This Environmental Indicators Report presents six questions of interest to the community designed to reveal the state of our bays and estuaries. Answers to these questions are found through reviewing indicator data that addresses underlying conditions and points to trends. We looked at indicators that are specific, measurable markers that help assess the condition of the environment and how it changes over time. Both sharp changes and general trends in the values of those markers can indicate improved or worsening environmental health.

This report serves as an environmental report card to provide information on the health of the estuary and help improve plans for the future. With a focus on our program's goals and priority issues, we reviewed data to determine the status and trends of these issues. Using environmental indicators, we are able to tell if conditions are stable, improving or declining. Continued evaluation of the data helps further define ecological conditions and changes resulting from individual restoration activities and quantifying changes which occur on an ecosystem level.

The data presented within this report portrays a complex picture of the environmental quality of the Coastal Bend Bays and Estuaries Program area. Generally, the health of the estuary is good. Most recreationally and ecologically important fish populations are increasing. Seagrass and saltwater marsh habitat is increasing. However, there is room for improvement. Several shellfish harvesting areas are restricted throughout the Coastal Bend. A small number of our water bodies are on the state's list for impaired water quality. Of concern, blue crab populations are declining. The CBBEP and its state, federal, and local partners will continue to work toward improving the health of our estuaries. Monitoring programs need to be continued, and new monitoring programs implemented, to better track the changes in our area.

How to Read the Indicator Bar

Good

Each indicator has an orange to blue status and trend bar used to show at a glance whether the indicator data is showing a positive (healthy) or negative state. If the dot is to the left of center, in the orange, the indicator data is generally negative. If it is to the right, in the blue, it is generally positive. If the dot is in the center, the data indicates a fair state. Arrows indicate the direction of any trends the data reveals. The length of the arrow reveals the rate of change, either positive or negative, in the direction of the arrow. If there is no arrow, this indicates a neutral trend or an unknown trend. These graphics are based on CBBEP's interpretation of the data.

Focus Question 1:
Is it safe for people to come into contact with bay water?

INDICATOR #1: Fecal bacteria levels.
Condition/Trend: Good/Stable

Good

Under the Texas Beach Watch Program, many of our area's public beaches are monitored for bacteria. The beaches are generally safe for swimming. One exception is after a storm event when rain water washes pollutants into bay waters.

INDICATOR #2: Vibrio concerns.
Condition/Trend: Good/Stable

Good

Vibrio vulnificus infections have been reported along the Gulf Coast for many years. With proper precautions, such as limiting exposure with open cuts, the risk of infection is low in healthy individuals.

Focus Question 2:
Is it safe to eat seafood caught in area bays?

INDICATOR #3: Seafood tissue monitoring data.
Condition/Trend: Good/Improving

Good

Overall levels of fish tissue contaminants in the Coastal Bend region are low and the consumption of fish is safe as long as consumption rates of certain fish follow the Texas Department of State Health Services guidelines.

INDICATOR #4: Seafood consumption advisories.
Condition/Trend: Good/Stable

Good

The Coastal Bend has only one fish consumption advisory for king mackerel. It is recommended that king mackerel not be eaten if greater than 43 inches in length due to high levels of mercury.

INDICATOR #5: Shellfish harvesting areas.
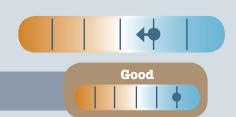Condition/Trend: Good/Degrading

Improvement Needed

There are several areas throughout the Coastal Bend that are restricted shellfish (oysters, clams) harvesting areas. Restricted areas are determined based on risk levels associated with fecal pollution, contaminants, or human pathogens.

Focus Question 3:
Is water and sediment quality improving or declining?

INDICATOR #6: Water Quality Standards.
Condition/Trend: Good/Stable

Good

Although there are a couple of areas that experience low dissolved oxygen and several contaminants are above screening levels distributed in certain areas of the Coastal Bend, the waters of the bays and estuaries are considered clean.

INDICATOR #7: Number of impaired segments (303d list).
   Condition/Trend: Good/Degrading

Many of the water bodies in the Coastal Bend Bay and Estuaries Program meet the water quality standards expected for their use. Nevertheless, there are some areas that have impaired water quality and do not meet the minimum standards.

INDICATOR #8: Harmful algal blooms (red/brown tides)
   frequency & severity. Condition/Trend: Good/Degrading

Texas red tides have been increasing in frequency since 1986. Texas Parks and Wildlife monitors red tides and provides updates to the public through their website.

INDICATOR #9: Nutrients in the Water Column.
   Condition/Trend: Good/Stable

Nutrient levels within the Coastal Bend are generally good. However, there are a couple of areas that exceeded the TCEQ nutrient screening levels.

Focus Question 4:
Are fish and wildlife populations increasing or decreasing?

INDICATOR #10: Recreationally important species abundance (red drum, spotted seatrout, southern flounder). Improving, except for the flounder which is leveling off.
   Condition/Trend: Good/Improving

Red drum and spotted seatrout populations are increasing due to management measures by the Texas Parks and Wildlife Department. Flounder populations have stabilized since TPWD implemented management changes in 1995.

INDICATOR #11: Ecologically important species (Anchovy and Atlantic croaker abundance). Condition/Trend: Good/Improving

Atlantic croaker and bay anchovies show a slight increase in relative abundance throughout the Coastal Bend.

INDICATOR #12: Commercially important species abundance (brown shrimp, blue crab).   Condition/Trend: Good/Decreasing

Blue crab populations are declining, possibly due to lack of freshwater and high salinity levels.

INDICATOR #13: Colonial water bird nesting pairs.
   Condition/Trend: Poor/Degrading

Colonial water bird populations are experiencing a decline due to several factors including habitat loss and human disturbance.

Focus Question 5:
Are habitats for fish and wildlife increasing or decreasing?

INDICATOR #14: Seagrass coverage.
Condition/Trend: Good/Improving

Good

Seagrass beds are increasing. The cause of this increase is a result of relative sea level rise and subsidence. Seagrass beds have spread into areas previously occupied by tidal flats and open water.

INDICATOR #15: Saltwater marsh.
Condition/Trend: Good/Improving

Good

Saltwater (estuarine) marshes are increasing. The cause of this increase is a result of relative sea level rise. Estuarine marshes have spread into areas previously occupied by tidal flats.

INDICATOR #16: Freshwater marsh.
Condition/Trend: Good/Degrading

Good

Freshwater (palustrine) marshes are decreasing due to community development and the landward movement of the freshwater/saltwater boundary.

INDICATOR #17: Rookery islands.
Condition/Trend: Poor/Degrading

Improvement Needed

Rookery islands are experiencing a decline due to several factors, including erosion and human disturbance.

Focus Question 6:
Are freshwater inflows adequate to maintain a healthy bay system?

INDICATOR #18: Quantity and timing of freshwater inflows.
Condition/Trend: Good/Stable

Good

Our bays and estuaries depend on freshwater inflows for maintaining habitats and productivity. The City of Corpus Christi is required to pass through a certain target amount of water each month in order to provide freshwater inflows into the Nueces River, thus providing managed flows to the bay.

INDICATOR #19: Bay salinity levels (within desired target ranges).
Condition/Trend: Good/Stable

Improvement Needed

Salinity levels determine the biological character of our bays and estuaries. The salinity levels are being monitored to coordinate managed freshwater inflows and maintain an optimum salinity range for greater productivity within the Corpus Christi Bay system.

For the full Indicator Report, visit www.cbbep.org.