

Monitoring Program for intertidal Sargassum in South Florida

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Pelagic *Sargassum* offers an array of environmental benefits acting as a mode of transport of nutrients into terrestrial environments as well as providing food and shelter for aquatic species. However, since 2011 the unusual influx of large *Sargassum* strandings in several beaches along the Caribbean are causing environmental and socioeconomic problems. These events may be attributed to changes in oceanic nutrient availability, and could result in an increase of nutrients after decomposition of the stranded *Sargassum*. The goal of this research is to monitor the nutrient tissue content of pelagic *Sargassum* in south Florida. Three samples of *S. fluitans*, and three of *S. natans* were collected at Bill Baggs cape Florida State Park. Each sample was cleaned, dried for 48 h at 68C, and grounded. Carbon and nitrogen content was estimated using a CHN analyzer, and P was estimated using a dry-oxidation-acid hydrolysis extraction followed by a colorimetric analysis. Mean N tissue content was 1.08 ± 0.23 and mean P was $0.0348 \pm .0122$. These results show no significant deficit of nutrient composition compared to global mean values for macrophytes of 1.8% N and a 0.02% P (Duarte 1992). The C:N ratio of 43.15 ± 7.43 , and the C:P ratio of $3175 \pm 1039:1$ C:P showed a high content of C relative to N and P. The N:P ratio of 66 ± 24.35 showed a lower P content relative to N. The stoichiometric C:N:P ratio of $3175 \pm 1039: 66 \pm 24.35:1$ of the south Florida samples compared to the 1,106:38:1 average ratio globally (Atkinson and Smith 1983) demonstrate a large content of C and N. It is clear that the samples were not limited by nutrients. We suggest that a large availability of C and N can be correlated with the massive growth of these species.