

1.2 SURFACE WATER QUALITY IN THE COASTAL ZONE

Water quality in the State's tidal streams, bays, and estuaries is influenced by the quality and volume of freshwater inflow, which is critical for maintaining the fragile balance of water chemistry that marine species and coastal ecosystems depend on (TPWD 2014). Freshwater inflow to our coastal waters is provided by streams, rivers, groundwater, and stormwater runoff.

Water quality throughout the Texas coastal zone management boundary (CZMB) varies widely from pristine, high quality waters to those that do not meet water quality standards established by the Texas Commission on Environmental Quality (TCEQ). These water quality problems stem from a wide array of pollutants associated with “point sources” and “nonpoint sources” of pollution within coastal watersheds. Point sources of pollution originate from a single point or a discrete pipe such as a municipal wastewater treatment plant. Nonpoint sources of pollution (NPS) originate from diffuse sources primarily associated with stormwater runoff. Protecting water quality will require ongoing commitments from developers, businesses, homeowners, landowners, drainage districts, as well as and municipal, county, and regional governments. NPS associated with stormwater runoff from new development is the sole focus of the recommendations and strategies described in this guidance document.

Texas has approximately 2,400 square miles of estuaries, and approximately 3,900 square miles of the Gulf of Mexico are within the jurisdiction of the State of Texas (TCEQ 2000). There are approximately 2,400 miles of tidally influenced streams along the Texas coastline, which stretches 624 miles from the Sabine River to the Rio Grande.

Waterbodies in Texas have specific water quality standards, set by TCEQ and approved by the U.S. Environmental Protection Agency (USEPA), which must be met. These standards serve as goals to protect water quality for a wide variety of uses, including drinking water, industrial use, agriculture irrigation, swimming, and protection of aquatic species.

Waterbodies that do not meet water quality standards are included on a list of impaired waterbodies, in accordance with Section 303(d) of the Clean Water Act. This list provides information about management activities, such as total maximum daily load (TMDL), on that waterbody to address an impairment and lists the pollutant(s) of concern.

Typical pollutants transported in stormwater runoff from new development include metals, bacteria, sediment, organic matter, and nutrients. Design solutions used to mitigate pollutants and manage volumes of stormwater runoff are called Best Management Practices (BMPs). Best management practices are further described in Chapter 4.



Figure 1-2: Texas coastal wetlands. (Photo courtesy of TPWD)