



CHARTING  
A COURSE

# IDENTIFYING & UPDATING REGIONAL RESEARCH PRIORITIES



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# TBEP Comprehensive Conservation & Management Plan Update

- 2015
- ✓ Bay Habitats
  - ✓ Fish and Wildlife/Invasive Species
  - ✓ Toxics and Public Health Actions
  - ✓ Dredging Action Plan
  - ✓ Spill Prevention
  - Wastewater Actions
  - Water & Sediment Quality
  - Public Education & Involvement
  - Public Access
  - Climate Change
  - Local Implementation
- 2017



## CHARTING *the* COURSE

THE COMPREHENSIVE CONSERVATION  
AND MANAGEMENT PLAN FOR TAMPA BAY  
MAY 2006

# Identifying Research Priorities

- 2006 CCMP Update Identified Research Priorities for Tampa Bay
- 2009-2011: TBEP TAC Updated List of Priorities Developed (Web-based Surveys)
  
- Led to current TBEP focused projects
  - Tidal Tributary Research
    - NNC Development / Salinity Barrier Removal Studies / Flow Monitoring
  - Focusing Compensatory Mitigation → Habitat Restoration Priorities
  - Habitat Restoration Opportunities in OTB Watershed
  - OTB Integrated Model Development
  - CCHA, SLR Vulnerability, Blue Carbon Projects

<http://www.tbep.tech.org/committees/tac/203-tac-priorities-progress-to-date>

# Current List (As of TAC Review thru 2011)

- A. Tidal Creek Research & Monitoring
- B. Improve Pollutant Loading Estimates
- C. FW Inflow Research & Assessments (MFLs)
- D. Climate Change Research
- E. Tampa Bay Estuary Nutrient TMDL
- F. Watershed Development Impacts
- G. TN TMDLs/BMAPs in the Watershed
- H. Habitat Quantity & Quality Assessments
- I. Ungaged Streamflow & Groundwater
- J. Improve Watershed & Bay WQ Modeling
- K. Coordinate Restoration Efforts
- L. Seagrass Recovery Problem Areas

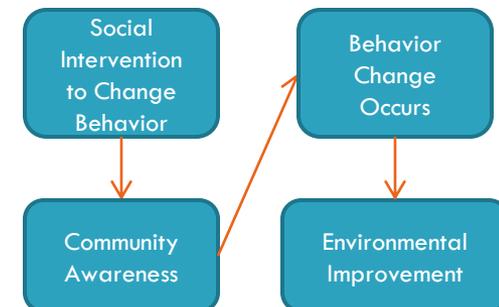
Higher  
Priority



Lower  
Priority

# Newer TAC Priorities (In no particular order!)

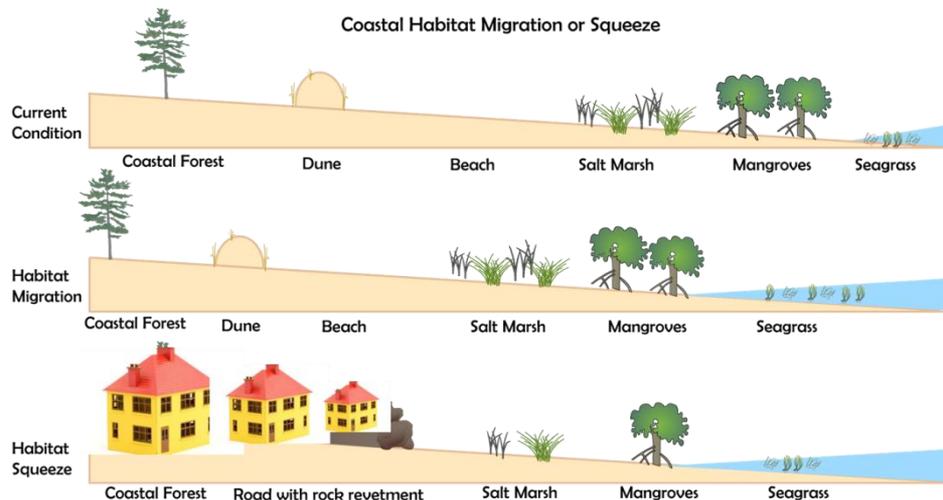
- Emerging Contaminant Concerns
  - ▣ PAHs (coal-tar based sealants), PPCPs, **Microplastics**, Herbicides
- Critical Coastal Habitat Status, Trends & Targets for Remaining Key Habitats
  - ▣ **Oysters**, **Hard/Live Bottom**, **Tidal Flats**, **Artificial Habitats**, **Tidal Creeks**, **Coastal Uplands**
- Cross-cutting Research & Management Plan Implementation
  - ▣ More integration of social/behavioral research
  - ▣ Restoration/mitigation for multiple/watershed benefits



# CCMP Update: New Research Needed

## □ Bay Habitats

- Re-evaluate “Restoring the Balance” paradigm in the context of continued Pop. Growth, climate change, & SLR
- Long-term monitoring for mitigation success
- Coastal development impacts to existing wetlands (function & quality)
- Habitat Restoration BMP Document



Schultz Preserve Before

Schultz Preserve After

Source: Hillsborough County, Aerial Innovations

# CCMP Update: New Research Needed

- Fish & Wildlife & Invasive Species
  - Bay scallop sustainable population
  - Explore other biotic indicators of habitat/water quality health
  - Early life history studies for important fishery & priority species (e.g. grouper, snapper)
  - Improved monitoring, detection & tracking for high-priority existing or potential invaders



# CCMP Update: New Research Needed

## □ Toxics & Public Health

- Focus on emerging rather than legacy chemical contaminants → Unknown impacts to GW/SW resources
- Sources and ecological effects of microplastics
- Better quantify fecal contamination sources & expand monitoring locations
- Direct microbial pathogen research

### Occurrence of contaminants of emerging concern along the California coast (2009-10) using passive sampling devices

David Alvarez<sup>1</sup>, Keith A. Maruya<sup>2</sup>, Nathan G. Dodder<sup>1</sup>, Wenjun Luo<sup>1</sup>, Edward Furlong<sup>1</sup> and Kelly Smalling<sup>1</sup>

#### ABSTRACT

Three passive sampling devices (PSDs), polar organic chemical integrative samplers (POCIS), polyethylene devices (PEDs), and solid-phase microextraction (SPME) samplers were used to sample a diverse set of chemicals in the coastal waters of San Francisco Bay and the Southern California Bight. Seventy-one chemicals (including fragrances, phosphate flame retardants, pharmaceuticals, PAHs, PCBs, PBDEs, and pesticides) were measured in at least 50% of the sites. The chemical profile from the San Francisco Bay sites was distinct from profiles from the sites in the Southern California Bight. This distinction was not due to a single compound or class, but by the relative abundances/concentrations of the chemicals. Comparing the PSDs to mussel (*Mytilus spp.*) tissues, a positive correlation exists for the 25 and 36 chemicals in common for the PEDs and SPME, respectively. Diphenylamine was the only common chemical out of 40 analyzed in both POCIS and tissues detected at a common site.

to characterize spatial and temporal trends of contaminants in the coastal areas of the United States. Bivalves can be a useful sentinel species for contaminant monitoring programs as they remain in fixed locations and are good accumulators of persistent, bioaccumulative, and toxic (PBT) organics. This long-term monitoring program has shown that levels of the banned or restricted chlorinated organics such as polychlorinated biphenyls (PCBs) and organochlorine pesticides have decreased compared to historical values (Kimbrough *et al.* 2008).

With the levels of many PBTs decreasing, the research focus is beginning to shift to "contaminants of emerging concern" (or CECs). CECs is a term encompassing a broad range of chemicals not traditionally part of monitoring studies such as pharmaceuticals, fragrances, flame retardants, and current-use pesticides. These CECs sometimes lack the persistence of traditional chlorinated organics, but due to their continual input into the environment from industrial, agricultural, and urban sources, they maintain a pseudo-persistence (Daughton and Ternes



**GET THE SCOOP ON POOP**  
Clean Parks, Clean Water, Clean Paws, Clean Shoes

**Did You Know?**

- ▶ Dog poop can transmit disease to other dogs and to humans.
- ▶ One ounce of dog feces contains about 23 million microorganisms of bacteria.
- ▶ Leaving it on the ground can spread *Salmonella*, E. coli, roundworms, hookworms and more to children & adults who share the grass.
- ▶ Unscopped dog poop washes off into waterways and provides nutrients (pollutants) that may cause algae blooms and fish kills. Stormwater runoff may become your drinking water.
- ▶ Approximately 95% of the fecal coliform found in urban stormwater was nonhuman in origin. Pet waste contributes between 20 to 30% of water pollution in America.
- ▶ Four in ten U.S. households have at least one dog. Pinellas County has approximately 185,000 dogs.
- ▶ Each dog creates between 1/3 to 3/4 pound of excrement per day.
- ▶ Pinellas County dogs generate between 31 and 69 tons of poop per day.
- ▶ Roughly 40% of Americans do not pick up their dog feces. In Pinellas this means 12 - 28 tons of poop per day is left unscopped.

**What Can You Do To Help?**  
Please clean up after your pet and place waste in a trash receptacle.

Pinellas County  
The Official County of Pinellas  
FLORIDA  
The Official State of Florida

# Others: ABM Input?

- Nutrient sources in stormwater runoff / Effectiveness of ordinance implementation
- Other F&W metrics of habitat estuarine health: entire estuarine community (benthos/macrobenthos)
- Short-term and long-term CC/SLR impact planning

# Web Survey

- Coming this Summer!
  
- Email Ed Sherwood ([esherwood@tbep.org](mailto:esherwood@tbep.org))
  - Participate in future TAC/ABM discussions
  - Participate in Web Surveys to Prioritize Research Needs