Focus on the Bay: “Red Tides”

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Most marine algae are harmless and, similar to plants on land, form the base of the marine food chain. Some algae, however, produce toxins that can concentrate in fish or shellfish, which can be passed on to people. When harmful algal blooms are present, health departments close the harvest of shellfish and issue warnings for consumption of some fish species. For unknown reasons, these harmful algal blooms, often called “Red Tides”, have become more common and more intense in recent decades.

Researchers in California and Scotland have been studying how toxic algal blooms form in the ocean and recently have come up with some interesting results. Professor Carl Carrano of San Diego State University and colleagues Frithjof Kuepper and David Green at The Scottish Association for Marine Science in Oban, Scotland, are looking at compounds made by bacteria that they believe transform inert iron compounds into forms that can be used by marine algae. Iron is a limiting nutrient for plant growth in the ocean, and researchers believe that certain kinds of bacteria can release iron into the water and thus trigger sudden increases in algae. The researchers believe that polluted waters may be high in iron and that symbiotic bacteria may be making this iron more available to the toxic algae. If California Sea Grant researchers are right, bacteria that live symbiotically with toxic algae may be just as important as nutrients in polluted waters in fueling the growth of some toxic algal blooms.

For more information please contact Steve Gabrysh of California Sea Grant at 858-534-4446, or visit California Sea Grant on the web:
http://www.csgc.ucsd.edu/STORIES/RedTideBacteria.html