

# The Myths of Artificial Turf



# What is Artificial Turf?

- Plastic grass on a plastic backing with “infill” to hold the blades up





# Artificial Turf is *Bad* for the Environment

- For decades, environmentalists were focused on crumb rubber infill



# Crumb Rubber is Dangerous

- polycyclic aromatic hydrocarbons (PAHs)
- metals (like lead, cadmium, etc.)
- volatile organic compounds (VOCs)
- plasticizers
- carbon black
- styrene (neurotoxic)
- butadiene (carcinogen)
- flame retardants
- etc.

# Crumb rubber kills fish

- 2021 paper showed chemicals in tires killed coho salmon in Washington (6PPD-quinone)
- 2022 paper showed same effects on rainbow and brook trout



# Industry is moving away from crumb rubber...

...toward “organic” infills:

- walnut shells
- coconut husks
- BrockFILL (engineered wood)
- Ground up sneakers
- Silica sand
- Cork

**But this does not solve the problem, as the turf contains toxic chemicals!**

(And crumb rubber is still used as base layer under PIP!)

# Infill is the least of our worries...

- In 2019, PEER discovered that artificial turf contains per-and polyfluoroalkyl substances (PFAS)
- Class of thousands of chemicals
- Nicknamed “forever chemicals”
- All are persistent because of C-F bond
- Many bioaccumulate
- All we have studied are toxic

# Virtually no safe level

- In fact, in June of 2022, EPA issued interim health advisories stating that there is virtually *no safe level* of PFOA and PFOS in drinking water
- PFAS routes of exposure: 1) inhalation; 2) dermal absorption; and 3) ingestion



# PFAS leaches off artificial turf fields into water

- Dr. Graham Peaslee of Notre Dame University has tested *dozens* of samples of artificial turf...and found PFAS in every one
- Real world examples show that water around artificial turf quickly becomes contaminated
- In Martha's Vineyard, a study shows that 12 ppt of 6 PFAS leaches off a new field (more as the field ages)

# Artificial turf sheds microplastics

- 218 kg/year (480 pounds/year)



# Microplastics pollute water; little toxic bombs

- Some fields have had to close because of microplastic pollution
- Each shred contains harmful chemicals, including PFAS
- “I like to compare synthetic turf to a bad relationship . . . It gets dangerously hot, it’s toxic to everyone around me, it’s unsustainable . . . and it’s really hard to get rid of.” Diana E. Conway, President, Safe Healthy Playing Fields, Inc.

# Artificial Turf Contributes to Climate Change

- natural grass absorbs CO<sup>2</sup> and releases oxygen
- artificial turf does the opposite (releases CO<sup>2</sup>, methane, other chemicals)
- manufacturing, installation, service and disposal of a 2-acre artificial turf field is responsible for the generation of a total of 55.6 tons of CO<sup>2</sup>

# What Does Industry Say?

- Real grass requires pesticides...
- Real grass requires too much water (especially with climate change/droughts)...
- Real grass doesn't give you enough play time...
- Real grass is too expensive ...
- Artificial turf is “green” because it can be recycled ...

**None of this is true.**



# Lione Park: 2,700' and 6,600' from Long Island Sound



# West Beach AT fields: 910' and 1,300' from Long Island Sound



# Artificial Turf is *BAD* for the Environment

- There is *no* benefit to artificial turf
- Environmental damage will be felt for decades to come
- Drought/climate change is an issue, but artificial turf is not the answer
- Artificial turf does not handle extreme precipitation well
- Industry will tell you artificial turf is the gold standard; it is not. Some industry reps do not know there is PFAS in their products

# Artificial turf is *BAD* economically

- AT is more expensive to maintain properly
- AT does need watering
- AT does need to be replaced (and infill needs to be replaced every year)
- The potential liability issues are huge

# Liability Issues

- EPA is issuing regulatory limits on some PFAS this month
- States are making more stringent MCLs
- Class action suits for contaminated water abound
- Municipalities **must** require “PFAS-free” materials, backed up by independent testing, including leaching tests



# Conclusion

