

# Abstract

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## **The Impact of Implementing the International Convention on the Control of Harmful Anti-fouling Systems in Ships (AFS Convention) on the Marine Environment**

Marine fouling is the settlement and growth of a variety of marine organisms, such as bacteria, diatoms, protozoa and algae spores on structures immersed in seawater, such as ship's hulls, navigation buoys, and sonar equipment. Anti-fouling refers to material systems used to prevent the accumulation of biological material on submerged surfaces. Bio-fouling results in higher fuel consumption and can also facilitate the transport of harmful Non-Indigenous Species (NIS). Antifouling technologies incorporating biocides (e.g., Tributyltin) have been developed to prevent fouling. Their widespread use, however, raised concerns about their toxic effects on marine communities. The International Convention on the Control of Harmful Anti-fouling Systems in Ships (AFS Convention) is a 2001 International Maritime Organization (IMO) treaty, whereby states agree to ban the use of harmful anti-fouling paints and other anti-fouling systems that contain harmful substances. Particularly, the use of the organotin Tributyltin is prohibited, since leaching of that chemical from the hulls of ships has been shown to cause serious effects on some sea creatures. Although the AFS Convention has entered into force, its full implementation has not yet been appropriately achieved. Most of the ratifying States have delegated the Classification Society to inspect their ships to ensure the implementation of the provisions of the Convention. Since painting ships takes place in dry docks, the full control falls in the hands of Classification Societies.