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Examining the effects of hydrodynamic features on biofouling growth and suppression LENA DUBITSKY, MARK MENESSES, Boston University, JESSE BELDEN, Naval Undersea Warfare Center - Division Newport, JAMES BIRD, Boston University — The growth of biofouling organisms such as algae, barnacles, and mussels on submerged surfaces is a ubiquitous phenomenon and generally undesirable. Heavy biofouling on ships leads to increased drag and subsequent fuel costs, and even small amounts of fouling can interfere with scientific instruments in the field. It is known that biofouling growth is a consequence of both biological and environmental conditions, with the latter including a variety of possible fluid mechanic phenomena. While various researchers have investigated select hydrodynamic effects, a comprehensive picture linking flow features to fouling development is elusive. Through field experiments and laboratory analysis, we examine the interactions between fluid flow structures, interfaces, and biofouling growth patterns. Such characterization has the potential to improve dynamic anti-fouling mechanisms.

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