

DISCUSSION ON THE DEVELOPMENT OF A MODEL ORDINANCE TO BAN OR PLACE A MORATORIUM ON ARTIFICIAL TURF



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EXECUTIVE DIRECTOR

11/20/2025

RECOMMENDATION

- Receive a presentation prepared by the AB 939 Local Task Force comparing artificial turf and natural grass
- Consider directing staff to develop a regional model ordinance to prohibit or place a temporary moratorium on the installation of artificial turf within Sonoma County.

WHY ZWS SHOULD LEAD A MODEL ORDINANCE

- Coordinate consistent waste-reduction policies across our nine cities and the County
- Material management is fundamentally a public health service
- Serve to help the residents and businesses reduce, reuse, recycle, and discard all materials, including toxic materials, in the safest and most environmentally responsible way possible
- Household Hazardous Waste (HHW) Program manages toxics countywide
- Artificial turf aligns with hazardous waste concerns due to toxic components

MATERIAL MANAGEMENT BURDEN

- Single field = up to 40,000 lbs of plastic + 400,000 lbs infill waste (Synthetic Turf Council)
- Each full-size field generates approximately 200–250 tons of waste every 8–10 years (DTSC)
- No viable recycling pathway; 'recycling' claims often unverified



Background Document on Candidate Chemicals in Artificial Turf

August 2024

Prepared by
Department of Toxic Substances Control
Safer Consumer Products Program
California Environmental Protection Agency

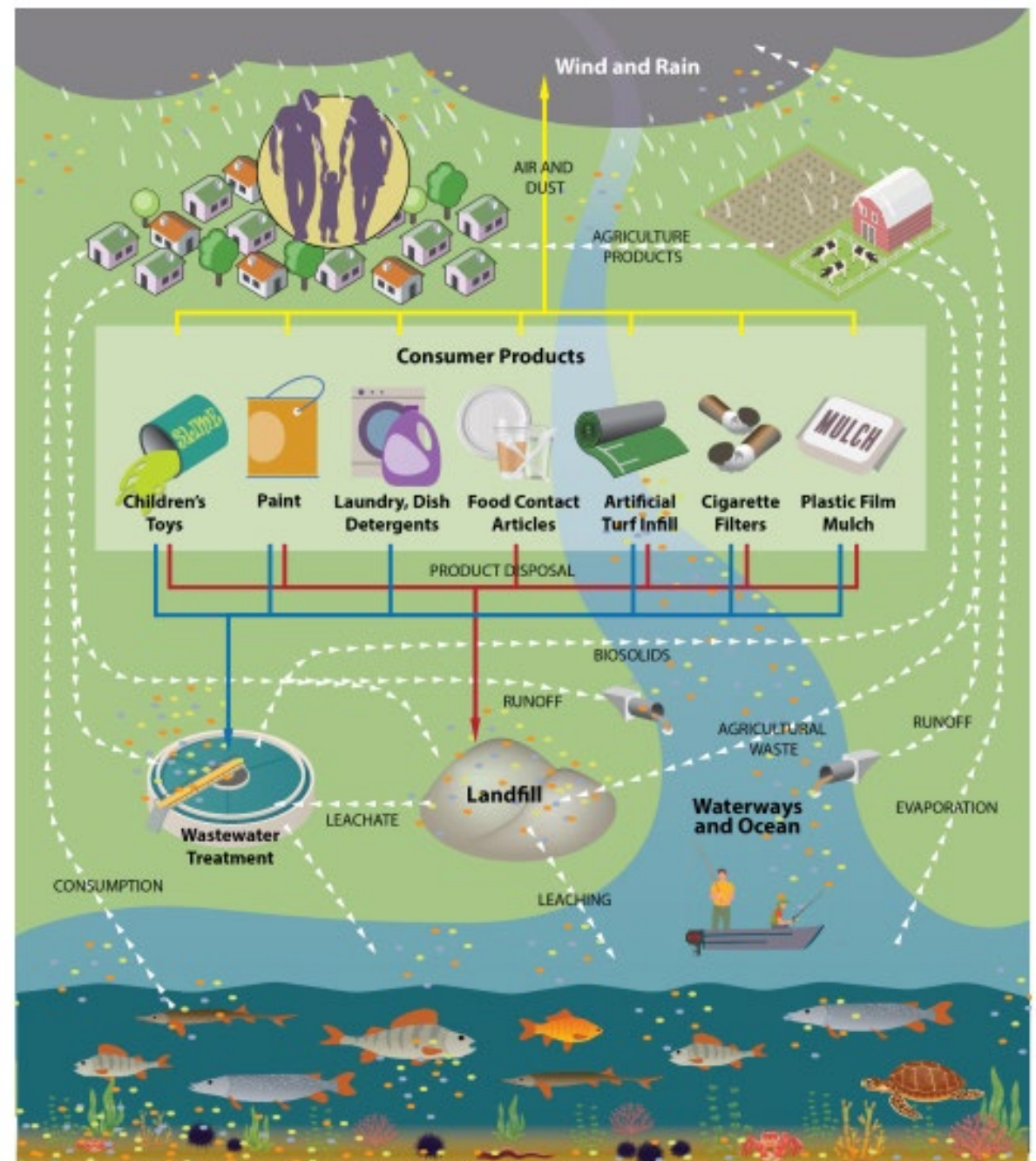


Figure 1. Conceptual model for exposure to microplastics: sources, pathways, and environmental fate. This figure focuses on the release of microplastics from certain consumer products, and it does not illustrate an exhaustive list of sources, pathways, or fate of microplastics.

MATERIAL MANAGEMENT AND TOXICS

- DTSC identifies PFAS, heavy metals, & hazardous materials in turf
 - PFAS include developmental toxicity, reproductive toxicity, endocrine toxicity, immunotoxicity, and respiratory toxicity (DTSC 2023a)
- Breaks down into microplastics that persist in the environment
- Environmental contamination from turf runoff and breakdown particles



Tom Schopflin Fields

Santa Rosa













DTSC TOXICITY IDENTIFIED

- Identify PFAS and hazardous chemicals in turf
- “Artificial turf users (e.g., athletes, children, and people with residential turf installations) may be exposed to the Candidate Chemicals in artificial turf during sport, play, and leisure”.
- PFAS include developmental toxicity, reproductive toxicity, endocrine toxicity, immunotoxicity, and respiratory toxicity (DTSC 2023a)
- Environmental contamination from turf runoff and breakdown particles

Chemical Functional Class	Function	Example Additives
PFASs*	Enhance plastic extrusion and reduce surface defects (3M 2016)	Vinylidene fluoride-hexafluoropropylene polymer* (3M 2016; 3M 2018)
Ortho-phthalates*	Aid in plastic processing (Hansen et al. 2014)	Di(2-ethylhexyl) phthalate (DEHP)*, diisononyl phthalate (DINP)* (Plessner and Lund 2004)
Colorants	Add color to blades (BASF 2022a)	Green copper metallic complexes* or yellow azo compounds (Nilsson et al. 2008)
Antioxidants	Prevent degradation caused by oxidation (Nilsson et al. 2008)	Phenols and organic phosphites (Nilsson et al. 2008)
Light Stabilizers	Prevent degradation caused by light and heat (BASF 2022b)	Hindered amine light stabilizers (HALS) (BASF 2022b)
UV Light Stabilizers	Prevent degradation caused by UV light (Nilsson et al. 2008)	Zinc tinuvin, hindered amine light stabilizers (HALS) (BASF 2022b; Nilsson et al. 2008)

**Present on DTSC's Candidate Chemicals List (DTSC 2023a). Items without an asterisk are broad functional classes of chemicals and may contain compounds on the Candidate Chemicals List.*

Exposure Pathways

Pathway	Pathway-specific parameters	Age and receptor-specific parameters
Inhalation	<ul style="list-style-type: none"> ❖ Exposure concentration ❖ Breathing rate ❖ Inhalation absorption 	<ul style="list-style-type: none"> ❖ Bodyweight ❖ Event frequency ❖ Event time ❖ Annual event time ❖ Exposure duration
Dermal	<ul style="list-style-type: none"> ❖ Bioaccessible dermal concentration ❖ Dermal load ❖ Skin absorption 	
Ingestion <ul style="list-style-type: none"> ❖ hand-to-mouth ❖ hand-to-object-to-mouth ❖ object-to-mouth 	<ul style="list-style-type: none"> ❖ Bioaccessible gastrointestinal concentration ❖ Gastrointestinal absorption ❖ Ingestion rate 	

OEHHA Synthetic Turf Study

March 2025
Public Review Draft



Synthetic Turf Scientific Advisory Panel Meeting, April 28, 2025

Prepared by
Pesticide and Environmental Toxicology Branch
Office of Environmental Health Hazard Assessment
California Environmental Protection Agency

Summary

- ❖ Air and crumb rubber samples collected from 35 synthetic turf fields across California
- ❖ This study identified:
 - 119 chemicals in air samples
 - 75 organic chemicals in dermal extracts of crumb rubber
 - 76 organic chemicals and 30 metals in gastric extracts of crumb rubber
- ❖ We estimated inhalation, dermal, and ingestion exposures using study average concentrations and individual field average concentrations

OEHHA FINDINGS:

- **No *significant* health risks for the general population** using synthetic turf fields *under the scenarios they modeled*.
This does *not* mean “no risk,” only that the modeled exposures generally fell below their health thresholds.
- **However, OEHHA documented real exceedances, including:**
 - **Developmental and Reproductive Toxicity (DART) for athletes aged 11–70**
→ This is a meaningful health endpoint and includes fetal/developmental harm and effects on fertility.
 - **Chronic toxicity exceedances for infants on the field**
→ Infants are a sensitive population; even small exceedances matter under public health standards.
 - **Excess cancer risk exceedances for:**
 - Infant spectators on the field
 - Athletes ages 16–30
- **Any exceedance in OEHHA’s framework means that modeled exposure is above levels considered “safe.”**

YEAR ROUND PLAY

- Synthetic turf does not guarantee year-round access
 - High-performance natural grass can support 1,200–1,500+ hours/year
 - Turf requires downtime for grooming, infill maintenance, and periodic shutdowns
 - Turf fields close during extreme heat flooding, or repairs, heat island
 - 80+ degrees - Exercise caution in conducting activities
 - 90+ degrees - May hold one regular morning or evening practice (before noon or after 5 p.m.) for 1 hour



NATIONAL RECREATION
AND PARK ASSOCIATION





LTF PRESENTATION

Protecting environmental and public health
supports equitable athletic access