Cleaner Bottoms, Part III, Hull Materials: An Environmentally Friendly Method of Reducing Barnacle Growth and Improving the Quality of Our Waterways Using Ultrasonic Waves

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The inspiration for this 3-year study comes from a desire to find a better way to prevent barnacle growth on marine vessels and to determine if the type of hull material used in the manufacturing of marine vessels made a significant difference in the elimination or reduction of barnacle growth using PIEZO electric speakers emitting ultrasonic sound. Anti-fouling paint, currently used consists of costly, heavy, toxic materials and functions by leeching metals into the waterways ultimately making their way up the food chain back to human consumption. It also puts extra weight on boats causing a need for higher power and consumption of fuel which emits gasses into the atmosphere, further polluting our environment. Although the scientist incorrectly predicted that the ultrasonic method would be most successful at reducing barnacle growth on steel, said method was capable of controlling barnacle growth on all four commonly used hull materials (fiberglass, wood, aluminum and steel), making it effective across the full spectrum of hull materials. Results showed the most suitable hull material for use with the ultrasonic method should be based on availability and cost effectiveness for each consumer, but certainly effective for all marine industries and marine vessels around the world, including third world countries to the most developed nations, from fishing vessels to military ships. Immediate applications include installing the ultrasonic method on both new construction and existing vessels, thus reducing the use of harmful chemicals released by anti-fouling paints currently used to control growth of barnacles.

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