

Is cleaning up the ocean helpful or hurtful?

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The open ocean beyond national jurisdiction covers nearly half of Earth's surface, is largely unexplored, and is an emerging frontier for human industry. Understanding how human activity impacts high seas ecosystems is critical for our management of this other half of Earth. This talk explores the ecosystem impacts of a novel high seas activity, using The Ocean Cleanup (TOC) as a model. The TOC's aim is to remove plastic from the ocean surface by collecting it with large nets. However, this approach results in the collection of surface marine life (neuston) as by-catch. A life cycle model is used to quantify potential impacts of ocean surface plastic removal on the organisms living in proximity to the trash. The impact depends on neuston life histories which are largely unknown, and range from mild to severe. While TOC has altruistic intentions, the lack of knowledge of the impact their methods will have on the ecosystem in the open ocean makes their activities potentially harmful and dangerous for ocean life. Open ocean activities are outside of national jurisdictions and discussions are currently underway on the urgent need for international agreements on the regulation of high seas activities.