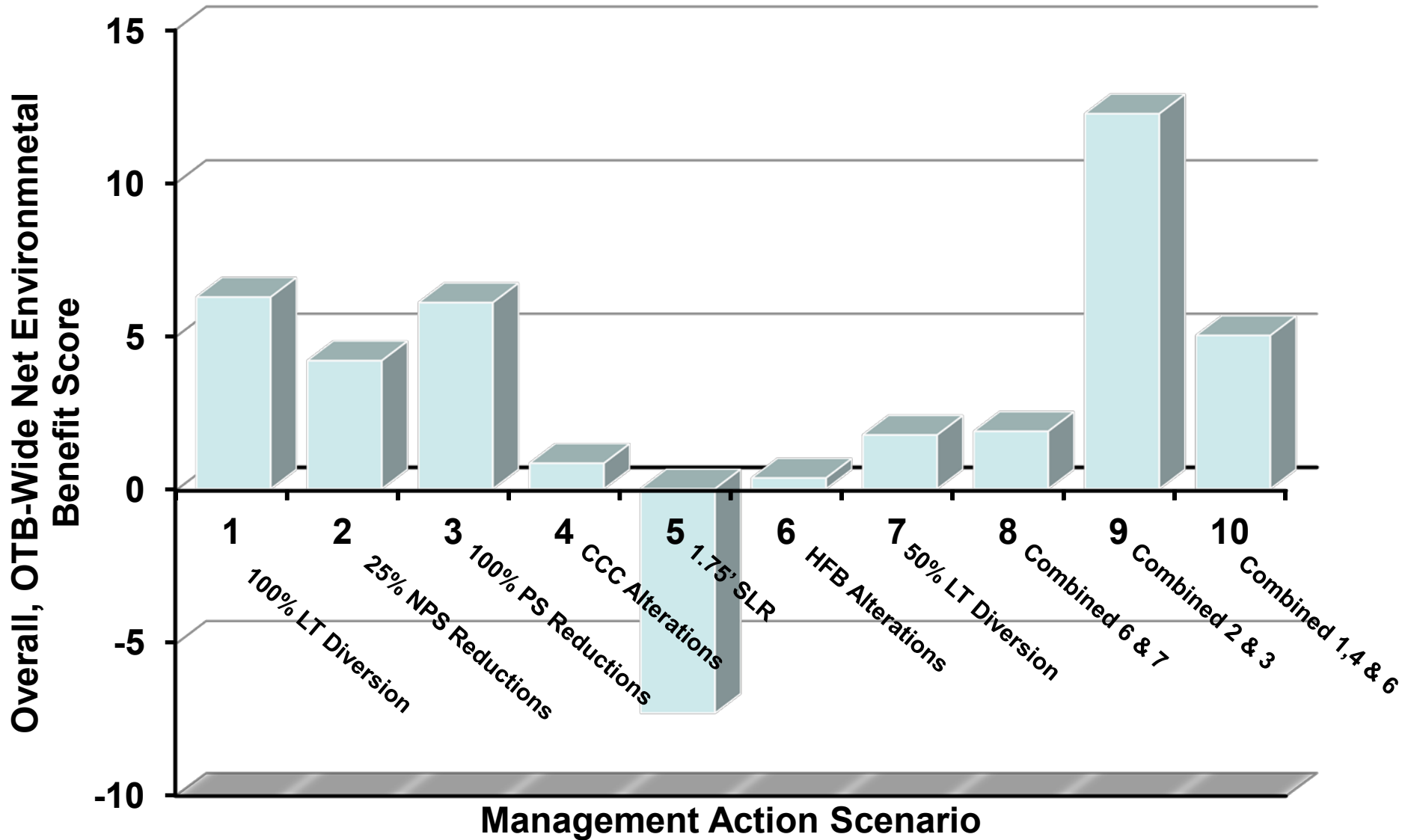
Ed Sherwood, Holly Greening, Lizanne Garcia, Kris Kaufman, Tony Janicki, Ray Pribble, Brett Cunningham, Steve Peene, Jim Fitzpatrick, Kellie Dixon, Mike Wessel

# Management Actions Evaluated

- Remove freshwater inputs from a historically disconnected watershed (Lake Tarpon Outfall Canal)
- Remove / redesign causeways interfering with circulation
- Reduce direct wastewater Loads by 100%
- Reduce OTB watershed non-point loads by 25%

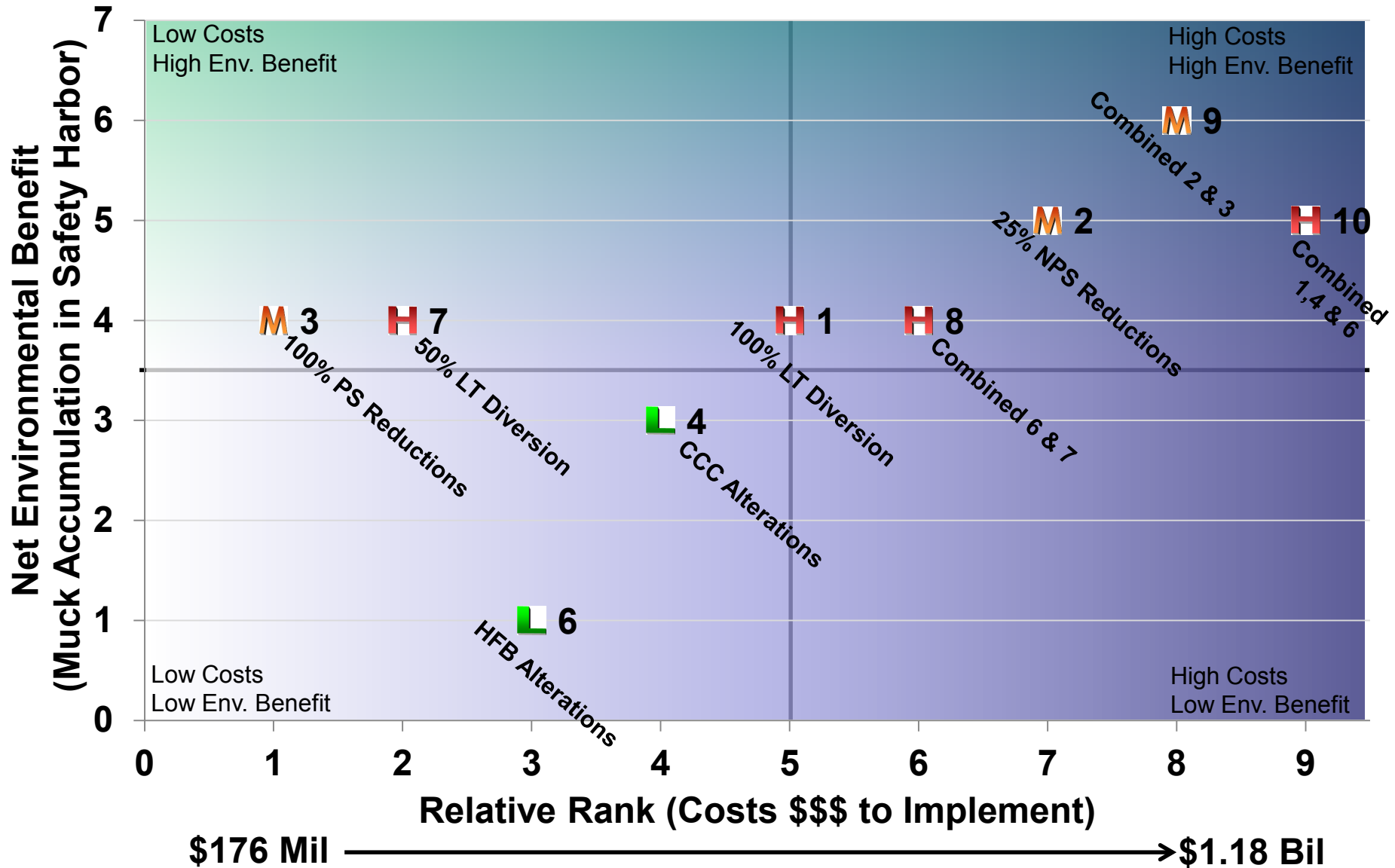


# Overall Net Environmental Benefit Analysis





# Consideration of Implementation Costs – Muck Accumulation in Upper OTB



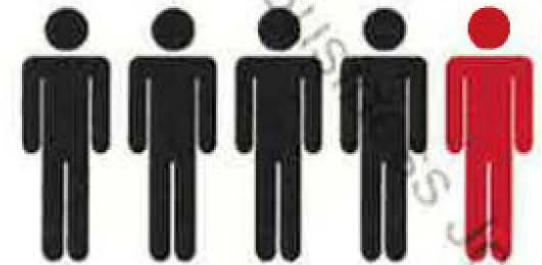
# *Integrated Evaluation Conclusions*

- **Stay the Course**
  - Combined nonpoint & point source reductions showed greatest overall ecological benefits, however at ↑ costs
- **Localized benefits to key issues**
  - Lake Tarpon diversions
  - Causeway alterations to some extent, but better when combined with other actions
- **Significant investments** will need to be made, but integrated model system will aid in determining the **cost-effectiveness** of future actions

COVER STORY

# CLEAN WATER MEANS MORE THAN YOU THINK

Despite massive growth, water quality in Tampa Bay has improved dramatically in 20 years



## HEALTHY BAY

1 out of every 5 jobs in the TBEP Watershed depend on a healthy bay.

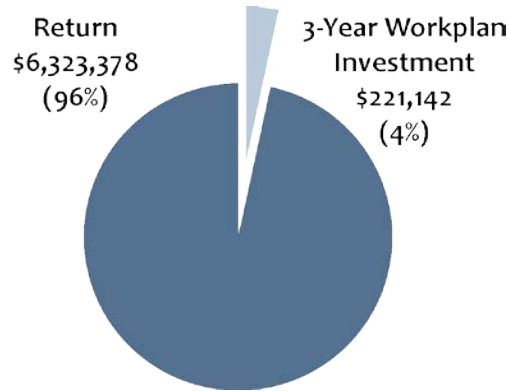
# \$22B

within all six counties

# 13%

of economy for all six counties

# *Pinellas County-TBEP 2015-2016 Highlights*



TBEP leverages \$29 for every \$1 contributed by Pinellas County to implement projects that benefit Tampa Bay.

TBEP RESTORE funds: \$271,000 to support Ft Desoto Bridge revegetation

TBEP MiniGrants supported more than \$83,000 in restoration or education in Pinellas County over the last 3 years

Volunteer WorkDays at 4 Pinellas County Parks

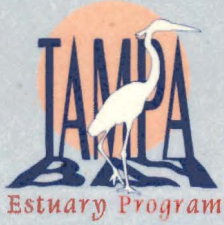


# *Thank you for your continued support of TBEP*



Holly Greening, TBEP Director    [hgreening@tbep.org](mailto:hgreening@tbep.org)





## Tampa Bay Estuary Program: A Partnership for a Healthy Bay



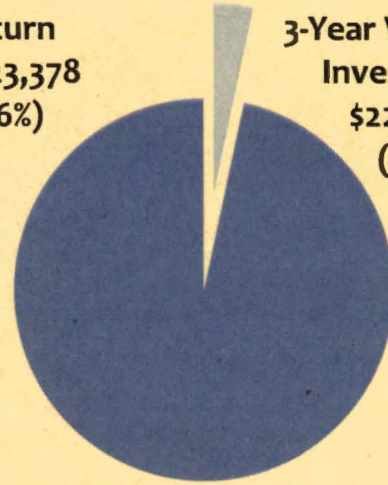
### *TBEP is a good return on your investment!*

For your annual base funding support of \$73,714 over the past 3 years, TBEP has leveraged more than **\$6.3 Million** in additional funding to implement projects that benefit Tampa Bay.

*TBEP leveraged \$29  
for every \$1 contributed by  
Pinellas County!*

Return  
\$6,323,378  
(96%)

3-Year Workplan  
Investment  
\$221,142  
(4%)



### *TBEP Highlights and Accomplishments for 2015*

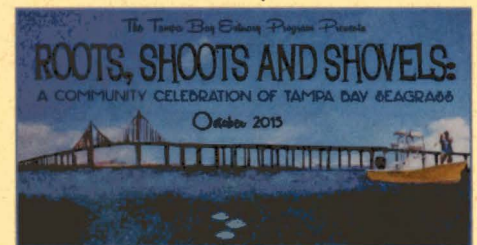
#### *Tampa Bay Exceeds Seagrass Goal!*

The lofty goal of restoring Tampa Bay seagrasses to levels not seen since 1950 has not only been achieved, but surpassed! Tampa Bay now harbors 40,295 acres of seagrass, outstripping the goal of 38,000 acres baywide set by TBEP in 1995. Survey results showed more than 5,000 new acres of seagrass since the 2012 estimate.

The seagrass gains were the result of public and private members of the Tampa Bay Nitrogen Management Consortium that have collectively invested more than \$500 million in projects

to reduce nitrogen pollution since the 1990s. Citizens have also done their part to improve stormwater quality through initiatives such as curbing fertilizer application during the summer.

Partners old and new gathered on October 16, 2015 at Picnic Island Park in Tampa to celebrate this milestone and ceremoniously plant seagrass in the shallow offshore area.





# Accomplishments in Pinellas County for 2015

## *BASIS 6 Highlights Research and Restoration in Tampa Bay*

The 6th Bay Area Scientific and Information Symposium was held in October at USF St. Petersburg, drawing nearly 200 participants, including more than 50 students. This conference, held every 5-7 years, highlights research, restoration and outreach efforts that expand knowledge and improve management of Tampa Bay. The conference theme of “Navigating Changing Tides” featured innovative ways to address new challenges with effective science and management. There was an enhanced effort to engage student researchers at local schools and universities and awards were given for outstanding student posters and presentations (winners shown above).



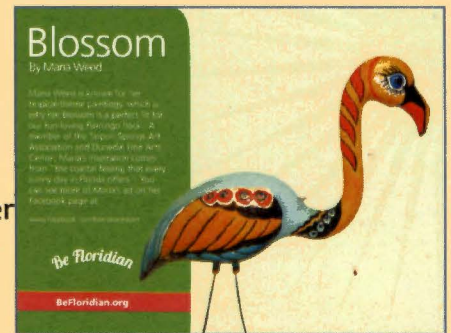
## *RESTORE Funds Bring Money to Priority Tampa Bay Projects*



TBEP facilitated the award of Deepwater Horizon oil spill fine money through the RESTORE Council to provide on-the-ground improvements in water quality or habitat. Each of the seven local TBEP Policy Board partners will be awarded \$271,430 to implement a high priority project. Pinellas County funds will support the Ft. DeSoto Ecological Enhancement Recirculation project to restore hydrologic flow and circulation between two backwater bays currently blocked by a land bridge. This will improve water quality conditions to support seagrass recovery. Native shoreline vegetation will also be planted.

## *Social Marketing and Grant Programs Benefit Pinellas County*

The Be Floridian fertilizer education campaign celebrated a successful fifth year. The “Art of Being Floridian” painted flamingo exhibit encouraged residents to skip summer fertilizer usage. The exhibit was seen by 350,000 people during its 15-month tour. Results of a residential stormwater evaluation showed Pinellas County residents were significantly more aware of fertilizer ordinances and when fertilizer should not be applied, and applied less fertilizer to their lawns.



Over the past three years, TBEP also engaged community members at Give a Day volunteer events at four Pinellas County parks and supported more than \$83,000 in restoration or education programs through the Mini Grants program.

*Thank you for your continued support of this proven partnership program!*

263 13th Ave S, Suite 350 • St. Petersburg, FL • 33701 • (727) 893-2765  
Executive Director: Holly Greening • hgreening@tbep.org • www.tbep.org



TBEP is a partnership of Hillsborough, Manatee and Pinellas counties; the cities of Clearwater, St. Petersburg and Tampa; the Southwest Florida Water Management District; the Florida Department of Environmental Protection and the US Environmental Protection Agency.