

Antifouling Boat Paints: Update 2024

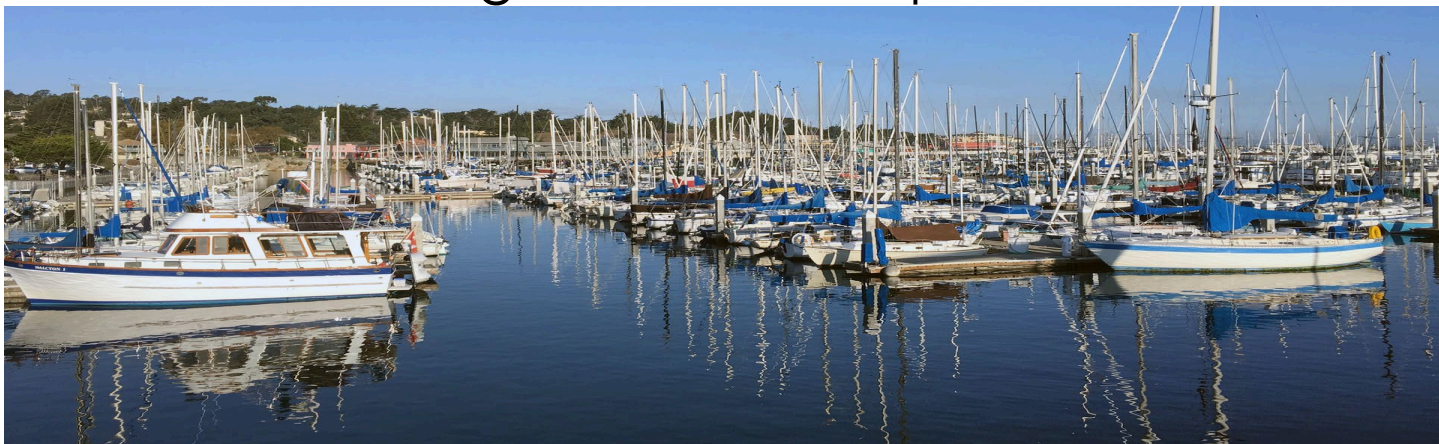


Figure 1: Boats at a marina.

WHY IT MATTERS

Boats kept in marine water bodies are exposed to organisms such as bacteria or barnacles. When these organisms grow and colonize on the surface of vessels and structures, it is called “marine fouling.” Marine fouling can cause physical damage and help spread invasive species.

Boat owners often use hull paints to prevent fouling. However, these paints usually rely on biocides and other toxic chemicals to work. Copper-based hull paints have been the most popular antifouling choice since the 1980s.

The direct release of copper and other toxic chemicals can cause negative environmental impacts on salmon and other non-targeted aquatic species.

Potential Copper Restriction

A 2020 law potentially bans copper-based antifouling paints for recreational boats beginning in 2026. The law also directed the Washington Department of Ecology (Ecology) to conduct a scientific review on antifouling paints and ingredients by June 30, 2024.

- If Ecology finds safer and effective alternatives that are feasible, reasonable, and readily available, Washington law will restrict the use of most copper-based antifouling paints beginning Jan. 1, 2026.
- If we do not find safer and effective alternatives by then, the ban will not take effect. We will then continue to study scientific literature and submit a new report by June 30, 2029.

In the winter of 2023, Ecology reviewed the most updated scientific literature and published the draft report. In this report, Ecology summarized information about copper-based paints, copper-free biocidal paints, and non-biocidal paints. Ecology also established definitions or criteria to evaluate safer, effective, feasible, reasonable, and readily available. In recognition of existing data gaps, Ecology started a performance test on a variety of antifouling paints in four Puget Sound locations. The test results are included in the report.

Long History

In 2011 Washington enacted legislation to ban the use of copper-based antifouling paint starting in 2018. Two follow-up investigations by Ecology in 2017 and 2019 showed that some non-copper alternatives might be more harmful to the environment than copper-based paints. In 2020, the Legislature delayed the ban and directed Ecology to continue to review related information. This third report focused on evaluating whether alternatives are safer and effective.

LEACH RATE CAP

Starting in 2019, EPA adopted a “maximum allowable leach rate” for antifouling paints that contain copper. These paints may not release more than 9.5 µg of copper per cm² of painted surface per day, or else they do not qualify for registration under Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). Copper antifouling paints available in Washington are subject to this leach rate limit.

IRGAROL BAN

Starting January 1, 2023, the use of Irgarol paint on recreational water vessels is prohibited in Washington State. These restrictions are part of a worldwide effort to phase out Irgarol paints for commercial and recreational water vessels. If you have old “slime-resistant” paints from Interlux or Pettit, look closely at the label to determine if they contain an ingredient called Irgarol 1051.

ADA ACCESSIBILITY

To request an ADA accommodation, contact Ecology by phone at 360-407-6700 or email at hwtrpubs@ecy.wa.gov, or visit ecology.wa.gov/accessibility. For Relay Service or TTY call 711 or 877-833-6341.

Conclusion

Safer: In review of non-copper biocidal ingredients, only three chemicals—Tralopyril, zinc pyrithione, and DCOIT—are registered to use in the United States and Washington State. Based on the criteria for safer antifouling chemicals, Tralopyril and zinc pyrithione don’t pass the criteria to be safer. The currently available information shows that DCOIT passes our minimum criteria to be safer, with a score of “GreenScreen® Benchmark-2 – Use but Search for Safer Substitutes.”

Effective: The review on effectiveness revealed significant data gaps in performance. To evaluate alternatives, Ecology started a performance test on antifouling products. The preliminary results at 6 months show that products based on DCOIT presented the lowest performance among non-copper biocidal paints and work less effectively than average copper paints in Puget Sound locations. Ecology lacks sufficient and credible data to conclude that DCOIT is an effective antifoulant to replace copper in Washington State.

Based on the review that focused on “safer and effective,” Ecology is not able to determine “that safer and effective alternatives to copper-based antifouling paints are feasible, reasonable, and readily available” pursuant to RCW 70A.445.020. As a result, the potential restrictions on copper-based paints in RCW 70A.445.020(3) (a)(c) will not take effect and Ecology will conduct a second review of relevant studies and information. A follow-up report will be submitted to the Legislature by June 30, 2029.

Read Ecology’s report, “[Draft Antifouling Paints in Washington State: Third Report to the Legislature.](#)”¹

Contact information

Iris Deng, PhD, toxics researcher, Hazardous Waste and Toxics Reduction
360-480-6555
iris.deng@ecy.wa.gov

¹ <https://apps.ecology.wa.gov/publications/SummaryPages/2304057.html>