



Pre-production Plastic Pollution In Texas

Pre-production plastic pollution is a growing issue in Texas, yet it remains largely unaddressed despite mounting scientific evidence of its harmful impacts on wildlife and human health. While voluntary programs like Operation Clean Sweep recognize the need for prevention, nurdles continue to be documented in Texas waterways. **As the nation's leader in plastic manufacturing, Texas is well-positioned to lead by example in developing stronger policies and regulations to prevent this form of pollution.**

What are pre-production plastics?

- Pre-production plastics are very small pieces of plastic that are about the size of a lentil. These microplastics take the form of pellets, also called “nurdles,” as well as powders, flakes, and foam. The plastics are made from fossil fuels and contain and absorb toxic chemicals, heavy metals, and harmful contaminants.
- Pre-production plastics are used to manufacture plastic products like water bottles, food packaging, drinking straws, plastic bags, and other everyday items.
- Texas leads the nation in plastic manufacturing, with 36 facilities across the state producing pre-production plastics.

PRE-PRODUCTION PLASTICS ARE
ALSO CALLED

NURDLES



TPIN STAFF

Why are pre-production plastics problematic?

- Pre-production plastics are discharged into the environment directly from manufacturing facilities through their stormwater and wastewater pipes. These plastics also enter the environment through spills during the manufacturing, storage, and transportation processes.
- High concentrations of microplastics have been thoroughly documented in waterways near plastic manufacturing facilities and along transportation routes.
- Once in the environment, microplastics are extremely difficult to clean up and many spill sites are often not thoroughly removed or cleaned up.
- Pre-production plastics don't biodegrade, but instead fragment into smaller microplastic particles that can persist in waterways and ecosystems for hundreds of years, while leaching harmful chemicals.

Impacts on wildlife and ecosystems

- Pre-production plastics absorb other harmful pollutants and toxic chemicals like a sponge.
- Fish, shellfish, birds, and other wildlife mistake pre-production plastics for food and ingest them. Over time, the harmful chemicals build up, or bioaccumulate, in the organism and cause harm such as by interfering with feeding, digestion, growth, and reproduction.
- These materials can move through food webs, creating additional pathways of exposure to other wildlife species and humans.

Impacts on human health

- Pre-production plastics can enter human bodies via the ingesting of seafood, especially filter-feeding species like shellfish.
- Microplastics have been detected in human blood, brain, lungs, kidneys, arteries, reproductive organs (testicles, ovaries, and placenta), semen, and breast milk.
- Because pre-production plastics break down into very small particles, they can become more difficult to detect and potentially easier to ingest or inhale.
- Research increasingly links exposure to microplastics to cardiovascular disease, inflammation, immune system impacts, dementia, infertility, and other health conditions.

Regulatory gaps in Texas

- The terms "Pre-production plastics" or "nurdles" are not explicitly defined as a pollutant under Texas law or regulations, such as the Surface Water Quality Standards (SWQS).
- In Texas, pre-production plastic pollution is primarily regulated through wastewater permits issued under the Texas Pollutant Discharge Elimination System (TPDES), which is administered by the TCEQ.
- Manufacturing facilities in Texas may discharge no more than "trace amounts" of "floating solids." This standard is not stringent enough and has provided insufficient protection against pollution. Additionally, during the 2022 SWQS revision process, TCEQ proposed standards to regulate pre-production plastic pollution, but later withdrew that language after industry groups challenged the agency's authority to adopt those standards.
- Facilities are responsible for reporting their own spills to TCEQ (i.e., accurate reporting depends on compliance).
- Operation Clean Sweep is a voluntary pellet loss prevention program established by the plastic industry that relies on self-reporting and voluntary practices rather than enforceable standards.
- But voluntary measures aren't enough - nurdles continue to be found in Texas rivers, bays, and along the coast, underscoring the need for stronger regulations.

Proposed solutions

- Direct TCEQ to establish standards to regulate pre-production plastic pollution through the ongoing revision of the 2026 SWQS.
- Add pre-production plastics to the list of regulated Class II industrial solid wastes.
- Require facilities that manufacture, store, or transport pre-production plastics to monitor wastewater and stormwater for pellet, powder, and flake pollution, immediately report spills and releases to TCEQ and the public, and implement clear cleanup and mitigation procedures.
- Increase transparency in spill reporting by requiring public disclosure of spills and procedures for verifying reportable releases.
- Direct TCEQ to monitor waterways near manufacturing facilities and transportation corridors where pre-production plastic pollution is most commonly documented.
- Require plastic manufacturing facilities to conduct regular audits, implement spill-prevention measures, and submit annual reports identifying pathways by which pellets, powders, and flakes enter the environment.
- Ensure meaningful public participation and transparency in permitting and regulatory decisions involving pre-production plastic pollution.

Protect Texas beaches, wildlife, and public health.



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