

MOVING FROM CHARACTERIZATION TO IMPLEMENTATION: STRATEGIES TO REDUCE WATERSHED-LEVEL NITROGEN LOADING IN SOUTHWEST FLORIDA ESTUARIES WITH APPLICATIONS TO NEW JERSEY COASTAL BAYS

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At first glance, one might not expect to find too many similarities between estuaries in Southwest Florida and estuaries in New Jersey. Southwest Florida's climate is distinctly subtropical, with warm, wet summers and mild, dry winters. New Jersey's climate is cold temperate, with freezing temperatures, snow and ice as regular features of the winter season. In addition, the major "industry" in Southwest Florida is tourism, while New Jersey is home to some of the largest petrochemical and industrial facilities in the country. Upon closer examination, however, the issues faced by resource managers in Barnegat Bay are not unlike those in Southwest Florida. As in Southwest Florida, the population in Barnegat Bay's watershed has grown rapidly in the post World War II time period. And unlike much of northeastern New Jersey, the Barnegat Bay watershed is not heavily developed for industrial purposes. This paper will briefly describe the similarities and differences between land use patterns, pollutant load estimates, and pollutant yield estimates for Barnegat Bay, in comparison with the Southwest Florida estuaries of Tampa Bay, Sarasota Bay, Lemon Bay, and Charlotte Harbor.

Management Implications for Barnegat Bay, New Jersey

- Both Barnegat Bay and most estuaries in Southwest Florida have experienced water quality and habitat degradation over the past few decades
- At present, nonpoint source loads are the primary sources of nitrogen loads into Barnegat Bay and Southwest Florida estuaries
- If point source nitrogen loads are appropriately reduced, watershed-level nonpoint source nitrogen loads can be predicted, based upon the degree of urbanization of the individual watershed
- Based on these relationships, specific numeric goals can be developed for "holding the line" on nonpoint source nitrogen loads
- With adequate monitoring data, sub basins within watersheds can be prioritized for their area-specific nitrogen loads
- By targeting priority sub basins, priority projects for stormwater retrofits can be developed to implement a "hold the line" strategy for nonpoint source nitrogen load management
