

AB 258: GETTING OVER THE NURDLE HURDLE

Marine Debris: The Pacific Protection Initiative

The Problem

Industrial discharge of pre-production plastic pellets and resin materials, commonly called “nurdles,” originates from inland urban areas when released during the transport, packaging, and processing of plastics. These materials eventually migrate to coastal waterways and beaches.¹



Nurdle spill. Photo courtesy of the Algalita Marine Research Foundation.

Nurdles, plastic powders and production scrap, all of which are mistaken as food by marine life, are a significant source of ocean pollution.²

The plastics industry even finds that release of nurdles into the natural environment is a problem.¹

Approximately 60 billion pounds of nurdles are manufactured annually in the United States alone (e.g., one pound of pelletized HDPE contains approximately 22,000 nurdles).³



Nurdles leaking from a shipment container. Photo courtesy of the California Coastal Commission.

Nurdles are not currently retained by most trash capture devices, due to the small size of the pellets (e.g., to avoid flooding problems, most storm drain screen grates cannot sieve pellets from storm drain flow).⁴

“Nurdles are ubiquitous in the marine environment and pose an enormous threat to aquatic life. As a member of the Ocean Protection Council, I will advocate for increased controls on the release of nurdles to our marine environment.”

-Lt. Gov. John Garamendi

A Need for Legislation

9 in 10 Californians say the quality of the beach and ocean is just as important to them personally as well as for the overall quality of life and economy in the state.⁸

California’s “ocean economy” is valued at \$43 billion.⁹

On February 8th, 2007 the Ocean Protection Council adopted a comprehensive resolution on marine debris that outlines actions for California to prevent and reduce marine debris. The Council’s resolution is not regulation, but if paired with strong legislative action, it could be a catalyst for state, and potentially nationwide action on marine debris.⁵

AB 258 (Krekorian) will promote zero discharge of nurdles from industrial facilities by requiring the implementation of best management practices to control against the release of nurdles into the environment, a solution specifically called for by the Ocean Protection Council.

Voluntary Solutions Do Not Work

Voluntary programs implementing best management practices to eliminate the release of nurdles into the natural environment have failed. This failure is likely due to the absence of a regulatory system that will ensure enforcement against the release of these materials into the natural environment.

Best management practices to control against the release of pre-production plastic resin and pellets into the natural environment must be regulatorily required for the production, and transport and storage of these materials, with associated enforcement penalties.

Marine Impacts

Nurdles comprised roughly 98% of the beach debris collected in a 2001 Orange County study.⁵

Green, loggerhead, and hawksbill sea turtles; sheerwaters, northern fulmars, petrels, flounder, lobster, and likely many more aquatic species have ingested nurdles.³



Nurdles on beach. Photo courtesy of Algalita Marine Research Foundation.

Nurdles can carry two types of micropollutants in the marine environment - plastic additives and pollutants attracted to nurdles from ambient seawater. For example,

concentrations of PCBs and DDE on nurdles collected from Japanese coastal waters were found to be up to 1 million times higher than the levels detected in surrounding seawater.⁶



Nurdles flowing in dry weather storm drain discharge. Photo courtesy of the California Coastal Commission.

The presence of these pre-production plastics is not unique to U.S.

beaches and waters; studies have shown an international proliferation of nurdles in the marine environment.^{3,6,7}