

Changes in the Morphology of Turf Algae Along Urban Gradients.

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Filamentous turf algae is commonly found in many coastal regions of the world and is becoming more prevalent with urbanization. In areas where it covers a large proportion of the seafloor, it may inhibit recovery of foundation species. It also acts as a trap for sediment which can create hypoxic conditions at small scales. Ecologists often refer to turf algae as a single, homogenous functional group. While its expansion in urban areas has been well documented, it remains unknown whether the function of turf algae is similar across urban gradients. This study characterized the morphology of turf algae across an urban gradient in Puget Sound. I examined photographs of algae in Puget Sound from various sites taken in 2014. I used the software ImageJ to estimate turf height and collect color value ('redness') measurements that reflect their relative pigmentation and sedimentation load. Percent coverage was calculated using the annotation software, CoralNet. Urbanization was not a significant predictor of turf cover or height, however, it appears to be an important correlate of redness, with less pigmented/more heavily sedimented turf algae occurring in low flow, urban areas. Further work is needed to determine whether heavily sedimented turfs in urban areas are functionally equivalent to turf algae in less impacted areas. The results of this study suggest that filamentous turf algae may play different ecological roles depending on urban conditions.