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# Appendix 2: Water Quality Monitoring Project for Demonstration of Canal Remediation Methods Florida Keys- Report #1: Canal Water Characterization

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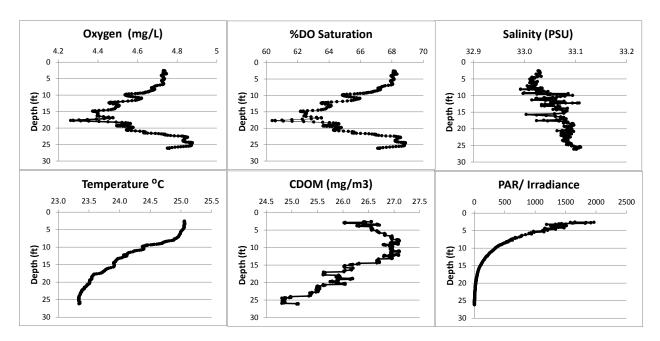
### **APPENDIX 2**

## **CTD Casts**

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### **CTD Casts**



#### Survey No 1

Figure 77. Profile of physicochemical properties of station No. 28A

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values between 70 and 80% and within the regulation levels.

Salinity remains very stable with values around 33.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter slightly decreases downward.

**Photosynthetically Active Radiation** decreases with increasing water depth from values around 2000 to practically zero and has a vertical attenuation coefficient of 0.86.

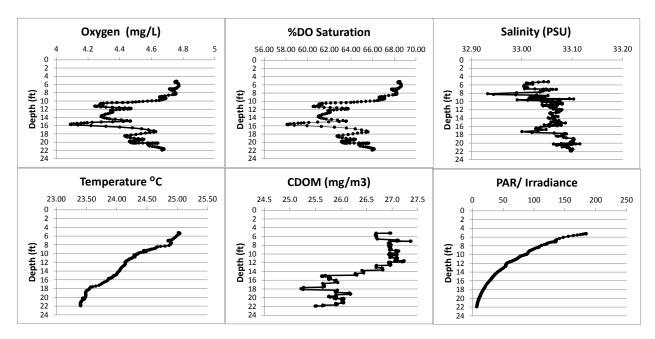


Figure 78. Profile of physicochemical properties of station No. 28B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values between 58 and 70% and within the regulation levels (all values above 42% DO Saturation).

**Salinity** remains very stable with values around 33. Given the sensitivity of the sensors it is possible to define an increasing trend with water depth although the change is of 0.2 PSU.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter slightly decreases downward.

**Photosynthetically Active Radiation/Irradiance** decreases with increasing water depth and has a vertical attenuation coefficient of 0.63.

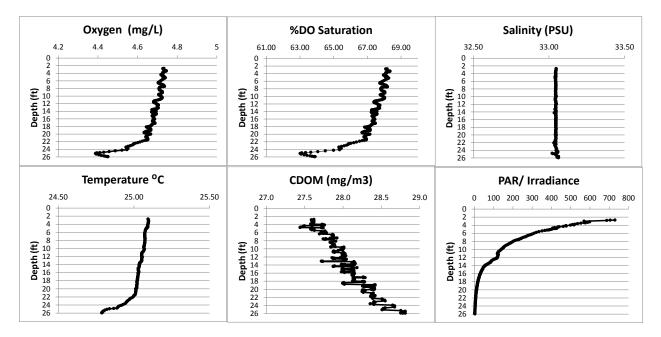


Figure 79. Profile of physicochemical properties of station No. 28C

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values between 60 and 70% and within the regulation levels

Salinity remains very stable with values around 33.

Water Temperature remains also very stable with values around 25 °C.

Colored Dissolved Organic Matter slightly increased downward.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.77.

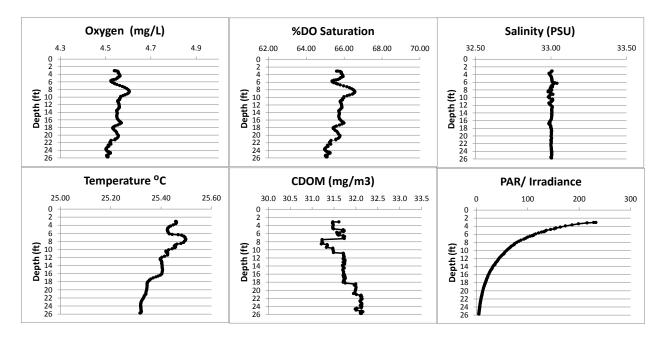


Figure 80. Profile of physicochemical properties of station No. 29A

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values around 66% and within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 33.

Water Temperature remains also very stable with values around 25.4 °C.

Colored Dissolved Organic Matter remains rather constant between 31-31 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.52.

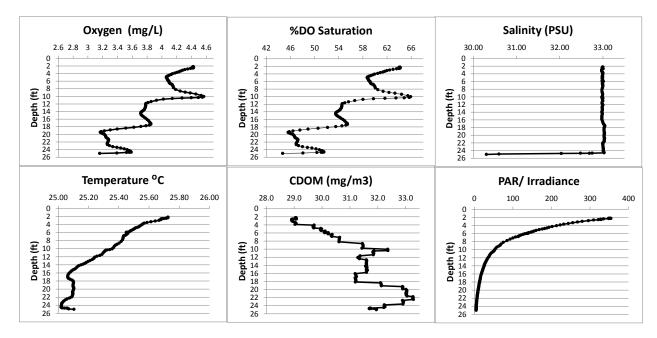


Figure 81. Profile of physicochemical properties of station No. 29B

**Dissolved Oxygen and Oxygen saturation** show a steady decline although water remains well oxygenated with all values above 42% DO Saturation, according to the regulation levels.

Salinity remains very stable with values around 33 and captures a decrease at 24.5 ft.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter slightly increased downward from 29 to 33 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.61.

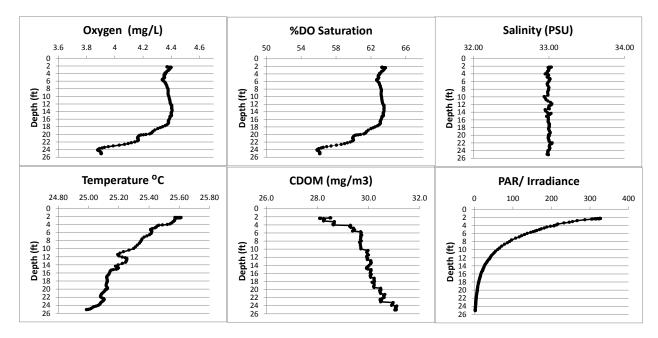


Figure 82. Profile of physicochemical properties of station No. 29C

**Dissolved Oxygen and Oxygen saturation** do not change significantly and readings are between 55 and 63%, without exceeding the regulation levels (above 42% DO Saturation).

Salinity remains very stable with values around 33.

**Water Temperature** remains very stable with values around 25. Given the sensitivity of the sensors it is possible to define a decreasing trend with water depth although the change is of about 1 °C.

Colored Dissolved Organic Matter slightly increased downward.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.68.

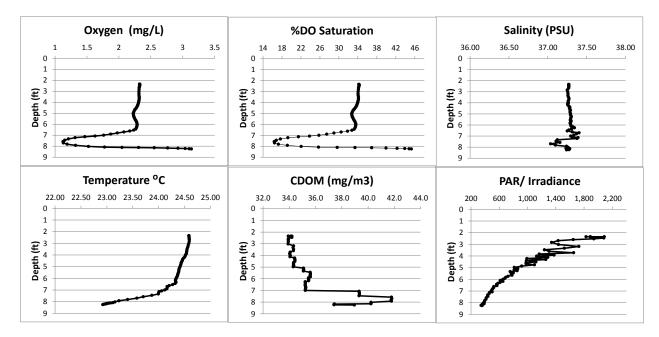


Figure 83. Profile of physicochemical properties of station No. 132A

**Dissolved Oxygen and Oxygen saturation** are in general low throughout the water column with most values exceeding the regulation levels (values below 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter slightly increased downward from 34 to 42 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth from values around 2000 to practically zero and has a vertical attenuation coefficient of 0.95.

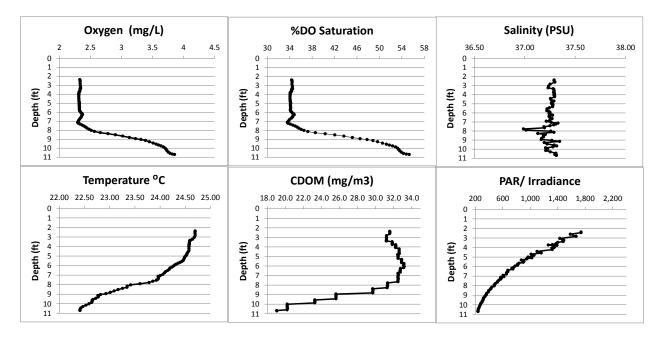


Figure 84. Profile of physicochemical properties of station No. 132B

**Dissolved Oxygen and Oxygen saturation** were in general low throughout the water column with some values exceeding the regulation levels (values below 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter decreases downward from around 33 to 18 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth from values around 1800 to 200 and has a vertical attenuation coefficient of 0.82.

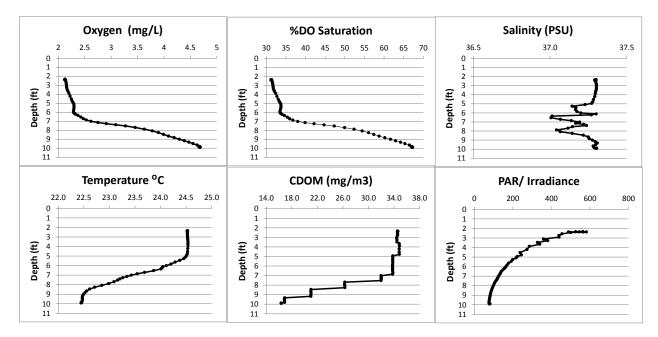


Figure 85. Profile of physicochemical properties of station No. 132C

**Dissolved Oxygen and Oxygen saturation** are in general low and values range between 31 and 67% DO Saturation with approximately 30% exceeding the regulation levels (values below 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter decreases downward from around 33 to 18 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.87.

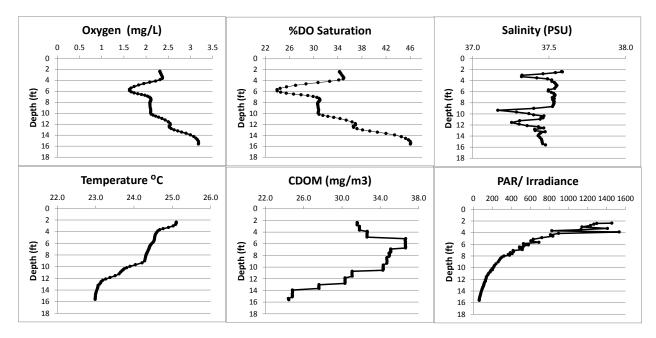


Figure 86. Profile of physicochemical properties of station No. 137A

**Dissolved Oxygen and Oxygen saturation** are generally low with a slight increasing trend downward and values between 23 and 47%, close to values exceeding the regulation levels (below 42% DO Saturation).

Salinity remains very stable with values between 37 and 38.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter decreases downward up to 24 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth with some variations at the surface and a vertical attenuation coefficient of 0.78.

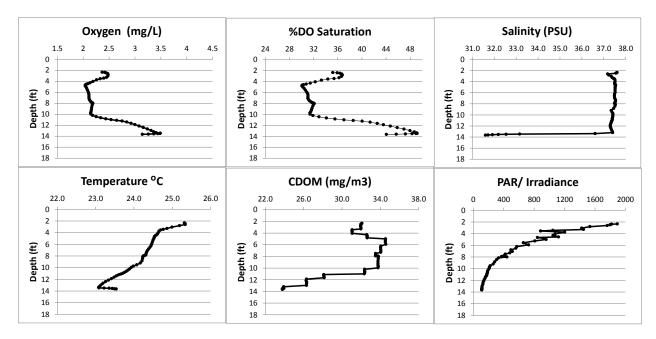


Figure 87. Profile of physicochemical properties of station No. 137B

**Dissolved Oxygen and Oxygen saturation** are generally low with a slight increasing trend downward and values between 30 and 49%, close to values exceeding the regulation levels (below 42% DO Saturation).

Salinity remains very stable with values around 37 and captures a decrease at 13 ft.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter decreases downward from around 31-32 to 23 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.82.

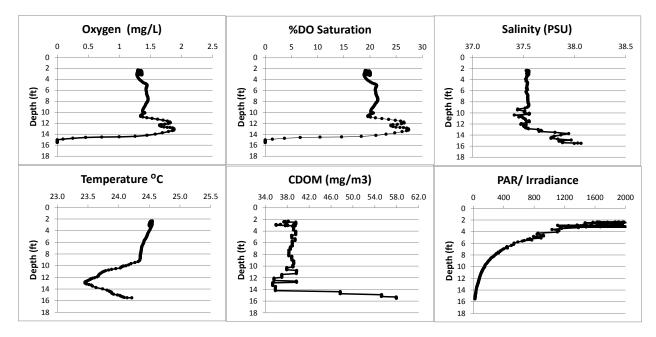


Figure 88. Profile of physicochemical properties of station No. 137C

**Dissolved Oxygen and Oxygen saturation** are generally low with some oscillations after 10 ft water depth. All values exceed the regulation levels (below 42% DO Saturation).

**Salinity** remains very stable with values around 37.5 and captures a decrease at 10 ft. Given the sensitivity of the sensors it is possible to define an increasing trend thereafter although the change is of 0.5 PSU.

Water Temperature drops along the profile with a range of variation of about 1 °C.

**Colored Dissolved Organic Matter** remains very stable with values around 38 mg m<sup>-3</sup> and an increase is observed after 13 ft water depth.

**Photosynthetically Active Radiation** exponentially decreases with water depth with some variations at the surface and a vertical attenuation coefficient of 1.08.

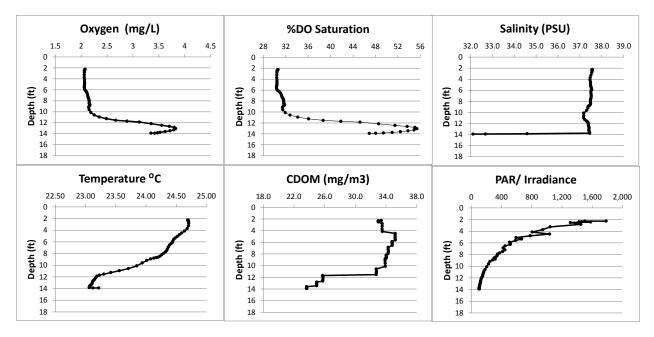


Figure 89. Profile of physicochemical properties of station No. 137D

**Dissolved Oxygen and Oxygen saturation** are in general low throughout the water column with some values exceeding the regulation levels (values below 42% DO Saturation).

Salinity remains very stable with values around 37 and captures a decrease at 14 ft.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter slightly decreases downward from around 34 to 23 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth from values around 1800 to practically zero and has a vertical attenuation coefficient of 0.77.

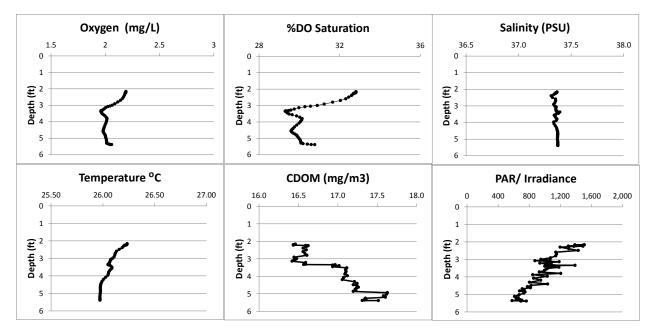


Figure 90. Profile of physicochemical properties of station No. 147A

**Dissolved Oxygen and Oxygen saturation** are in general low throughout the water column with all values exceeding the regulation levels (values below 42% DO Saturation).

Salinity remains very stable with values between 37 and 38.

Water Temperature remains very stable with values around 26 °C.

Colored Dissolved Organic Matter remains very stable with values around 17 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth from values around 1500 to 500 and has a vertical attenuation coefficient of 0.76.

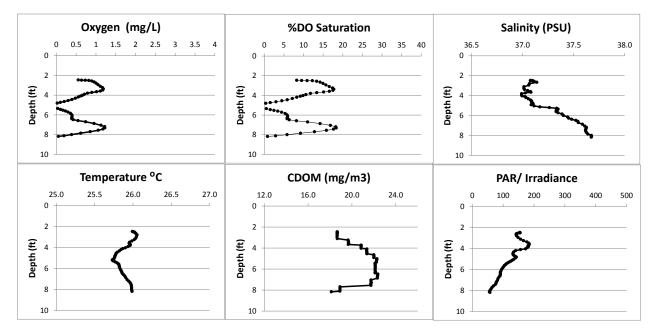


Figure 91. Profile of physicochemical properties of station No. 147B

**Dissolved Oxygen and Oxygen saturation** are low and do not change significantly. All values exceed the regulation levels (values below 42% DO Saturation).

Salinity remains very stable with values between 37 and 38.

Water Temperature remains very stable with values around 26 °C.

Colored Dissolved Organic Matter remains very stable with values around 20 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.61.

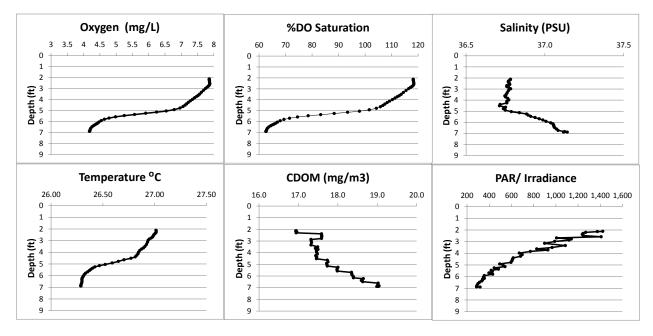


Figure 92. Profile of physicochemical properties of station No. 148A

**Dissolved Oxygen and Oxygen saturation** vary by water depth and water remains well oxygenated, without exceeding the regulation levels (above 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature remains stable with values between 26 and 27 °C.

Colored Dissolved Organic Matter slightly increased downward.

**Photosynthetically Active Radiation** decreases exponentially with water depth and has a vertical attenuation coefficient of 1.11.

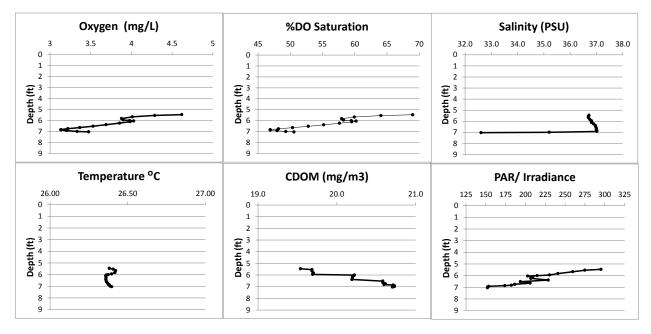


Figure 93. Profile of physicochemical properties of station No. 148B

**Dissolved Oxygen and Oxygen saturation** vary by water depth and water remains well oxygenated, without exceeding the regulation levels (above 42% DO Saturation).

Salinity remains stable with values around 37 and captures a decrease at 7 ft.

Water Temperature remains stable with values between 26 and 27 °C.

Colored Dissolved Organic Matter remains stable.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.16.

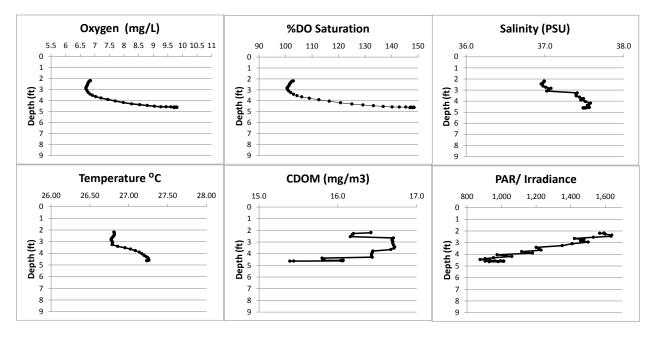


Figure 94. Profile of physicochemical properties of station No. 148C

**Dissolved Oxygen and Oxygen saturation** vary by water depth and water remains well oxygenated, without exceeding the regulation levels (above 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature remains stable with values around 27 °C.

Colored Dissolved Organic Matter remains stable.

**Photosynthetically Active Radiation** decreases with water depth from values around 1600 to 900 and has a vertical attenuation coefficient of 0.77.

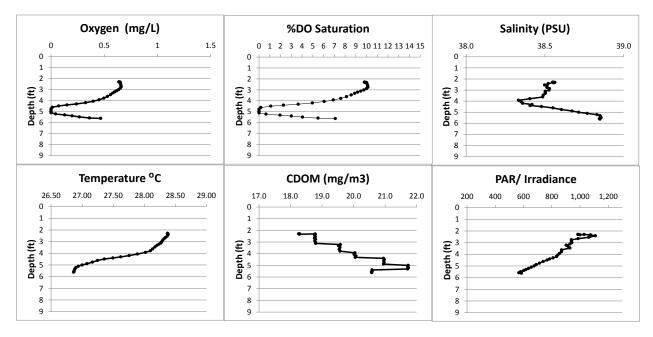


Figure 95. Profile of physicochemical properties of station No. 266A

**Dissolved Oxygen and Oxygen saturation** are generally low with a decreasing tendency downward until a water depth of 5 ft, when values slightly increase. All values exceed the regulation levels (below 42% DO Saturation).

Salinity remains stable with values around 38.5.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter increases along the profile.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.56.

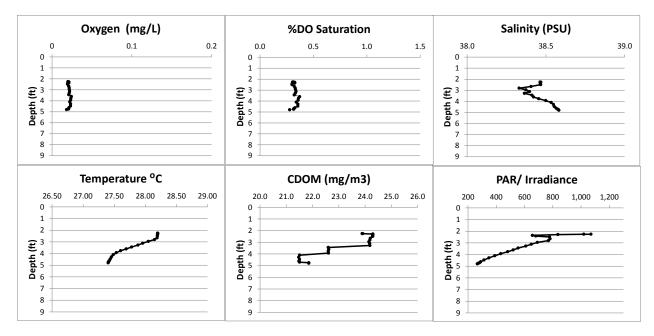


Figure 96. Profile of physicochemical properties of station No. 266B

**Dissolved Oxygen and Oxygen saturation** are very low, practically zero, and the water column remain a concentration exceeding the regulation levels (below 42% DO Saturation).

Salinity remains stable with values around 38.5.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter remains stable.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.53.

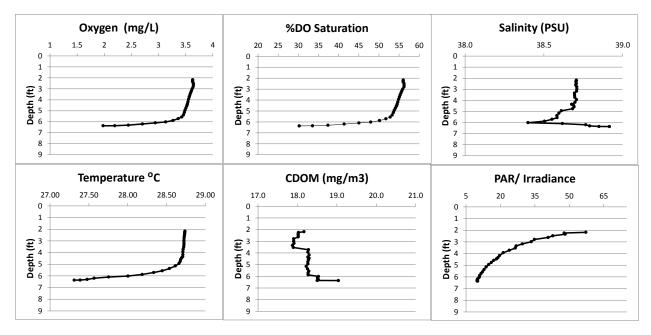


Figure 97. Profile of physicochemical properties of station No. 266C

**Dissolved Oxygen and Oxygen saturation** are generally low with a decreasing tendency downward and values between 30 and 56%, close to values exceeding the regulation levels (below 42% DO Saturation).

Salinity remains stable with values between 38 and 39.

Water Temperature drops along the profile with a range of variation of about 1.4 °C.

Colored Dissolved Organic Matter remains very stable.

**Photosynthetically Active Radiation** decreases exponentially with water depth and has a vertical attenuation coefficient of 1.28.

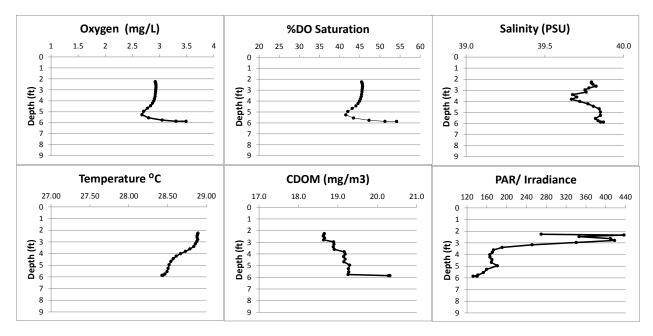


Figure 98. Profile of physicochemical properties of station No. 277A

**Dissolved Oxygen and Oxygen saturation** do not change significantly and values are between 41 and 54%, very close to values exceeding the regulation levels (below 42% DO Saturation).

Salinity y remains very stable around 39.5.

Water Temperature remains stable with values between 28 and 29 °C.

**Colored Dissolved Organic Matter** slightly increases with water depth from 18.6 to 20.3 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.91.

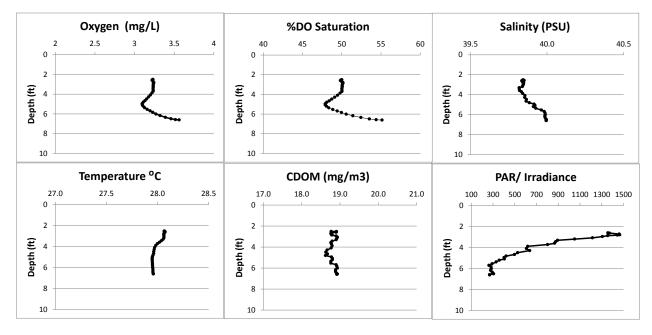


Figure 99. Profile of physicochemical properties of station No. 277B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and values are around 50%, without exceeding the regulation levels (below 42% DO Saturation).

Salinity remains very stable around 40.

Water Temperature remains stable with values around 28 °C.

Colored Dissolved Organic Matter remains very stable around 19 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.22.

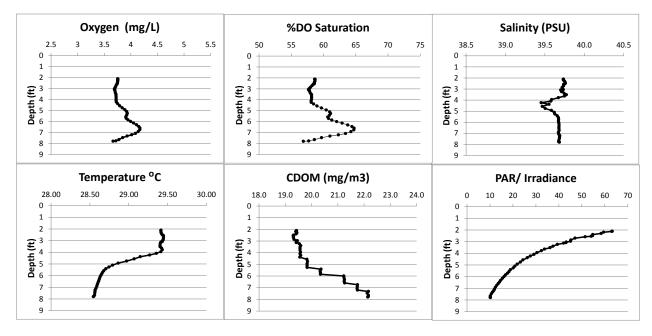


Figure 100. Profile of physicochemical properties of station No. 277C

**Dissolved Oxygen and Oxygen saturation** slightly vary by water depth and water remains well oxygenated, without exceeding the regulation levels (above 42% DO Saturation).

Salinity remains stable with values between 39 and 40.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter increases along the profile from 19 to 22 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.06.

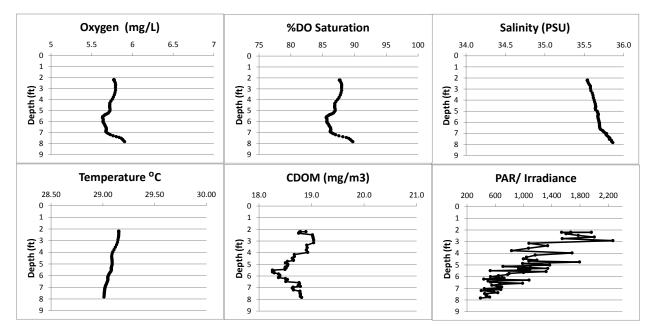


Figure 101. Profile of physicochemical properties of station No. 278A

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values between 85 and 89% and within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 36.

Water Temperature remains very stable with values around 29 °C.

**Colored Dissolved Organic Matter** remains stable throughout the profile.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.79.

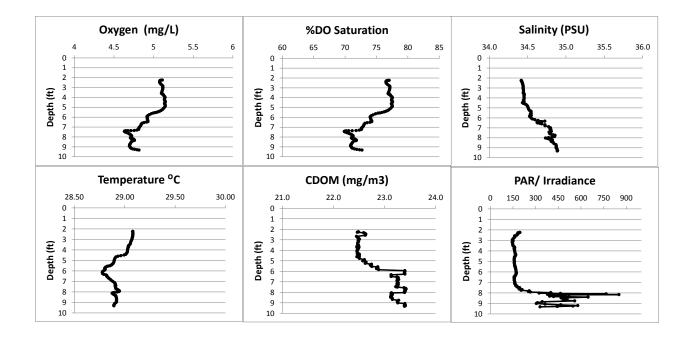


Figure 102. Profile of physicochemical properties of station No. 278B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values between 70 and 77% and within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 35.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable throughout the profile.

Photosynthetically Active Radiation varies with water depth without any trend.

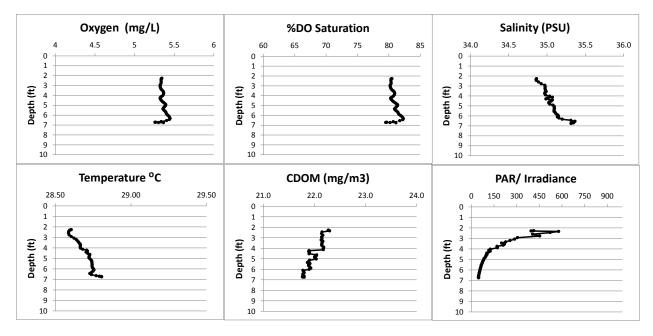


Figure 103. Profile of physicochemical properties of station No. 278C

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values above 80% and within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 35.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.73.

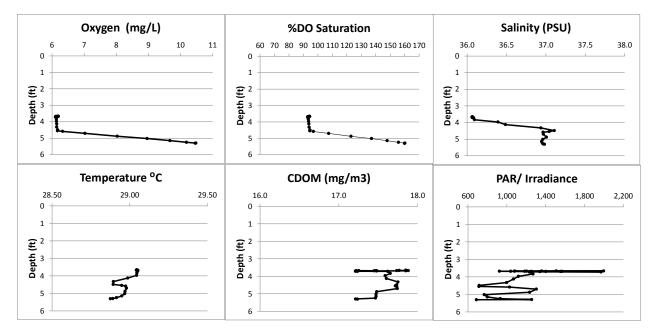


Figure 104. Profile of physicochemical properties of station No. 278D

**Dissolved Oxygen and Oxygen saturation** show an increasing tendency and water remains well oxygenated with values above 93% and within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values between 36 and 37.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation coefficient of 0.87.

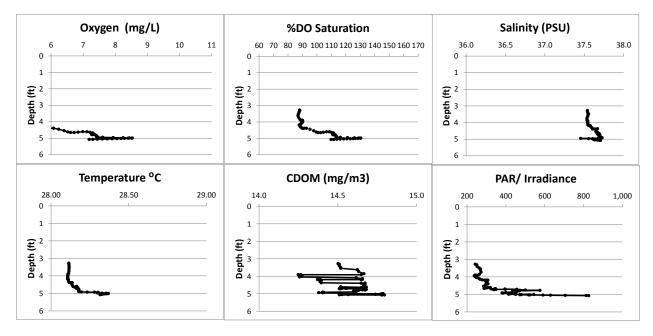


Figure 105. Profile of physicochemical properties of station No. 278E

**Dissolved Oxygen and Oxygen saturation** show an increasing tendency and water remains well oxygenated with values above 87% and within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values between 37 and 38.

Water Temperature remains very stable with values around 28 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation coefficient of 1.64.

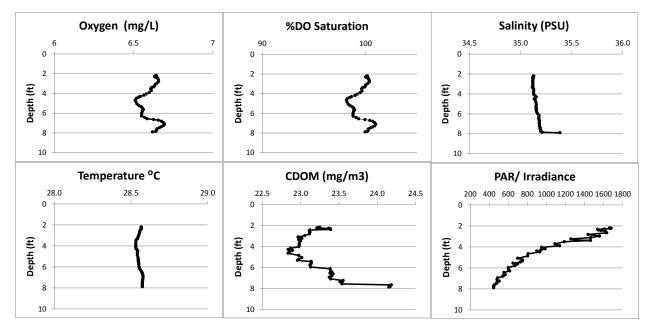


Figure 106. Profile of physicochemical properties of station No. 278F

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 35.

Water Temperature remains very stable with values around 28.5 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation of 0.81.

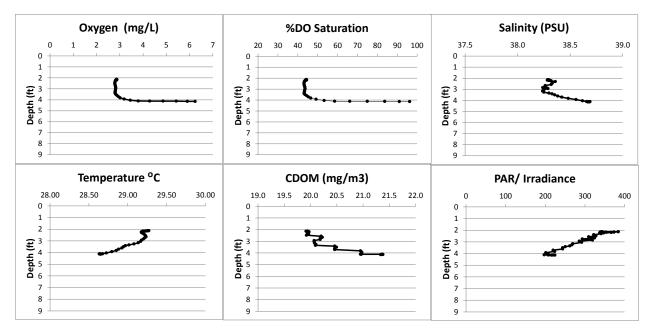


Figure 107. Profile of physicochemical properties of station No. 282A

**Dissolved Oxygen and Oxygen saturation** show an increasing tendency and water remains within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation coefficient of 0.90.

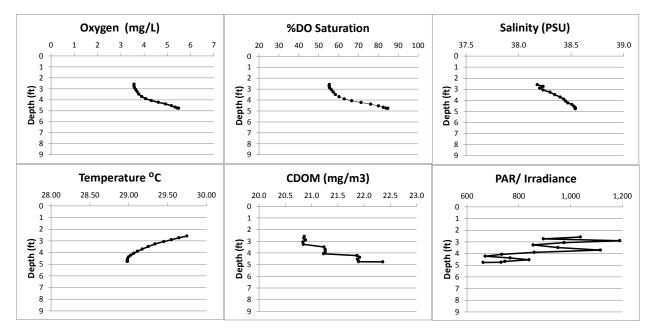


Figure 108. Profile of physicochemical properties of station No. 282B

**Dissolved Oxygen and Oxygen saturation** show an increasing tendency and water remains within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 38.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation coefficient of 0.60.

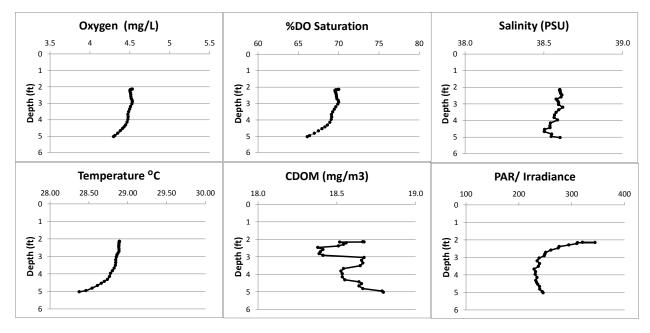


Figure 109. Profile of physicochemical properties of station No. 282C

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 38.5.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation of 0.29.

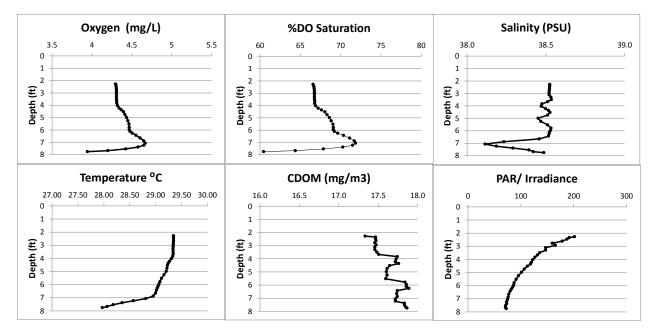


Figure 110. Profile of physicochemical properties of station No. 287A

**Dissolved Oxygen and Oxygen saturation** show an increasing tendency although water remains well oxygenated with all values above 42% DO Saturation, according to the regulation levels.

Salinity remains very stable with values around 33 and captures a decrease at 7 ft.

Water Temperature drops along the profile with a range of variation of about 1.5 °C.

Colored Dissolved Organic Matter remains stable along the profile.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.61.

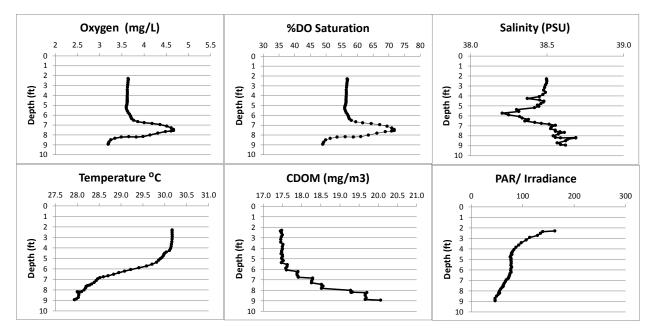


Figure 111. Profile of physicochemical properties of station No. 287B

**Dissolved Oxygen and Oxygen saturation** show an increasing tendency after 6.5 ft and water remains well oxygenated with all values above 42% DO Saturation, according to the regulation levels.

**Salinity** remains very stable with values around 38.5 and captures a slight decrease around 6 ft.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter increases along the profile.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.45.

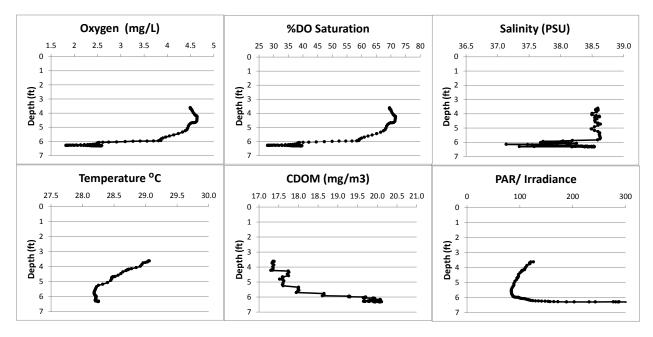


Figure 112. Profile of physicochemical properties of station No. 287C

Salinity remains stable with values between 38 and 39.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter remains very stable.

Photosynthetically Active Radiation varies with water depth without any trend.

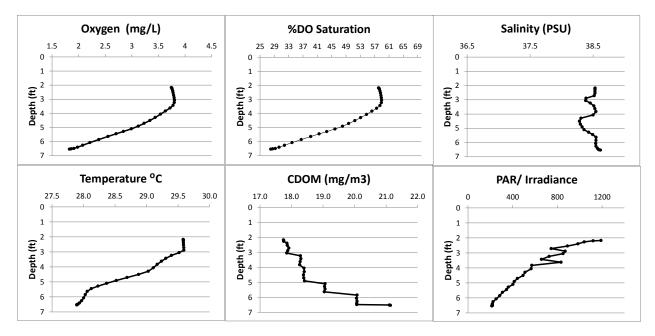


Figure 113. Profile of physicochemical properties of station No. 290A

Salinity remains stable with values around 38.5.

Water Temperature drops along the profile with a range of variation of about 1.7 °C.

Colored Dissolved Organic Matter increases along the profile.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.22.

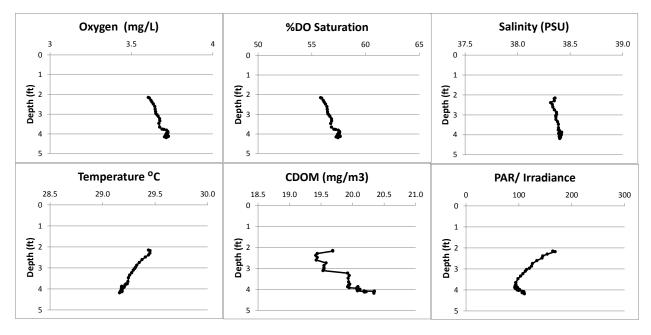


Figure 114. Profile of physicochemical properties of station No. 290B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 38.5.

Water Temperature remains very stable with values around 29 °C.

Colored Dissolved Organic Matter remains stable throughout the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation of 0.71.

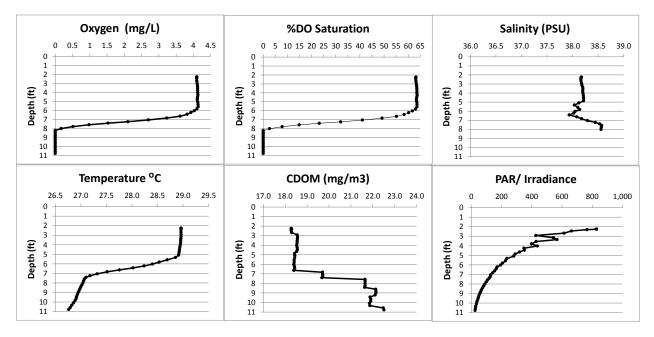


Figure 115. Profile of physicochemical properties of station No. 293A

Salinity remains stable with values around 38.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter increases along the profile.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.28.

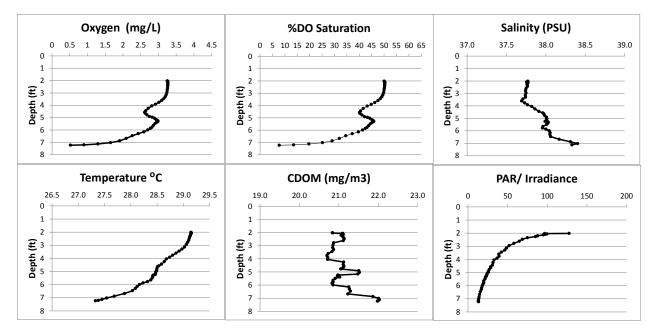


Figure 116. Profile of physicochemical properties of station No. 293B

Salinity remains stable with values around 38.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter remains very stable along the profile.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.29.

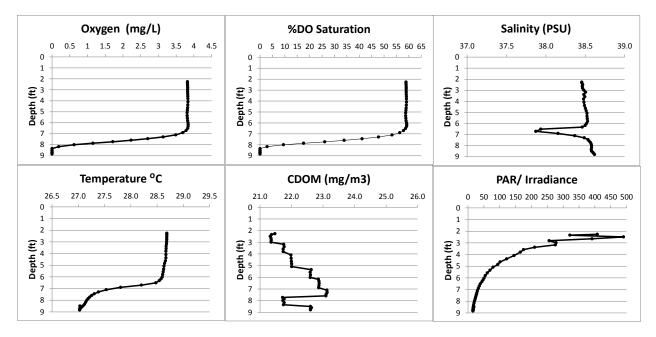


Figure 117. Profile of physicochemical properties of station No. 293C

Salinity remains stable with values around 38.

Water Temperature drops along the profile with a range of variation of about 1.7 °C.

Colored Dissolved Organic Matter remains very stable throughout the profile.

**Photosynthetically Active Radiation** exponentially decreases with water depth with some oscillations and has a vertical attenuation coefficient of 1.65.

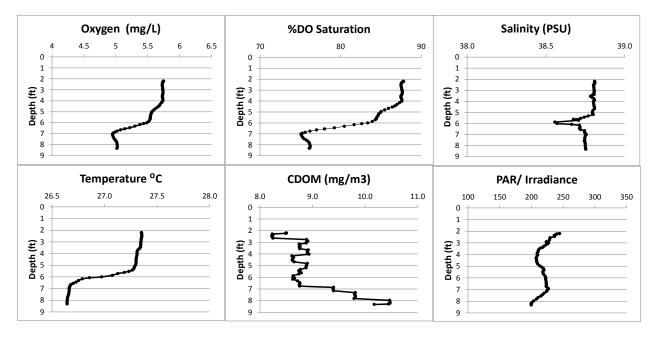


Figure 118. Profile of physicochemical properties of station No. 458A

**Dissolved Oxygen and Oxygen saturation** show a decreasing tendency downward and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains stable with values around 38.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter increases along the profile.

Photosynthetically Active Radiation slightly varies along the profile.

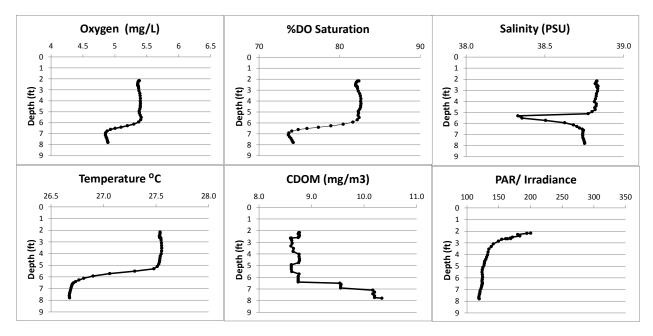


Figure 119. Profile of physicochemical properties of station No. 458B

**Dissolved Oxygen and Oxygen saturation** show a decreasing tendency downward and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains stable with values around 38.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter remains stable throughout the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation of 0.23.

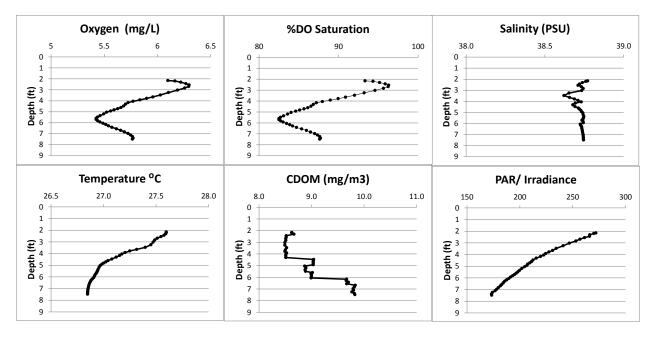


Figure 120. Profile of physicochemical properties of station No. 459A

**Dissolved Oxygen and Oxygen saturation** show a decreasing tendency downward and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains stable with values around 38.5.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter remains stable throughout the profile.

**Photosynthetically Active Radiation** varies with water depth and has a vertical attenuation of 0.28.

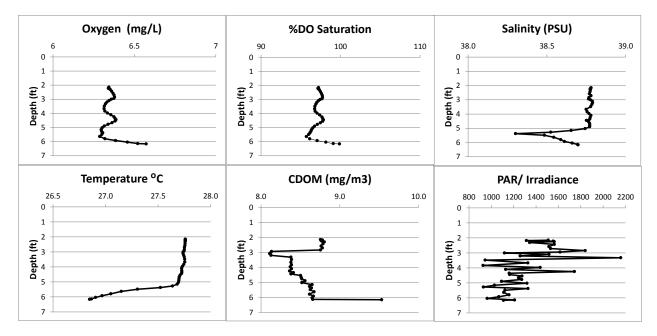


Figure 121. Profile of physicochemical properties of station No. 459B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values within the regulation levels (all values above 42% DO Saturation).

Salinity remains stable with values between 38 and 39.

Water Temperature drops throughout the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter remains stable throughout the profile.

**Photosynthetically Active Radiation** varies with water depth with some oscillations and has a vertical attenuation of 0.29.

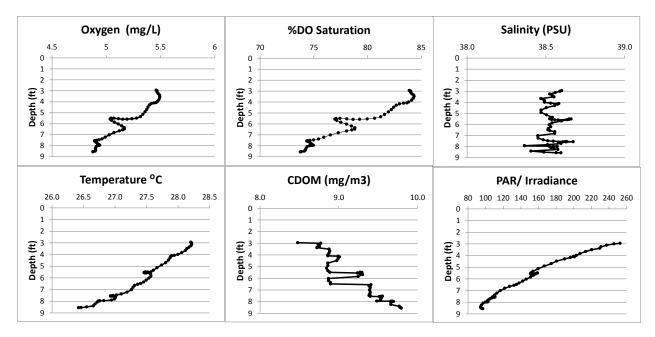


Figure 122. Profile of physicochemical properties of station No. 472A

**Dissolved Oxygen and Oxygen saturation** show a steady decline although water remains well oxygenated with all values above 42% DO Saturation, according to the regulation levels.

Salinity remains very stable with values around 38.5.

Water Temperature drops along the profile with a range of variation of about 1.5 °C.

Colored Dissolved Organic Matter remains very stable.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.57.

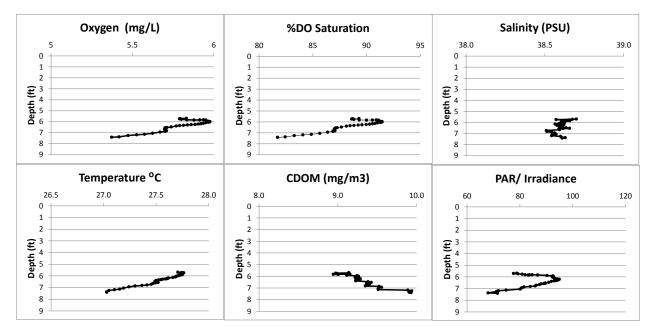


Figure 122. Profile of physicochemical properties of station No. 472B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with values between 70 and 80% and within the regulation levels.

Salinity remains very stable with values around 38.5.

Water Temperature remains very stable.

Colored Dissolved Organic Matter remains very stable.

Photosynthetically Active Radiation varies with water depth without any trend.

## **CTD Casts**

## Survey No 2

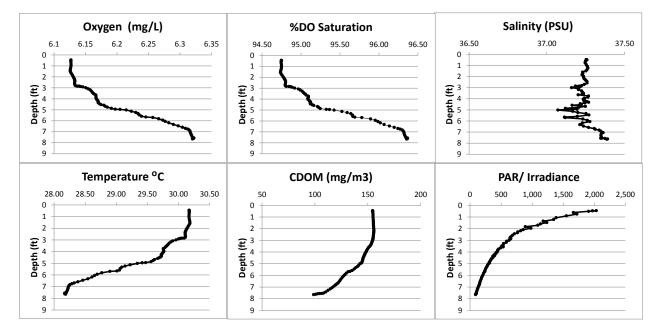


Figure 123. Profile of physicochemical properties of station No. 266C

**Dissolved Oxygen and Oxygen saturation** do not change significantly and readings are around 95%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of about 2 °C.

Colored Dissolved Organic Matter slightly decreases downward from 156 to 99 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 1.30.

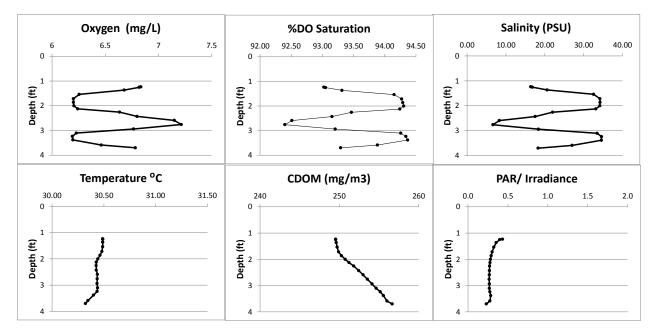


Figure 124. Profile of physicochemical properties of station No. 266B

**Dissolved Oxygen and Oxygen saturation** are practically constant. Given the sensitivity of the sensors it is possible to observe some oscillation along the profile but the change is of only 2%. All values are above 42% DO Saturation, without exceeding the regulation levels.

Salinity remains very stable with values around 30.

Water Temperature remains very stable with values around 30°C.

Colored Dissolved Organic Matter remains stable with an average value of 252 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.50.

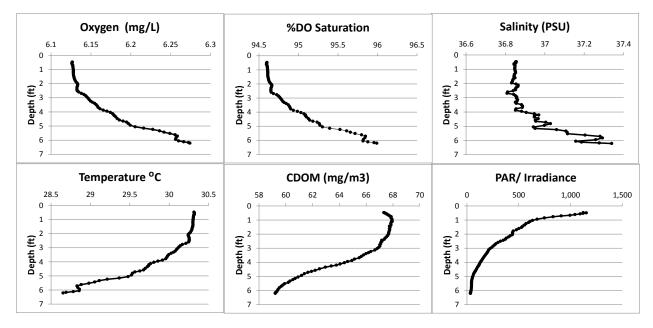


Figure 125. Profile of physicochemical properties of station No. 266A

Salinity y remains stable around 37.

Water Temperature drops along the profile with a range of variation of about 1.7 °C.

**Colored Dissolved Organic Matter** does not change significantly and values oscillate around 65 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 2.00.

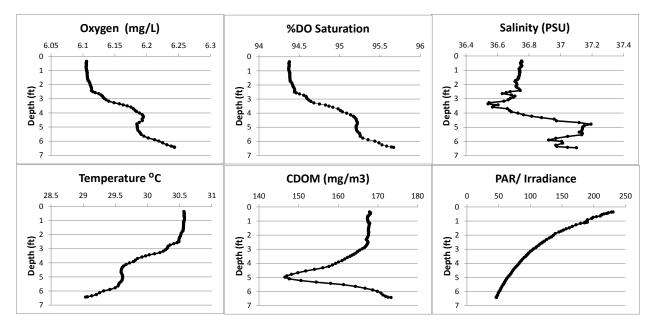


Figure 126. Profile of physicochemical properties of station No. 277A

Salinity y remains very stable around 37.

Water Temperature drops along the profile with a range of variation of about 1.5 °C.

**Colored Dissolved Organic Matter** decreases with water depth from 168 to 147 mg m<sup>-3</sup>at about 5ft when an increment is observed.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 0.86.

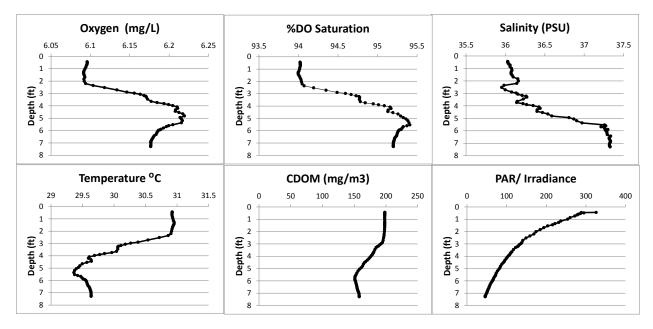


Figure 127. Profile of physicochemical properties of station No. 277C

Salinity y remains very stable around 37.

Water Temperature drops along the profile with a range of variation of about 1.5 °C.

Colored Dissolved Organic Matter slightly decreases from 198 to 151 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 0.88.

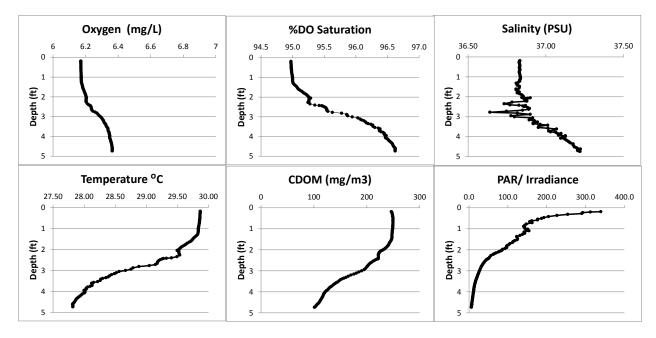


Figure 128. Profile of physicochemical properties of station No. 277B

Salinity y remains stable around 37.

Water Temperature drops along the profile with a range of variation of about 3.5 °C.

Colored Dissolved Organic Matter slightly decreases with water depth from 258 to 101 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.85.

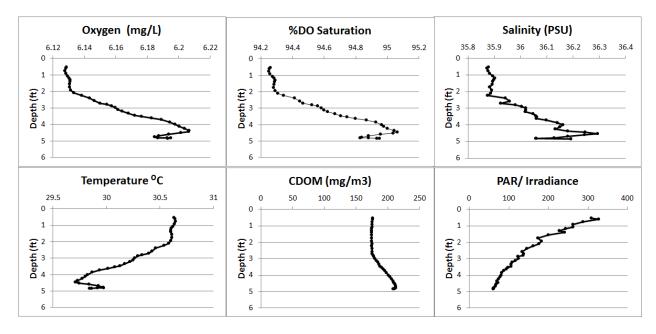


Figure 129. Profile of physicochemical properties of station No. 282C

Salinity y remains stable around 36.

**Water Temperature y** remains stable with a slight drop along the profile within a range of variation of less than 1 °C.

**Colored Dissolved Organic Matter** slightly increases with water depth from 174 to 213 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 1.24.

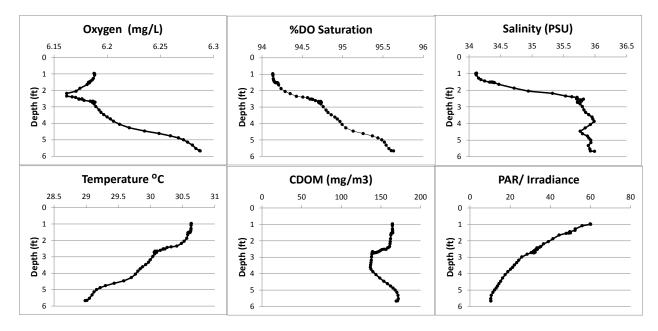


Figure 130. Profile of physicochemical properties of station No. 282A

Salinity y remains stable around 35.

**Water Temperature y** remains stable with a slight drop along the profile within a range of variation of 1.7 °C.

Colored Dissolved Organic Matter remains stable around 155 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.28.

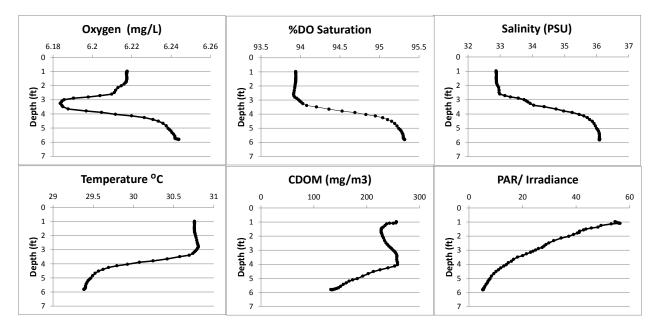


Figure 131. Profile of physicochemical properties of station No. 282B

Salinity y remains very stable around 34.

Water Temperature drops along the profile with a range of variation of about 1.4 °C.

**Colored Dissolved Organic Matter** oscillates until about 4 ft depth, then decreases with water depth from 258 to 132 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.64.

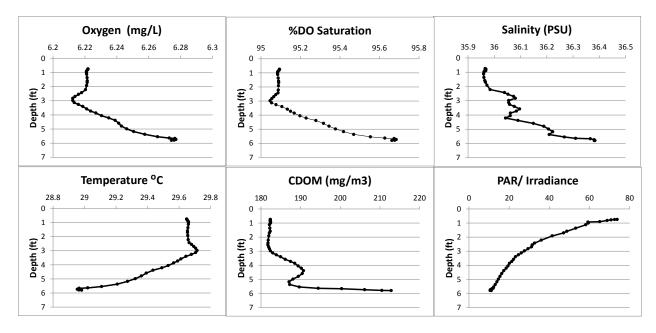


Figure 132. Profile of physicochemical properties of station No. 287C

Salinity y remains very stable around 36 PSU.

Water Temperature remains very stable around 29 °C.

**Colored Dissolved Organic Matter** slightly increases with water depth from 148 to 182 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.19.

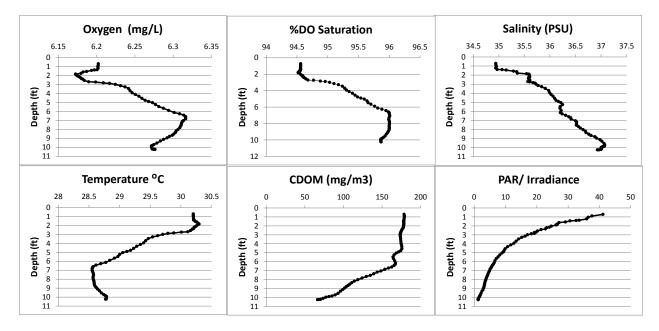


Figure 133. Profile of physicochemical properties of station No. 287A

Salinity y slightly increases along the profile with values up to 37 at the bottom.

Water Temperature drops along the profile with a range of variation of about 1.7 °C.

Colored Dissolved Organic Matter decreases with water depth from 66 to 179 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.09.

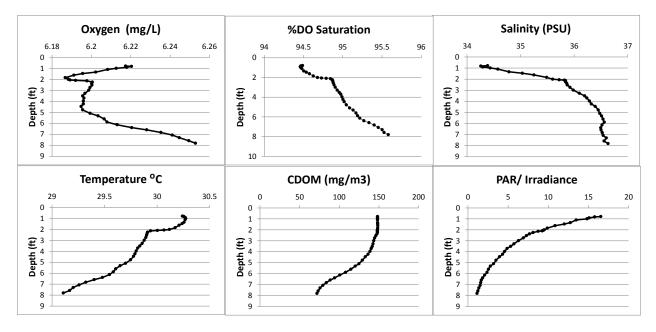


Figure 134. Profile of physicochemical properties of station No. 287B

Salinity y shows an increasing tendency with a change of 2.4 PSU.

Water Temperature shows a decreasing tendency with a range of variation of about 1.2 °C.

Colored Dissolved Organic Matter decreases with water depth from 72 to 148 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 1.22.

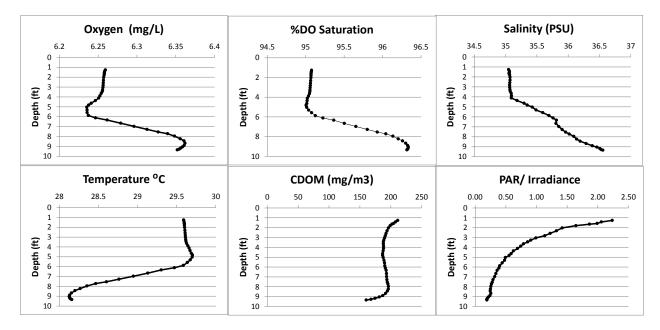


Figure 135. Profile of physicochemical properties of station No. 293C

Salinity remains very stable with values around 36.

Water Temperature remains stable up approximately 5 ft then drops along the profile with a range of variation of about 1.6 °C.

**Colored Dissolved Organic Matter** drops slightly from 211 to 160 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.94.

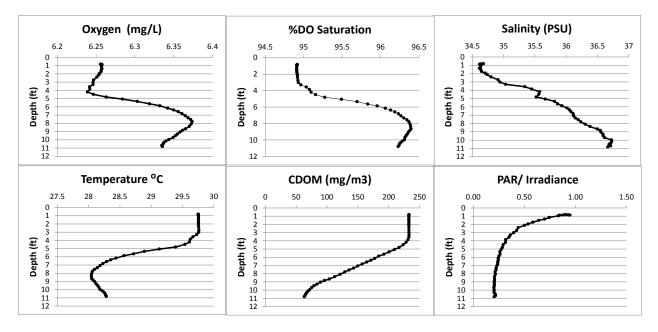


Figure 136. Profile of physicochemical properties of station No. 293A

Salinity shows an increasing tendency with depth and a change of about 2 PSU.

Water Temperature drops along the profile until 8 ft depth with a range of variation of about 1.7 °C.

**Colored Dissolved Organic Matter** drops from 233 to 63 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with increasing water depth and has a vertical attenuation coefficient of 0.48.

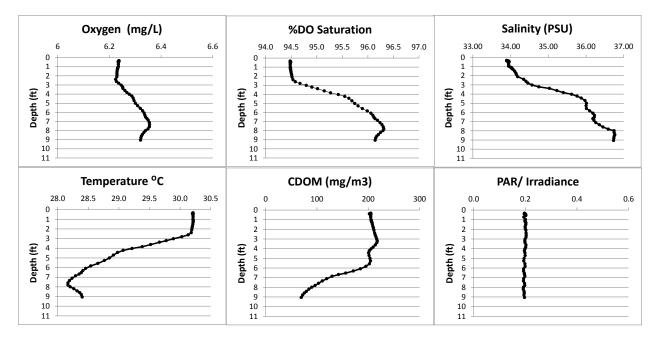


Figure 137. Profile of physicochemical properties of station No. 293B

Salinity y shows an increasing tendency with depth and a change of about 3 PSU.

Water Temperature drops along the profile with a range of variation of about 2 °C.

**Colored Dissolved Organic Matter** decreases with water depth from around 200 to 70 mg m<sup>-3</sup>.

Photosynthetically Active Radiation remains close to zero.

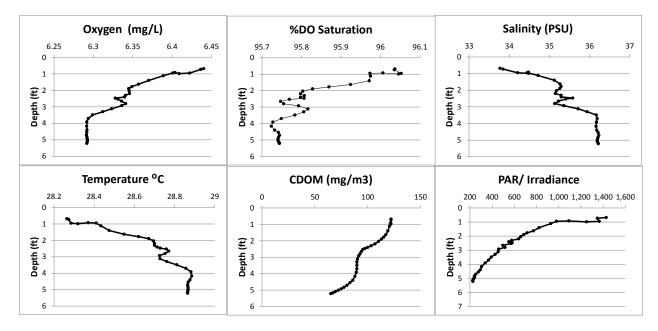


Figure 138. Profile of physicochemical properties of station No. 290A

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with an average value of 95.8%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows a decreasing tendency with depth and a change of about 2.5 PSU.

Water Temperature shows a decreasing tendency but the change is only of 0.6 °C.

Colored Dissolved Organic Matter drops from 122 to 65 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth from values around 1400 to 225 and has a vertical attenuation coefficient of 1.26.

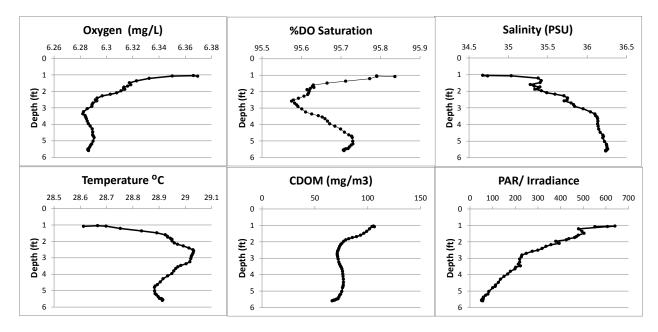


Figure 139. Profile of physicochemical properties of station No. 290C

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with average values of 95.8%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows a decreasing tendency with depth and a change of about 2.5 PSU.

Water Temperature shows a decreasing tendency but the change is only of 0.6 °C.

Colored Dissolved Organic Matter drops from 122 to 65 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth from values around 1400 to 225 and has a vertical attenuation coefficient of 1.26.

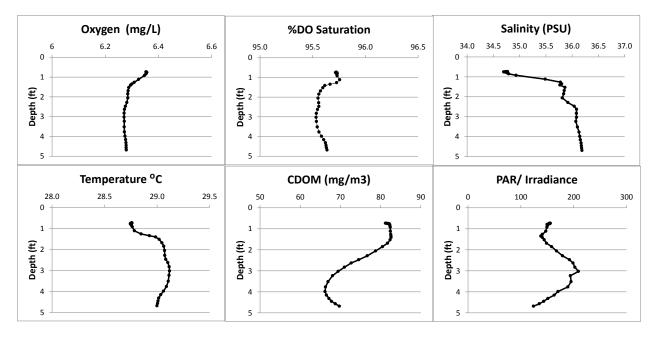


Figure 140. Profile of physicochemical properties of station No. 290B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with an average value of 95.6%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows an increasing tendency with depth and a change of about 1.5 PSU.

Water Temperature remains very stable with values around 29.0 °C.

Colored Dissolved Organic Matter drops from 122 to 65 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth until about 1.3 ft then oscillates between 124 and 209.

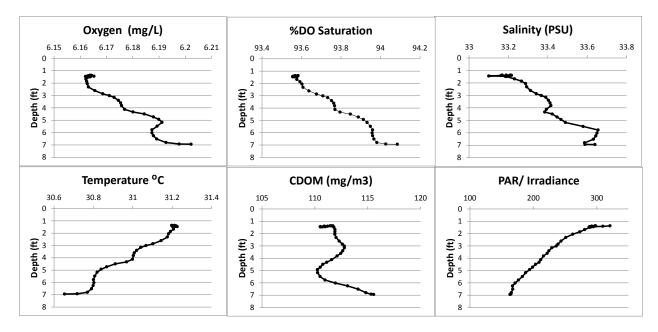


Figure 141. Profile of physicochemical properties of station No. 278B

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with an average value of 93.7%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity remains very stable with an average value of 33.4.

Water Temperature remains very stable with a range of variation of less than 1 °C.

Colored Dissolved Organic Matter remains stable with an average value of 112 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.37.

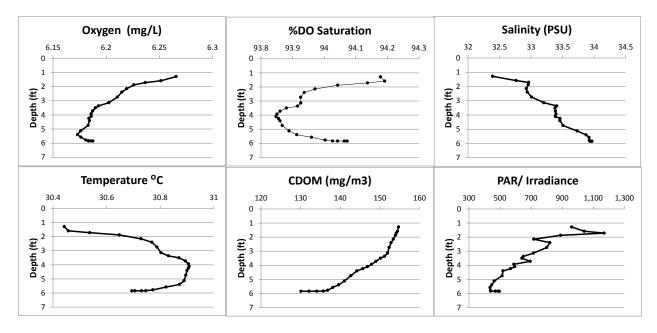


Figure 142. Profile of physicochemical properties of station No. 278C

**Dissolved Oxygen and Oxygen saturation** display a decrease until 4 ft depth, but then the values slightly increase. Water remains well oxygenated with an average value of 94%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows an increase but the range of variation is about 1.6 PSU.

**Water Temperature** is practically constant. Given the sensitivity of the sensors it is possible to define an increasing tendency until 4 ft water depth but the change is of only 0.5°C.

**Colored Dissolved Organic Matter** decreases with water depth from 155 to 130 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.60.

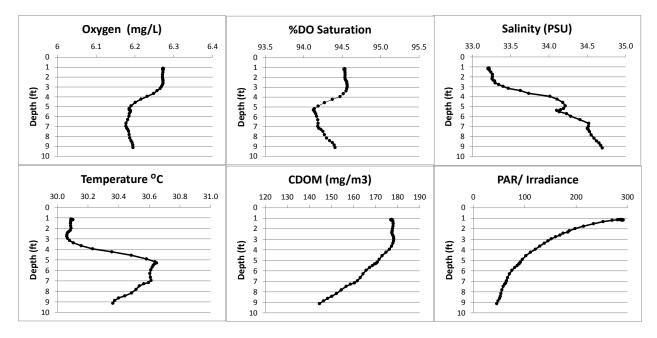


Figure 143. Profile of physicochemical properties of station No. 278A

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with an average value of 94%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows an increase and the range of variation is about 4.1 PSU.

**Water Temperature** is practically constant. Given the sensitivity of the sensors it is possible to define an increasing tendency until about 5 ft but the change is of only 0.6°C.

**Colored Dissolved Organic Matter** decreases with water depth from 145 to 258 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with water depth and has a vertical attenuation coefficient of 0.77.

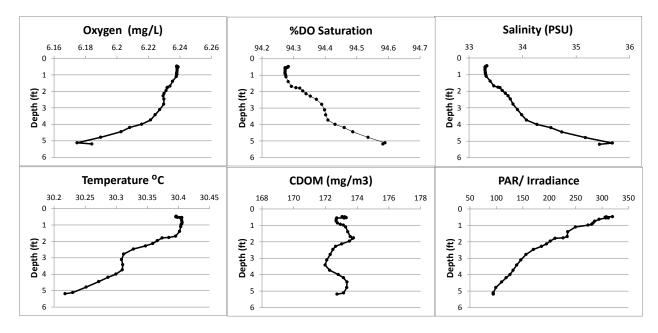


Figure 144. Profile of physicochemical properties of station No. 278D

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with an average value of 94.4%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows continuous increase. Range of variation is about 2.4 PSU

Water Temperature remains very stable with an average value of 30.4°C.

Colored Dissolved Organic Matter remains stable with an average value of 173 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.86.

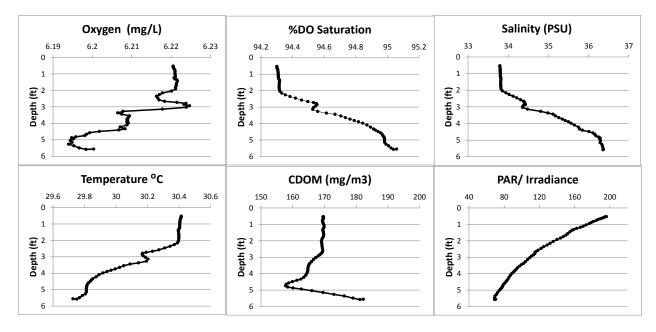


Figure 145. Profile of physicochemical properties of station No. 278E

**Dissolved Oxygen and Oxygen saturation** do not change significantly and water remains well oxygenated with an average value of 94.6%, without exceeding the regulation levels (all values above 42% DO Saturation).

Salinity shows continuous increase. Range of variation is about 2.6 PSU.

Water Temperature remains very stable with an average value of 30.1°C.

Colored Dissolved Organic Matter remains stable with an average value of 168 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.69.

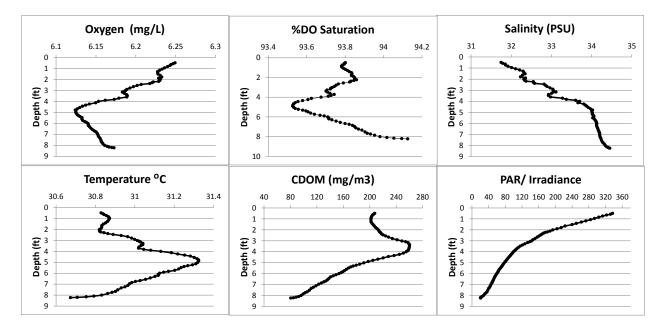


Figure 146. Profile of physicochemical properties of station No. 278F

Salinity shows continuous increase. Range of variation is about 2.7 PSU.

Water Temperature remains stable with an average value of 31°C.

**Colored Dissolved Organic Matter** drops after 3.5 ft from values around 260 to 81 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.05.

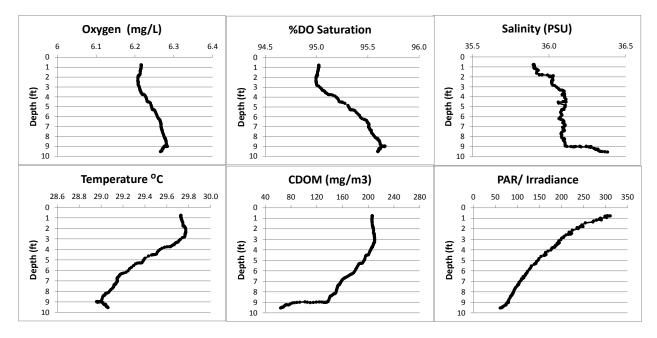


Figure 147. Profile of physicochemical properties of station No. Station 472B

Salinity remains very stable with an average value of 36.1 PSU.

Water Temperature remains very stable with an average value of 29.4°C.

Colored Dissolved Organic Matter remains stable with an average value of 168 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.53.

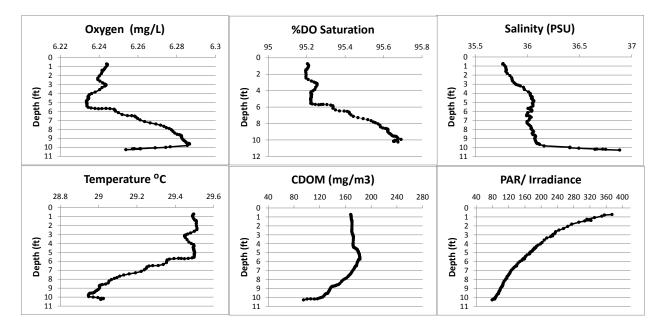


Figure 148. Profile of physicochemical properties of station No. 472A

Salinity remains very stable with an average value of 36.1 PSU.

Water Temperature remains very stable with an average value of 29.3°C.

Colored Dissolved Organic Matter remains stable with an average value of 161 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.47.

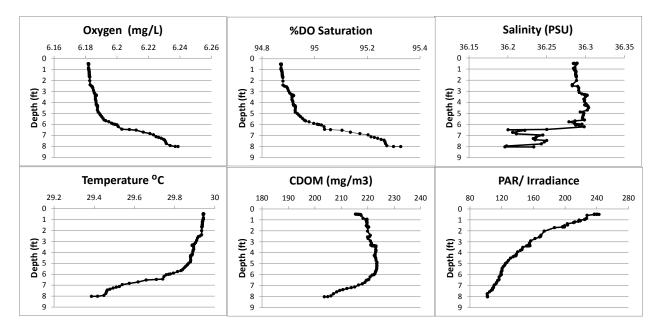


Figure 149. Profile of physicochemical properties of station No. 459A

Salinity remains very stable with an average value of 36.3 PSU.

Water Temperature remains very stable with an average value of 29.8°C.

Colored Dissolved Organic Matter remains stable with an average value of 220 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.37.

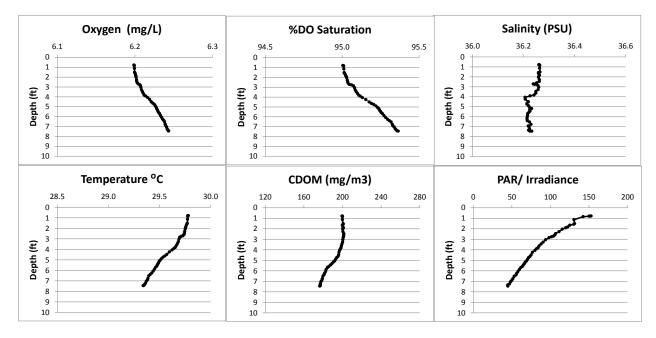


Figure 150. Profile of physicochemical properties of station No. 459B

Salinity remains very stable with an average value of 36.2 PSU.

**Water Temperature** remains very stable with an average value of 29.6°C. Given the sensitivity of the sensors it is possible to define a slight increasing tendency but the change is of 0.4°C.

Colored Dissolved Organic Matter remains stable with an average value of 193 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.58.

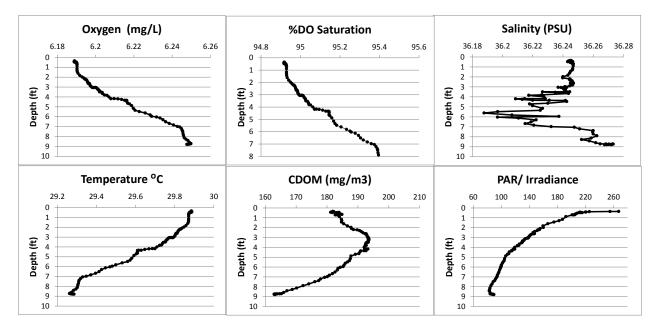


Figure 151. Profile of physicochemical properties of station No. 458B

Salinity remains very stable with an average value of 36.2 PSU.

**Water Temperature** remains very stable with an average value of 29.6°C. Given the sensitivity of the sensors it is possible to define a slight increasing tendency but the change is of 0.6°C.

**Colored Dissolved Organic Matter** remains stable with an average value of 184 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.36.

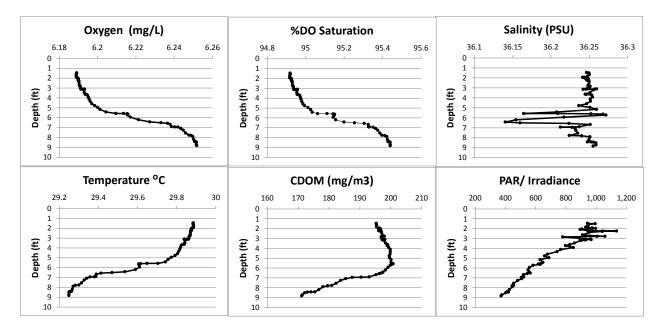


Figure 152. Profile of physicochemical properties of station No. 458A

Salinity remains very stable with an average value of 36.2 PSU.

**Water Temperature** remains very stable with an average value of 29.7°C. Given the sensitivity of the sensors it is possible to define a slight increasing tendency but the change is of 0.6°C.

Colored Dissolved Organic Matter remains stable with an average value of 194 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.45.

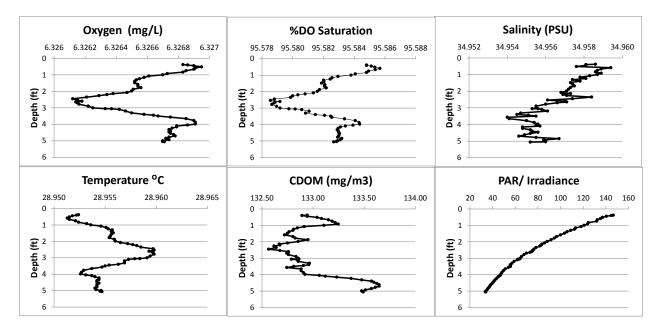


Figure 153. Profile of physicochemical properties of station No. 148C

Salinity remains very stable with an average value of 35.

Water Temperature remains very stable with an average value of 29°C.

Colored Dissolved Organic Matter remains stable with an average value of 133 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth from 147 to 34 and has a vertical attenuation coefficient of 1.03.

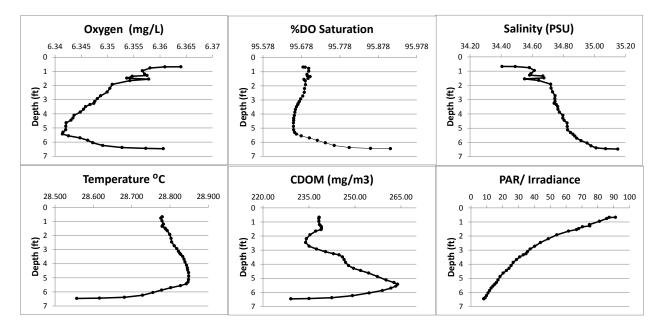


Figure 154. Profile of physicochemical properties of station No. 148A

Salinity remains very stable with an average value of 34.8 PSU.

Water Temperature remains very stable with an average value of 28.8°C.

Colored Dissolved Organic Matter remains stable with an average value of 245 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.30.

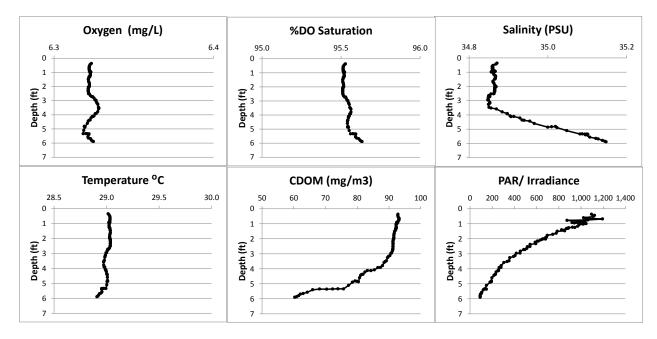


Figure 155. Profile of physicochemical properties of station No. 148B

Salinity remains very stable with an average value of 34.9.

Water Temperature remains very stable with an average value of 29°C.

Colored Dissolved Organic Matter remains stable with an average value of 87 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth from 1194 to 92 and has a vertical attenuation coefficient of 1.49.

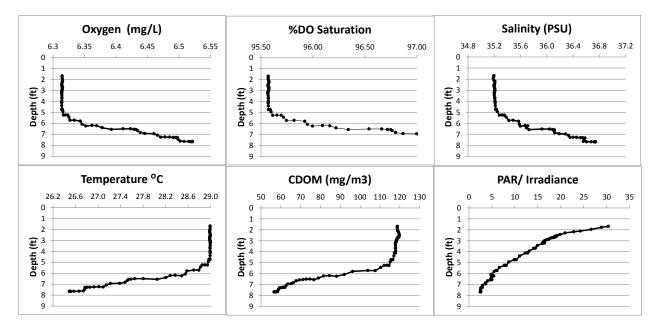


Figure 156. Profile of physicochemical properties of station No. 147B

Salinity shows continuous increase. Range of variation is about 1.6 PSU.

Water Temperature decreases with water depth. Range of variation is about 2.5°C.

**Colored Dissolved Organic Matter** drops from 120 to 57 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.32.

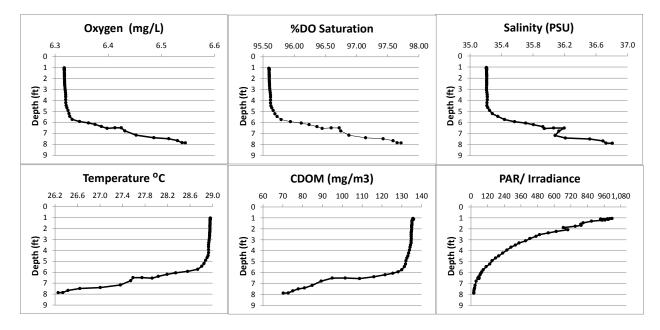


Figure 157. Profile of physicochemical properties of station No. 147A

Salinity shows continuous increase. Range of variation is about 1.6 PSU.

Water Temperature decreases with water depth. Range of variation is about 2.7°C.

**Colored Dissolved Organic Matter** drops from 136 to 70 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.84.

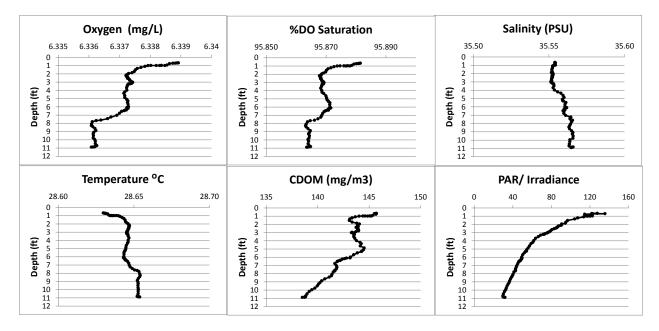


Figure 158. Profile of physicochemical properties of station No. 137B

Salinity remains constant with an average value of 35.6 PSU.

Water Temperature remains constant with an average value of 28.6°C.

**Colored Dissolved Organic Matter** does not change significantly and averages 143 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.45.

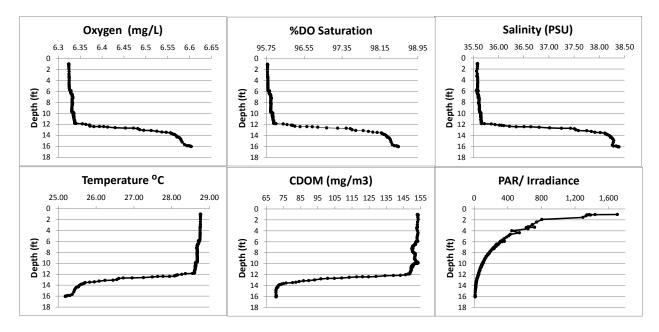


Figure 159. Profile of physicochemical properties of station No. 137A

Salinity shows continuous increase. Range of variation is about 2.8 PSU.

Water Temperature decreases with water depth. Range of variation is about 3.6°C.

**Colored Dissolved Organic Matter** drops from 137 to 71 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.95.

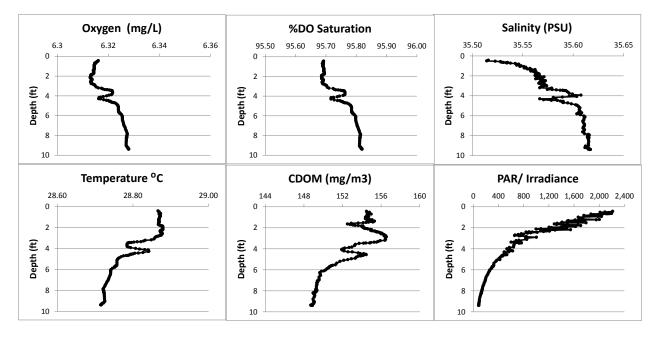


Figure 160. Profile of physicochemical properties of station No. Station 137C

Salinity remains constant with an average value of 35.6 PSU.

Water Temperature remains constant with an average value of 28.8°C.

**Colored Dissolved Organic Matter** does not change significantly and averages 153 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 1.26.

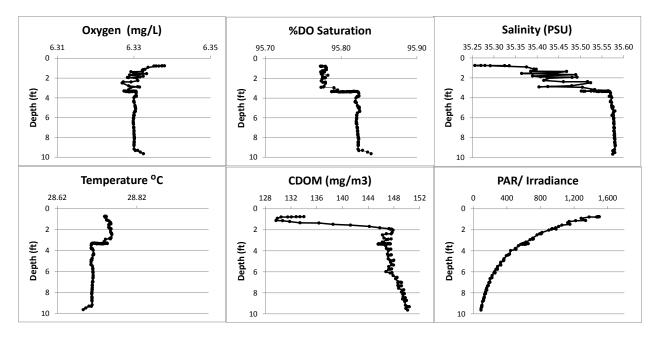


Figure 161. Profile of physicochemical properties of station No. 137D

Salinity remains constant with an average value of 35.5 PSU.

Water Temperature remains constant with an average value of 28.7°C.

**Colored Dissolved Organic Matter** does not change significantly and averages 146 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 1.02.

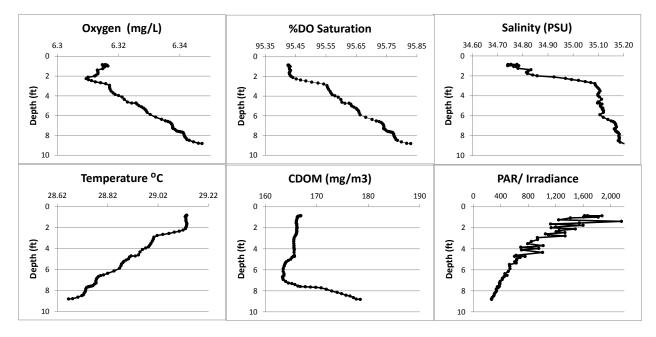


Figure 162. Profile of physicochemical properties of station No. 132C

Salinity remains constant with an average value of 35.1 PSU.

Water Temperature remains constant with an average value of 28.9°C.

**Colored Dissolved Organic Matter** does not change significantly and averages 167mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.75.

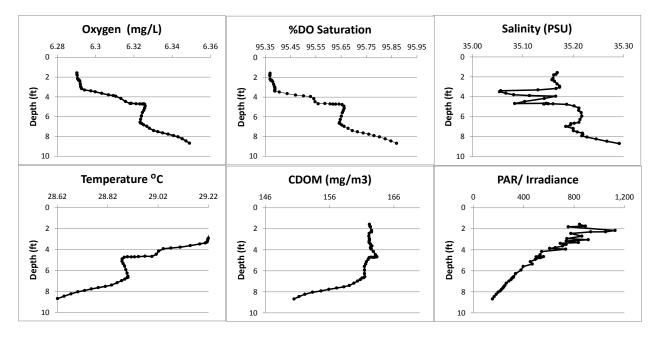


Figure 163. Profile of physicochemical properties of station No. 132B

Salinity remains constant with an average value of 35.2 PSU.

Water Temperature remains constant with an average value of 29°C.

**Colored Dissolved Organic Matter** does not change significantly and averages 161mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth with some oscillations and has a vertical attenuation coefficient of 0.85.

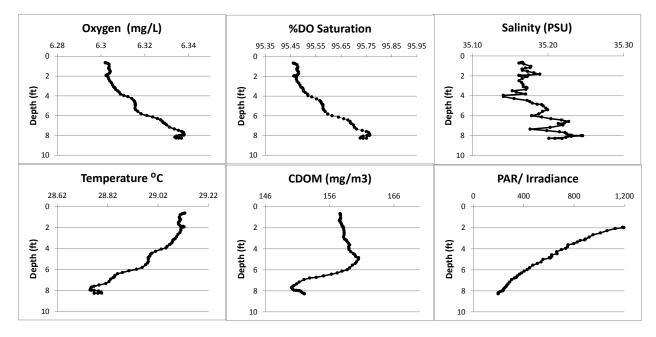


Figure 164. Profile of physicochemical properties of station No. 132A

Salinity remains constant with an average value of 35.2 PSU.

Water Temperature remains constant with an average value of 29°C.

**Colored Dissolved Organic Matter** does not change significantly and averages 156 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with water depth and has a vertical attenuation coefficient of 0.88.

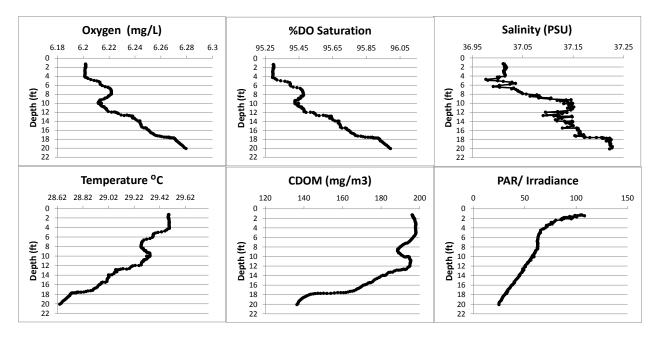


Figure 165. Profile of physicochemical properties of station No. 29C

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of about 0.9 °C.

**Colored Dissolved Organic Matter** decreases with water depth from around 198 to 84 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth and has a vertical attenuation coefficient of 0.18.

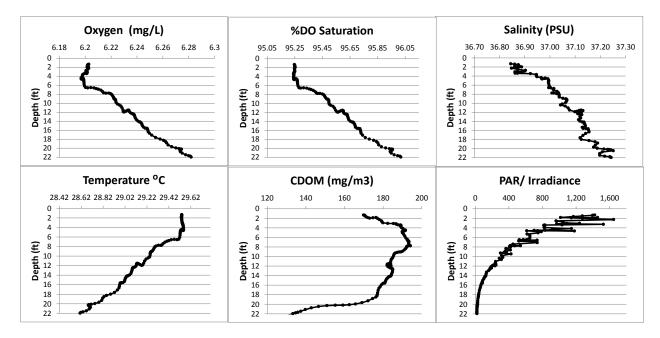


Figure 166. Profile of physicochemical properties of station No. 29A

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of about 1 °C.

Colored Dissolved Organic Matter ranges between 127 and 194 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth with some oscillations and has a vertical attenuation coefficient of 0.71.

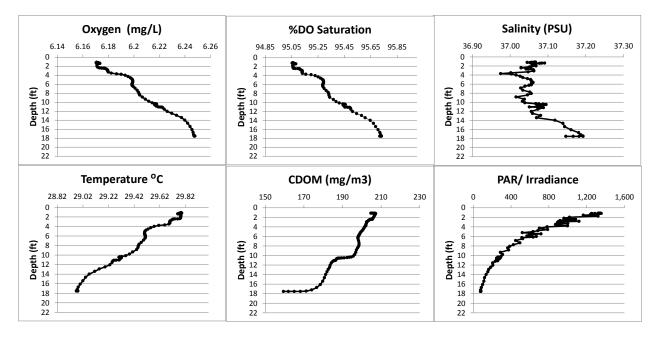


Figure 167. Profile of physicochemical properties of station No. 29B

Salinity remains very stable with values around 37.1.

Water Temperature drops along the profile with a range of variation of 0.8 °C.

**Colored Dissolved Organic Matter** drops along the profile with a range of variation of 48 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth with some oscillations and has a vertical attenuation coefficient of 0.56.

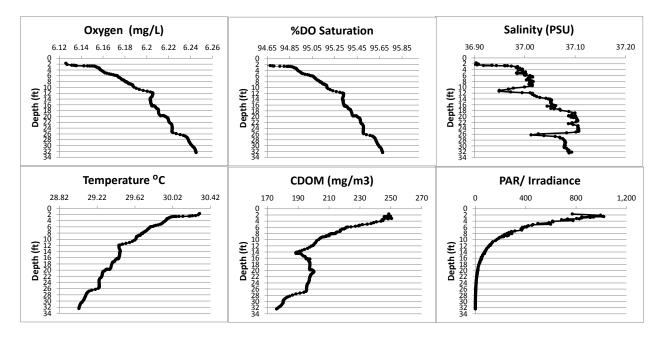


Figure 168. Profile of physicochemical properties of station No. 28A

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of 1.3 °C.

**Colored Dissolved Organic Matter** drops along the profile with a range of variation of 75 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** decreases with increasing water depth with some oscillations and has a vertical attenuation coefficient of 0.71.

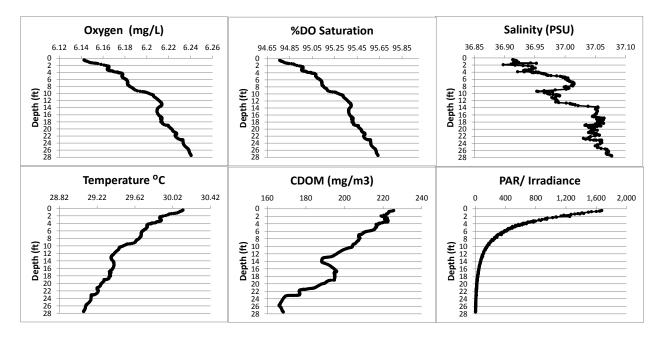


Figure 169. Profile of physicochemical properties of station No. 28B

Salinity remains very stable with values around 37.

Water Temperature drops along the profile with a range of variation of 1.1 °C.

**Colored Dissolved Organic Matter** drops along the profile with a range of variation of 59 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with increasing water depth with some oscillations and has a vertical attenuation coefficient of 0.81.

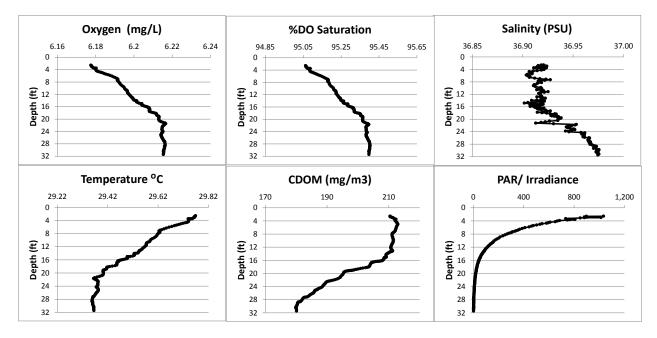


Figure 170. Profile of physicochemical properties of station No. 28C

Salinity remains very stable with values around 37.

Water Temperature drops along the profile but the change is only of 0.4 °C.

**Colored Dissolved Organic Matter** drops along the profile with a range of variation of 33 mg m<sup>-3</sup>.

**Photosynthetically Active Radiation** exponentially decreases with increasing water depth and has a vertical attenuation coefficient of 0.74.