

Analysing vessel traffic and ballasting trends in the port of Pago Pago, American Samoa from 2004 to 2021

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Abstract

Commercial shipping has been associated with many introductions of marine invasive species globally. Unintentional transport stowaways in ship ballast water and biofouling account for the most unintentional marine introductions globally. Understanding vessel traffic and ballasting behaviours can aid managers in identifying research and biosecurity gaps. We provide a quantitative baseline assessment of commercial vessel activities in American Samoa between 2004 and 2021. Vessel traffic and ballast water data were downloaded from the National Ballast Information Clearinghouse and examined in R. Since reporting began, vessel arrivals in the territory gradually increased each year, reaching a peak of 229 vessels in 2017. Over a third of all arrivals are container ships. Although commercial vessels arrive from ports all over the world, most come from and remain in the South Pacific. Containers and tankers were responsible for most of the ballast water discharges in the territory. The use of alternative ballast water management systems began in 2015 and increased dramatically in the following years. Though American Samoa's vessel traffic patterns are similar with the United States as a whole, we highlight key differences in this small, yet important, South Pacific port. This article highlight the importance of assessments at individual ports to better inform biosecurity decisions with an emphasis on regional biosecurity measures and communication among the Pacific Islands.

Keywords: American Samoa; Ballast water; Marine invasive species; Maritime shipping; National ballast information clearinghouse

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