USING THE COASTAL SALINITY INDEX FOR MONITORING DROUGHT IN THE CAROLINAS

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A number of activities are currently (2017) underway to further utilize the Coastal Salinity Index (CSI) for monitoring drought in the Carolinas. Scientists have recognized the necessity of defining drought within a coastal context where an ecological drought represents the influence of increased salinity stress on the structure and function of ecological habitats. To address the need for a unique coastal drought index and the importance of salinity as a coastal ecological stressor, a CSI was developed by using an approach similar to the Standardized Precipitation Index (SPI). Similar to the SPI, the CSI is computed for unique time intervals (for example 1-, 6-, 12-, and 24- month intervals) that can characterize the onset and recovery of short- and long-term drought. Evaluation of the CSI indicates that the index can be used for different estuary types (for example: brackish, oligohaline, or mesohaline), for regional comparison between estuaries, and as an index of wet conditions (high freshwater inflow) in addition to drought (saline) conditions. Three activities are planned that will increase the use of the CSI. One, a software package is being developed for the consistent computation of the CSI that includes preprocessing of salinity data, filling missing data, computing the CSI, post-processing, and generating the supporting metadata. Two, the CSI is being computed at more sites along the Gulf of Mexico and the Southeastern Atlantic Ocean. Three, by using a real-time salinity data stream, the real-time computation and dissemination of the index at a number of sites in the Carolinas is being prototyped.

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