

capture the expected range of temporal variability and covers a significant portion of the period when the sturgeon population in the region has been stable or increasing. Additionally, the monitoring conducted prior to 1991 was conducted less frequently and often only covered portions of the year. Data collection after 1990 was more consistent, with a greater amount of data being collected that generally covered all months of the year. Therefore, to avoid biasing the summary of the existing DO conditions, the data collected prior to 1991 were omitted from further data analyses.

A summary of the existing DO conditions during the period from 1991 through 2011 for the portions of the Santa Fe and New Rivers potentially utilized by the Oval Pigtoe mussel is provided in **Table 1** by river system and individual river segment (River km/WBID). Similarly, the summary statistics for the portions of the Suwannee, Santa Fe, and Withlacoochee Rivers potentially utilized by the gulf sturgeon are provided in **Table 2** by river system and individual river segment.

3 Determining Whether DO Values Have Decreased Below the Baseline Distribution

To evaluate whether DO values have decreased below the baseline distribution, it is recommended that a) no more than 10 percent of the daily average values be below the 10th percentile of the existing data distribution for that river segment, b) no more than 50 percent of the daily average values be below the median of the existing data distribution for that river segment. The 10th percentiles and median DO values for each of the affected river segments are provided in **Table 3**.

The recommended rule language is:

In the portions of the Suwannee, Withlacoochee (North), and Santa Fe Rivers utilized by the Gulf Sturgeon, and in the portions of the Santa Fe and New Rivers utilized by the oval pigtoe mussel, DO levels shall not be lowered below the baseline distribution such that more than 50 percent of daily average values are below the median of the baseline distribution or more than 10 percent of the daily average values are below the 10th percentile of the baseline distribution for the applicable waterbody. The baseline distributions are provided in Appendix I of the Technical Support Document for the Derivation of Dissolved Oxygen Criteria to Protect Aquatic Life in Florida's Fresh and Marine Waters, which is incorporated by reference.

When assessing these waters in the future, compliance with both the 10th percentile and median DO values will be evaluated using a binomial hypothesis test at the 80 percent and 90 percent confidence levels necessary to place a water segment on the Planning List and Verified Lists, respectively, for TMDL development. The use of the binomial hypothesis test is consistent with the assessment for other water quality parameters conducted under Chapter 62-303, F.A.C. The number of exceedances required to have 80 percent and 90 percent confidence that more than 10 percent of the daily average values are below the applicable 10th percentile value are provided in Chapter 62-303, F.A.C. Tables 1 and 3, respectively. The number of exceedances required to have 80 percent and 90 percent confidence that more than 50 percent of the daily average values are below the applicable median value for sample sizes up to 419 are provided in **Table 4**.