for the 12 percent occurrence frequency. The graph in Figure 6 depicts the relationship between daily maximum salinity which is exceeded 12 percent of the time, and river mile, for the base (current condition) and the 155 mgd upstream water withdrawal scenarios. The difference between the locations predicted by these models for the position of the 1 psu salinity which is exceeded 12 percent of the time, equaling 0.86 mi (1.38 km), was proportioned to the expected withdrawal for the Black Creek WRD Project, to estimate the possible distance change for tidal swamp and tidal marsh community boundaries. The resulting upstream movement in the 12 percent occurrence line was similar to that predicted by Kinser et al. (2012), with the 7.4 mgd withdrawal producing a 217 ft (66 m) upstream change in the freshwater tidal wetland boundary, and the 4.1 mgd withdrawal producing a 120 ft. (37 m) upstream change.

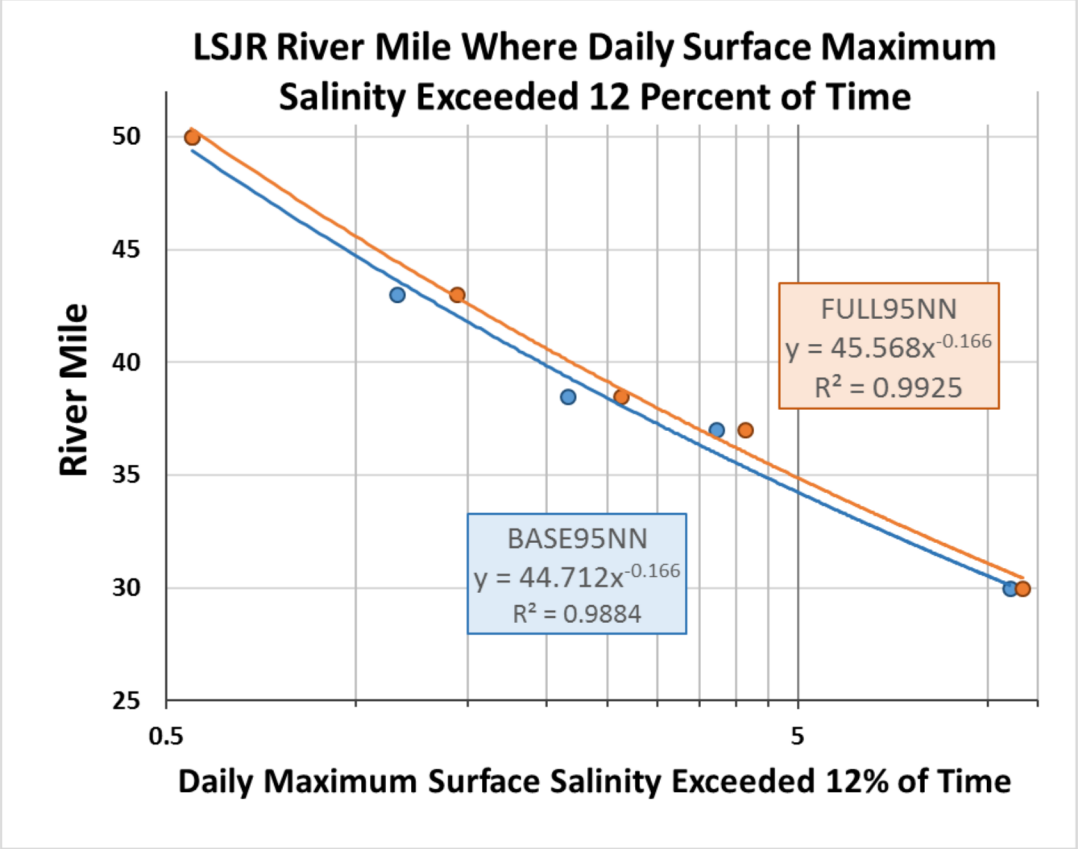

Figure 6. Relationship between Lower St. Johns River Mile (mouth = 0) and the salinity values that are exceeded 12 percent of the time. Salinity data provided by simulations of the Lower St. Johns River application of the EFDC hydrodynamic model for the Water Supply Impact Study.

5 Submerged Aquatic Vegetation

Though relatively small in terms of aerial coverage, the littoral zone of the Lower St. Johns River represents an important and vital habitat, and typically contains far greater abundance and diversity of fish and aquatic invertebrates than the open, pelagic environment. Due to the narrower channel, steeper shoreline and bulkheading, and large tide range, the downstream, Jacksonville portion of the LSJR does not support underwater rooted vascular plant