



SIERRA CLUB

LONE STAR CHAPTER

Testimony for House Bill 4144

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Contact: Alex Ortiz, alex.ortiz@sierraclub.org

Dear Chairman Landgraf and members of the committee,

The Sierra Club Lone Star Chapter strongly supports HB 4144. The Sierra Club is the nation's oldest conservation organization, and the Lone Star Chapter of the Sierra Club has been actively engaged in Texas water issues since its inception. More than 400 Sierra Club members and Supporters have signed onto a let

We strongly support HB 4144 and thank Representative Zwiener for her leadership on this issue.

In the last review of the surface water quality standards, TCEQ considered a standard on pre-production plastic pollution for the first time — only to withdraw it, citing baseless concerns over statutory authority. Texas Water Code §26.023 clearly states that this commission has the sole and exclusive authority to set water quality standards for all water in the state. Moreover, because TCEQ has delegated authority from EPA over Clean Water Act implementation, TCEQ need not have an explicit directive from either the legislature or the federal government to promulgate rules that protect the environment and public health as it relates to these standards.

That said — **this bill is vital to ensuring the future of Texas Coastal economies, communities, and wildlife.** It simply tells TCEQ that it must consider pre-production plastic pollution and potential harms in its assessment and monitoring, as well as the development of Surface Water Quality Standards.

Nurdles show up in our waters not because of littering. They are discharged from petrochemical facilities nearby due to lack of controls or as a result of transportation-related spills. Nurdles are toxic and also attract other harmful pollutants that can stick to and build up on their surface and then leach into the environment. Risks include degraded water quality, harm to native wildlife that eat the nurdles, and contaminated soil, as well as potential human health harms to the digestive, endocrine, and nervous systems. Risks include degraded water

quality, threats to native wildlife that accidentally ingest the nurdles, and contaminated soil, as well as potential human health harms to the digestive, endocrine, and nervous systems.

There is already evidence suggesting that microplastics may be more abundant than some species of plankton in the Gulf of Mexico, as well as evidence that microplastic particles can cause significant fertility damage to oyster populations.¹ Texas oysters perform vital ecological functions, and the state's oyster populations are increasingly threatened by factors including climate change impacts, water quantity variability, water quality degradation, and unsustainable harvest. Additional harm to the Texas oyster populations risks not only coastal welfare, but also human health through consumption and bioaccumulation. Failure to control microplastic pollution also risks widespread harm to the already delicate oyster industry in Texas. Beyond oysters, many species of fish accidentally ingest microplastics, leading to malnutrition and starvation of fish populations, ultimately culminating in widespread fish kills. For communities along the coast, whose economies rely on both commercial fishing and robust tourism associated with recreational fishing, the risks of unevaluated or unconsidered impacts could result in massive economic damage.

The need for regulating pre-production plastic pollution has only become more pronounced. Pre-production plastics are a hazard to human health and the environment.² Pre-production plastic is made up of petrochemicals such as polyethylene (PET), purified terephthalic acid, (PTA), polypropylene (PP), and polystyrene (PS). Chemical additives provide the color and persistent nature of microplastics, prolonging the amount of time they can cause damage. Nurdles act like a toxic sponge — accumulation of chemicals on their surface such as DDE (dichlorodiphenyldichloroethylene, a banned pesticide) and PCBs (Polychlorinated biphenyls, industrial chemicals) results in a significantly higher concentration of these chemicals than would otherwise exist in ambient water. Direct contact with microplastic pollution can cause harm via skin contact, as well as wreak havoc up the food web through bioaccumulation and biomagnification.

In 2019, a study from the University of Newcastle found that the average human consumes **up to 5 grams of plastic per week, which is roughly equivalent to the mass of a credit card.**³

¹ Rosana Di Mauro, et al., Abundant plankton-sized microplastic particles in shelf waters of the northern Gulf of Mexico , *Environmental Pollution*, (Aug. 10, 2017); Daniel Cressey, Microplastics damage oyster fertility , *Nature*, (Feb. 02, 2016) <https://doi.org/10.1038/nature.2016.19286>.

² McVeigh, K. (2021, November 29). Nurdles: The worst toxic waste you've probably never heard of. *The Guardian*.

³ WWF, Dalberg, and the University of Newcastle, No Plastic in Nature: Assessing Plastic Ingestion from Nature to People, https://d2ouvy59p0dg6k.cloudfront.net/downloads/plastic_ingestion_web_spreads.pdf

Inhalation and ingestion of constituent chemicals and microplastics can cause damage to internal organs including the urinary system, digestive system, respiratory system, and nervous system. Many of these chemicals are also endocrine disruptors, and linked to cases of breast cancer or infertility. Plastics of 10 micrometers (μm (0.000393701 inches) or smaller can move across a person's blood-brain barrier, as well as the placenta of pregnant individuals.⁴ In fact, microplastics have been found in all parts of the human placenta — including the “maternal, fetal and amniochorial membranes.”⁵

These changes in understanding how plastics interact with humans and our environment is significant cause for concern and show a pressing need for additional consideration by TCEQ. Sierra Club sincerely appreciates the opportunity to provide these comments, and urges the committee to report favorably on this bill. I'm also happy to answer any questions related to this bill.

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Sierra Club Lone Star Chapter

⁴ Campanale C, Massarelli C, Savino I, Locaputo V, Uricchio VF. (2020, February 13). A Detailed Review Study on Potential Effects of Microplastics and Additives of Concern on Human Health. International journal of environmental research and public health.

⁵ Ragusa A, et al. Plasticenta: First evidence of microplastics in human placenta. (<https://doi.org/10.1016/j.envint.2020.106274>)