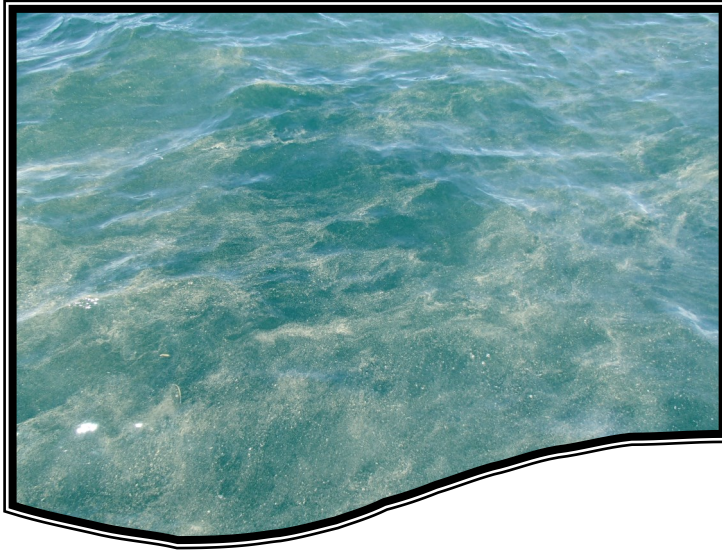


# Sawdust in the Water? Trichodesmium Algal Blooms

Boaters and beachgoers in southwest Florida periodically observe what appears to be large mats of “sawdust” floating on the water’s surface. What they are seeing is not the remnants of someone’s woodworking project, but a marine cyanobacteria (*also known as blue green algae*) called Trichodesmium.



blooms can turn the water red or pink when stressed cells leak out water soluble, accessory pigments.

Unlike other algal blooms that occur in the region, Trichodesmium blooms are not related to coastal nutrient sources or pollution. Most or all of the nutrients Trichodesmium requires are taken up directly from the water.

Trichodesmium naturally occurs in tropical and subtropical waters including the Gulf of Mexico. When environmental conditions are right, Trichodesmium cells rapidly reproduce resulting in a bloom of the cyanobacteria that can be visible by onlookers.

According to the Florida [Fish and Wildlife Research Institute](#), Trichodesmium cells form long chains, called trichomes. Trichomes then can gather into colonies called “puffs” or “tuffs,” and these colonies can aggregate at the surface of the water and form large mats that can extend for miles (also called “sailor’s sawdust”). The amount of Trichodesmium on the surface may vary with time of day, as this species is capable of migrating up and down in the water column. Blooms generally occur offshore in nutrient-poor waters, but currents and winds can push them near shore.

Trichodesmium blooms can take on a range of colors depending on stage of the bloom. Healthy blooms are typically brown in color, while blooms in initial decay may take on a green appearance due to accessory pigments leaching out and exposing the cyanobacteria’s chlorophyll. When the chlorophyll begins to deteriorate the blooms appear white in color. Trichodesmium blooms are also reported to have a unique “sweet” smell when it decays and large

Interestingly, the occurrence of Trichodesmium blooms in Florida is thought to be connected to weather events on the other side of the planet. Blooms in the Gulf of Mexico tend to occur between May and September, which is also a time of high storm activity in the Sahara Desert in Africa. Iron-rich dust from these storms are transported across the Atlantic Ocean by wind currents, and deposited into the Gulf of Mexico. Trichodesmium cells contain enzymes that utilize this high concentration of deposited iron to convert nitrogen into useable forms.

While Trichodesmium blooms can be aesthetically unappealing, it is not toxic and does not pose a health risk to humans. Ironically, Trichodesmium blooms are often seen prior to a Florida red tide bloom, which is a toxic algae that can result in numerous fish kills and human health issues.

**Reference:** <http://myfwc.com/research/redtide/archive/historical-events/trichodesmium-fl-2004/>

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