

Andorscoggin River, Gilead, ME

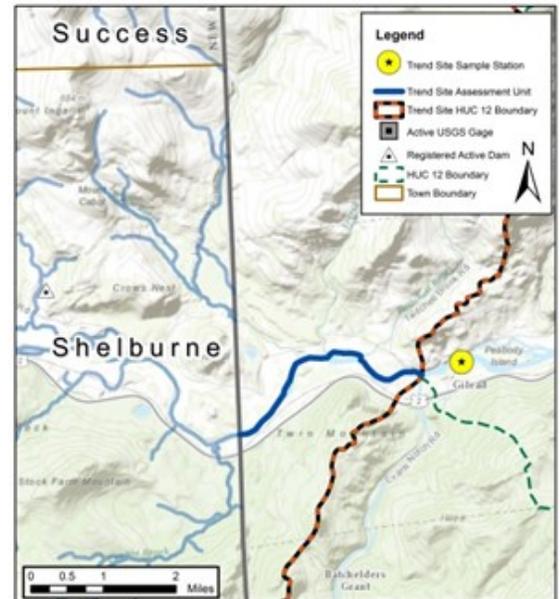
Station: **01-AND**

Current reporting period: **2012-2016**

Start year: **1990**

Water Quality Summary (Data from May - September)			
Parameter	Trend	Current Condition	Overall Rating
Specific Conductance	Stable	Low	Good
Total Phosphorus	Stable	Intermediate	Good
Total Nitrogen	Stable	Low	Good
pH	Stable	Intermediate	Good
Dissolved Oxygen	⊗	⊗	⊗

⊗ - no or limited data. For Current Condition: High>75th percentile, Intermediate=25th-75th percentile, Low <25th percentile of statewide conditions. Overall rating requires trend analysis and current condition. Shaded cells indicate that conditions are not as good as expected.



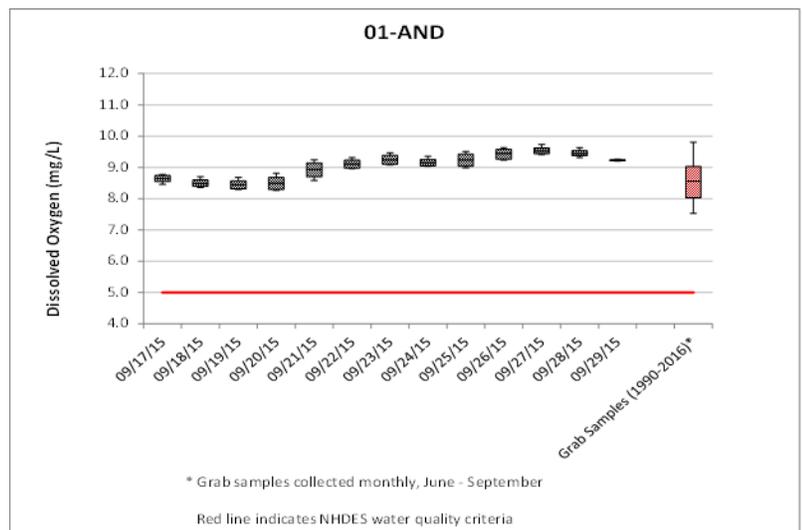
Sample station characteristics

Assessment unit	MERIV400020103-06
Latitude	44.3981
Longitude	-70.9716
Drainage area (Sq. Mi.)	1536
Elevation (FT)	674
Development category	Low
Drainage area size category	Large
Coldwater fish probability	0%
Fish community type	WARMWATER
8 digit hydrologic unit code	01040002

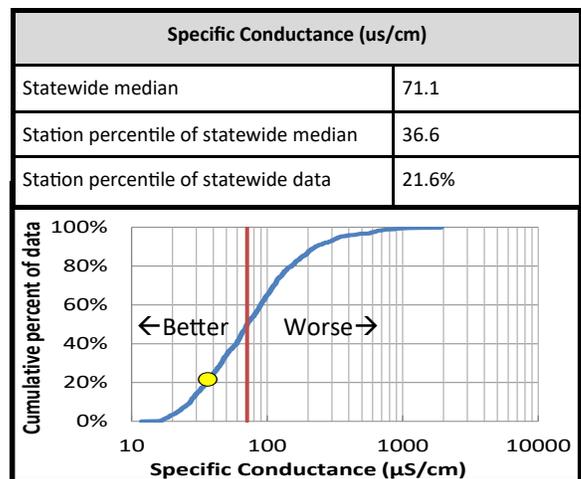
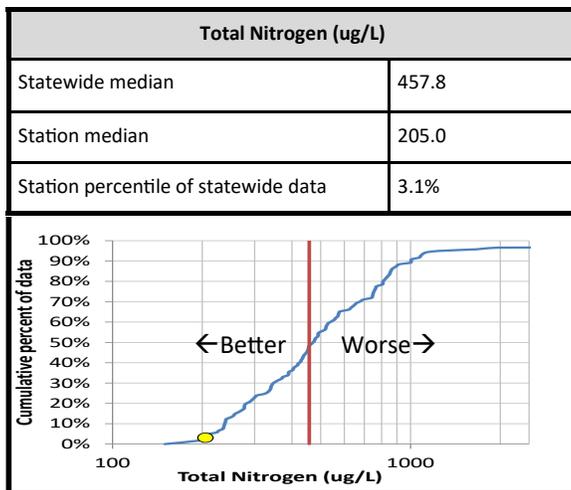
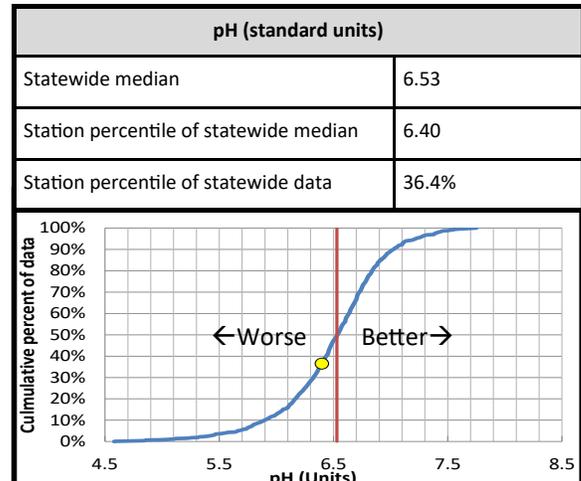
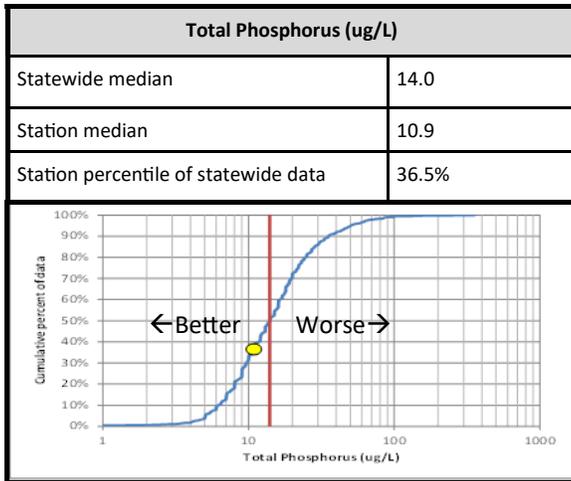
Station Highlights: The station 01-AND in the Andorscoggin River is just east of the New Hampshire / Maine border. The primary water quality indicators have remained stable over the period of analysis. Nutrient levels have low to intermediate concentrations relative to statewide data. Specific conductance levels are low and the pH is intermediate. Water quality indicators were similar for the current reporting period compared to 2008 through 2011.

Biological indicators - For 01-AND dissolved oxygen was used as the primary biological indicator. One deployment of a continuous data logger was made in 2015. Of the 1,149 data points gathered, zero were below state water quality criteria (5.0 mg/L). The daily mean dissolved oxygen was 9.04 mg/L and ranged from 8.44-9.53 mg/L. A total of 80 grab samples have been collected at this site since 1990. The mean dissolved oxygen concentration of the grab samples was 8.56 mg/L with a range from 7.00-11.60 mg/L.

For the plot at the right: Upper whisker=95th percentile; lower whisker=5th percentile; upper and lower box boundary=75th and 25th percentile, respectively; line inside box=daily mean.



Statewide Comparison - The median value of the sampling station for the reporting period (yellow dot) was plotted with respect to water quality data collected from 1990-present as a percentile of the statewide distribution (curved blue line) and the statewide median (vertical red line). The position of the sampling station median on the plot provides an indication of the trend site's water quality compared to that collected around the state. For total phosphorus, total nitrogen, and specific conductance higher percentiles indicate lower water quality. Conversely, a lower percentile for pH indicates lower water quality. Over time, changes in the percentile can be used to track whether water quality is improving or declining at the sampling station with respect to data from around the state.



Current vs. previous water quality conditions— Data included in the current reporting period was compared to that from the previous reporting period. A Kruskal-Wallis test ($p=0.05$) was used to compare data collected in the respective reporting periods for each parameter. Differences between reporting periods provide a indication of whether short term water quality changes have occurred at the site. For table below, “Different (Y/N)” column indicates if significant change has occurred (Y=yes, N=no, Insufficient data=fewer than five samples contained in either of the reporting periods). “Change” column indicates the direction of change (Increase=water quality indicator higher in current period than previous period, Decrease= water quality indicator lower in current period than previous period, Blank=no change or insufficient data for comparison).

Parameter	Period	Years	Mean C	Range C	Period	Years	Mean P	Range P	Different (Y/N)	Change
pH	Current	2012-2016	6.6	0.9	Previous	2008-2011	6.7	1.0	N	
Specific Conductance			36.3	6.5			34.9	7.7	N	
Total Nitrogen			274.1	570.0			255.4	265.0	N	
Total Phosphorus			11.1	12.2			12.9	11.4	N	

Trend analyses - Sites with 10 or more years of data were analyzed for trends. Trends analyses were completed on annual medians using the Mann-Kendall test ($p=0.05$). Data from 2006-2016 were used to analyze trends at station 01-AND because a series of paper mill closures in 2005 represented a significant event that interrupted the trend in water quality. Trend outcomes included in plots below (**NT**=no trend; **(+)**=increasing; **(-)**=decreasing; **LD**=limited data; trend analysis not completed). Significant increasing or decreasing trends include a LOESS trend line for the period of analysis.

