

Environmental Indicators Through 2014

July 2015

Introduction and Background

The North Carolina Division of Water Resources (NCDWR) operates a state-wide ambient monitoring network which measures the concentrations of a variety of parameters. Currently, measurements are obtained monthly from 323 monitoring stations for parameters including dissolved oxygen, turbidity, and fecal coliform bacteria. Many other parameters such as pH, specific conductance, nutrients, and chlorophyll-a are also monitored. A general perspective of water quality changes can be obtained by looking graphically at dissolved oxygen, turbidity, and fecal coliform data. These water quality variables are particularly useful because there have been no significant changes in sampling or analysis techniques. Active ambient monitoring sites can be found here: <https://ox.deq.prod.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/ecosystems-branch/ambient-monitoring-system>.

Results for dissolved oxygen, turbidity, and fecal coliform bacteria were grouped by region (mountains, piedmont, and coastal plain) and graphed to depict the percentage of measurements that exceeded water quality evaluation levels over time (decadal¹). These graphs are based on results from 172 currently active NCDWR monitoring stations that were established before 1979. Since the data were collected over many years, the number of results is large enough to indicate possible changes in dissolved oxygen, turbidity, and fecal coliform bacteria over time.

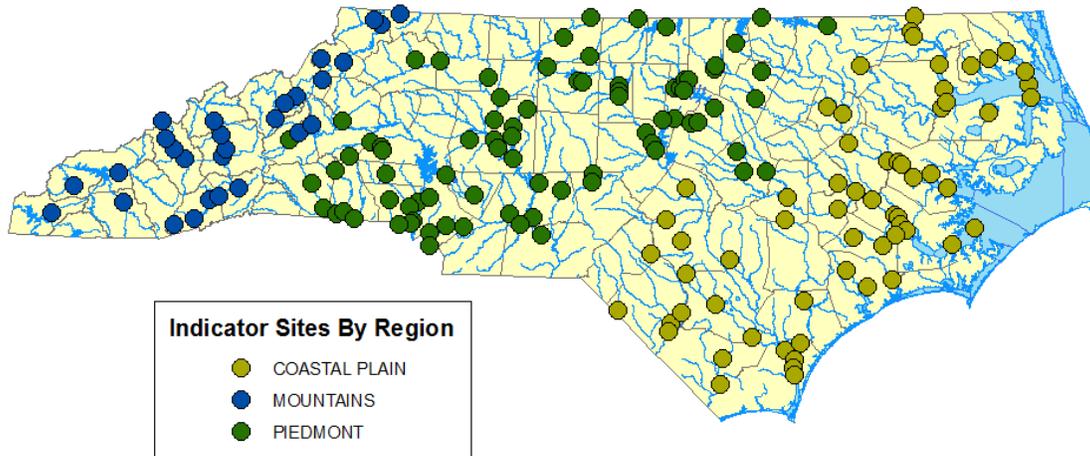


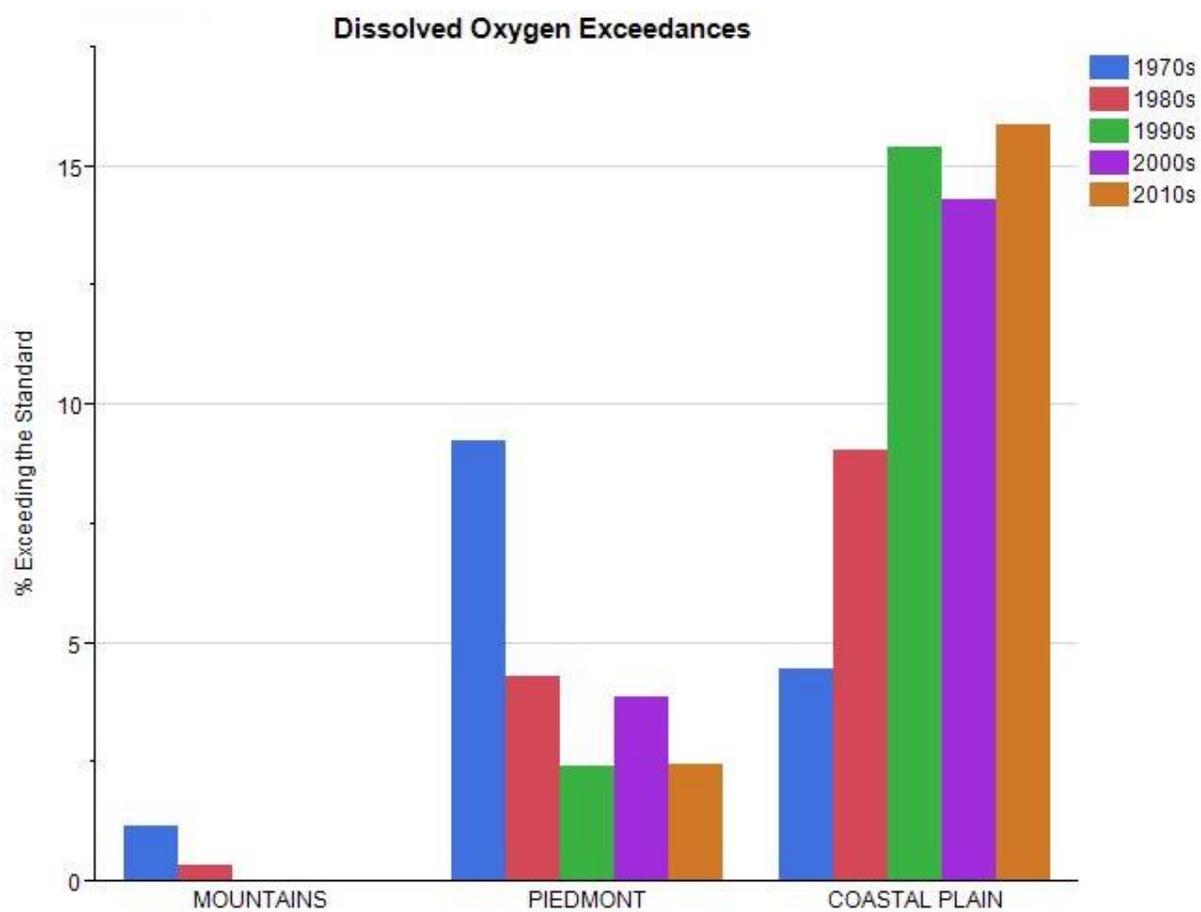
Table 1. Number of Monitoring Stations and Results Used to Prepare Indicator Graphs

Region	Number of Stations	Number of Results ¹		
		Turbidity	Fecal Coliform Bacteria	Summer Dissolved Oxygen ²
Coastal Plain	63	19,114	21,830	9,285
Mountains	29	9,876	11,050	3,605
Piedmont	80	24,614	28,558	11,415
Total	172	53,604	61,438	24,305

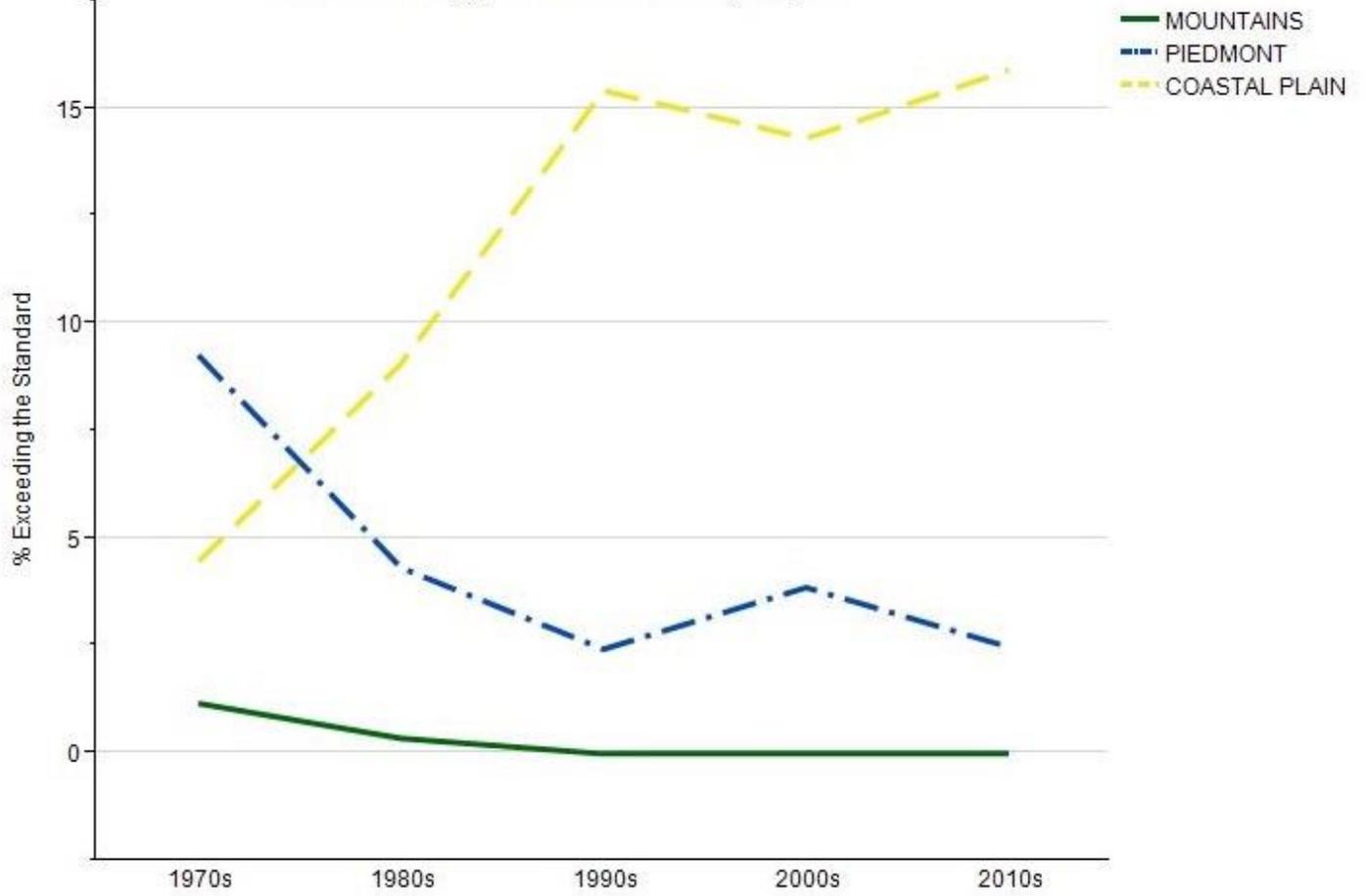
1. Period: January 1970 through December 2014.

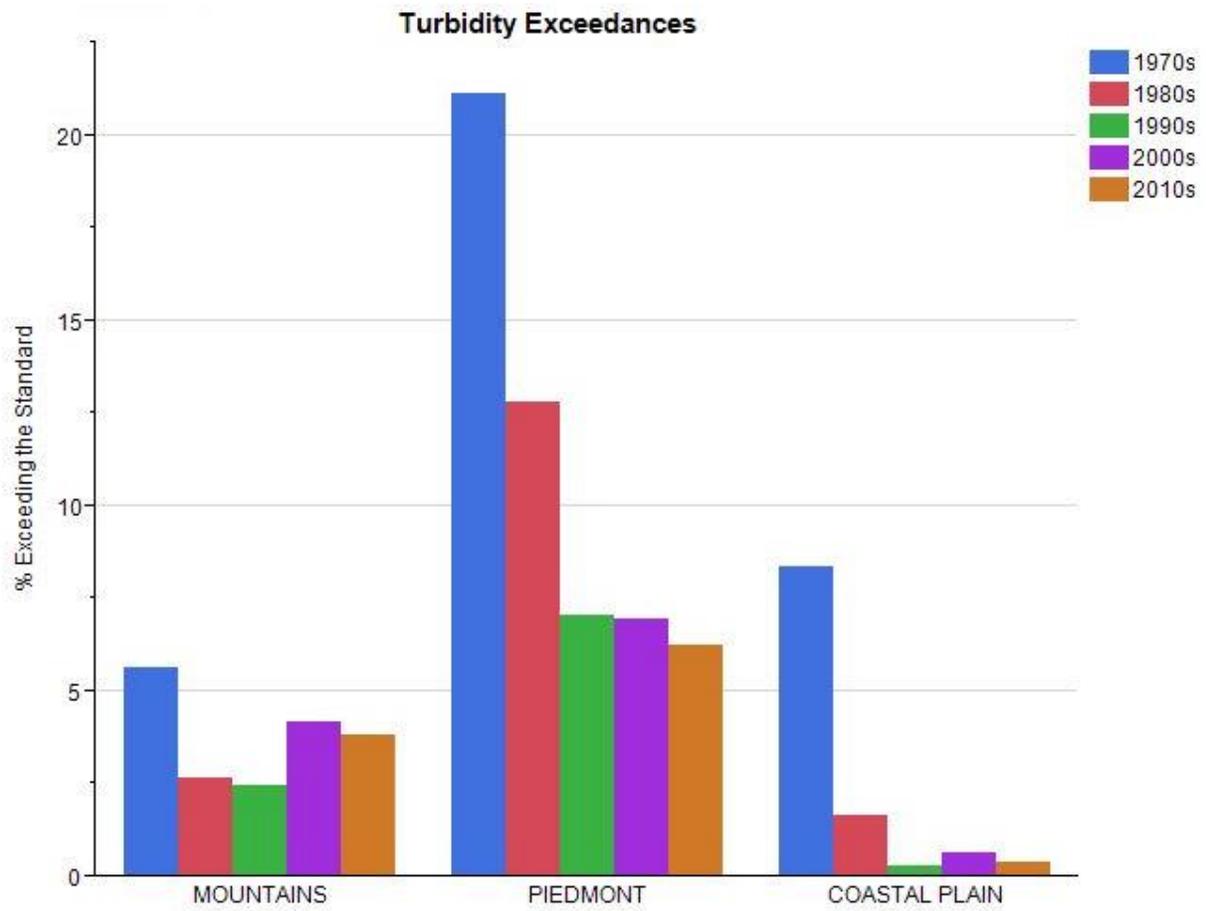
2. Summer is defined as June, July, August, and September. Only surface results (< 1m) were used.

¹ Note that the bar graphs for the decade “2010s” on pages 2-4 represent the years 2010 through 2014.

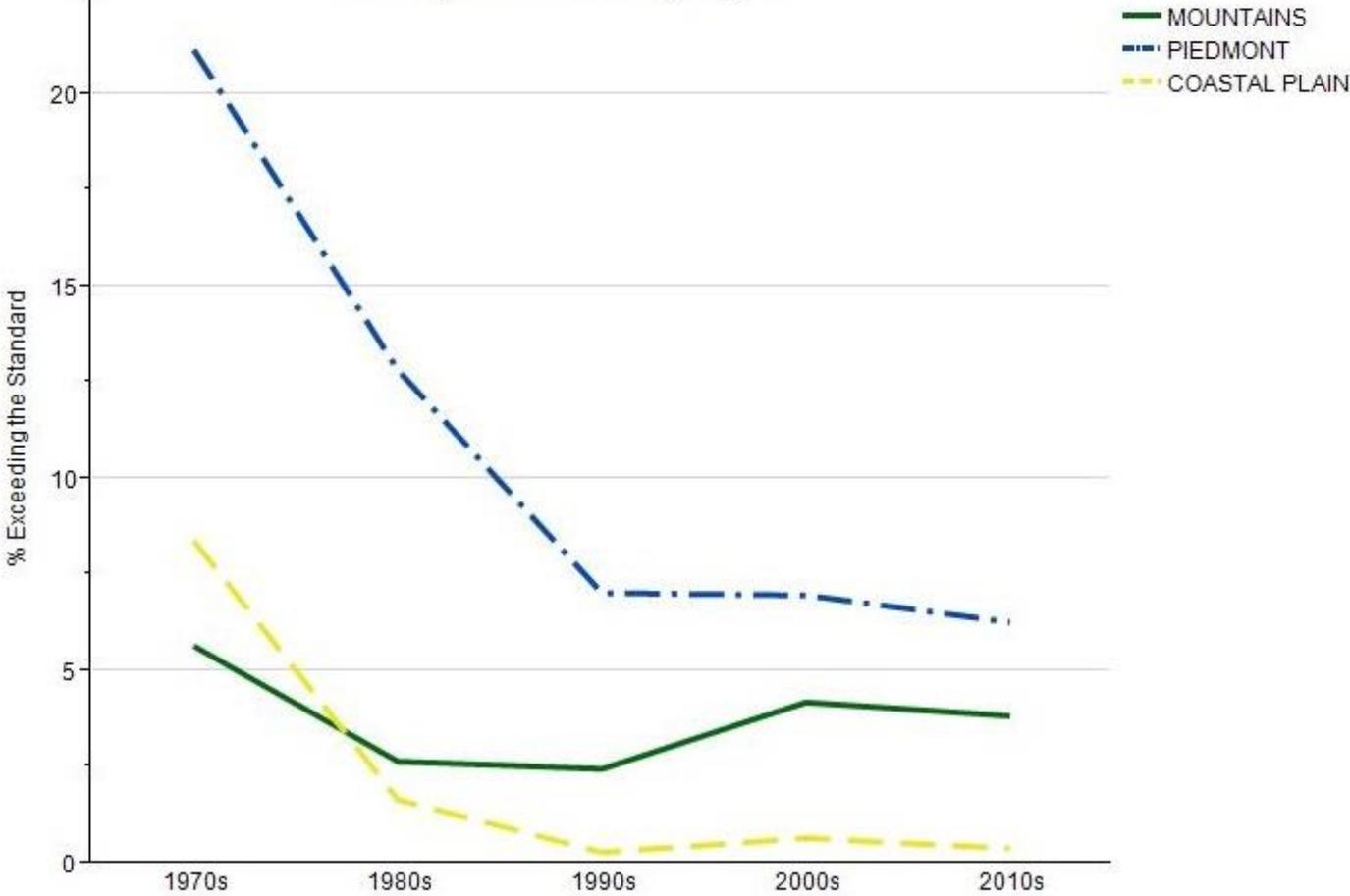


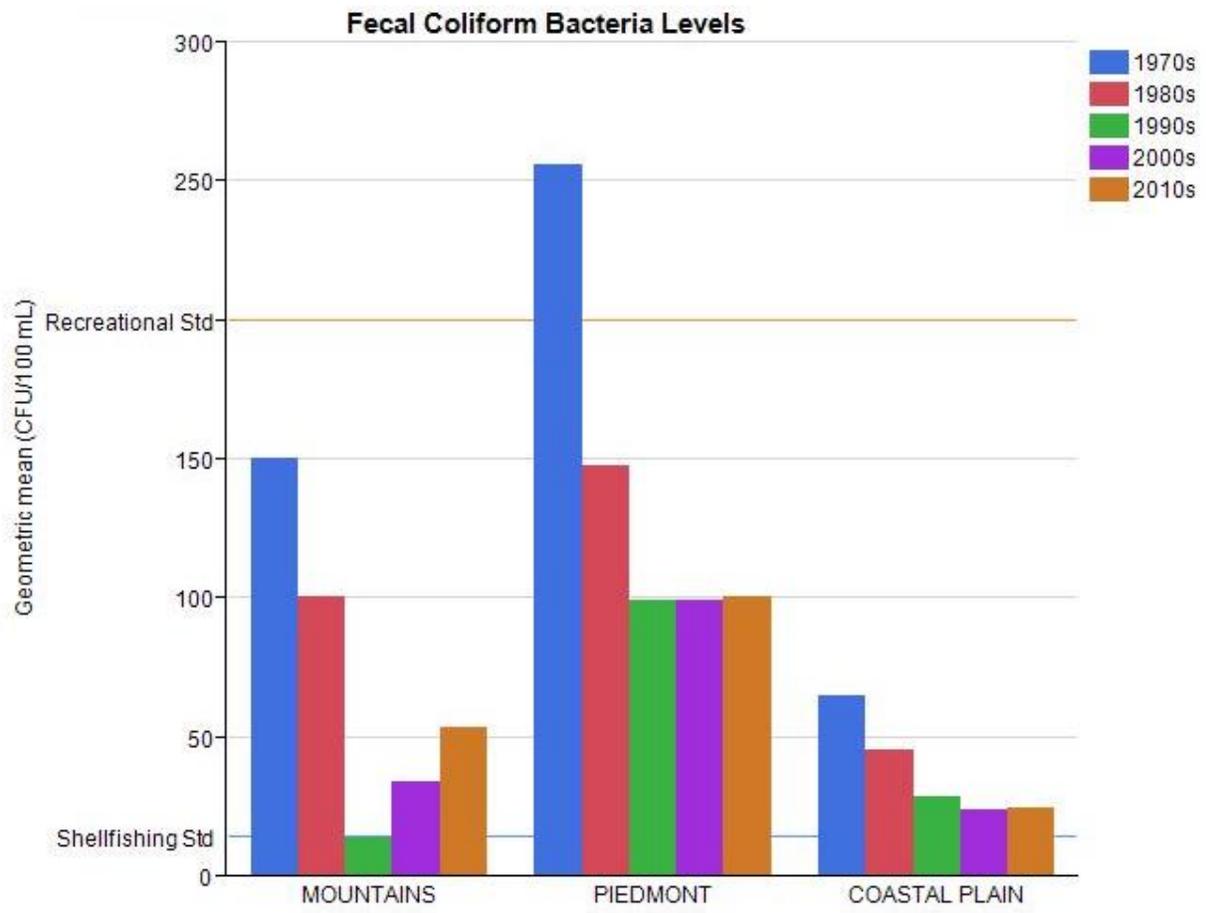
Dissolved Oxygen Exceedances by Region





Turbidity Exceedances by Region





Fecal Coliform Bacteria Levels by Region

