BETTER ALTERNATIVES 3.0

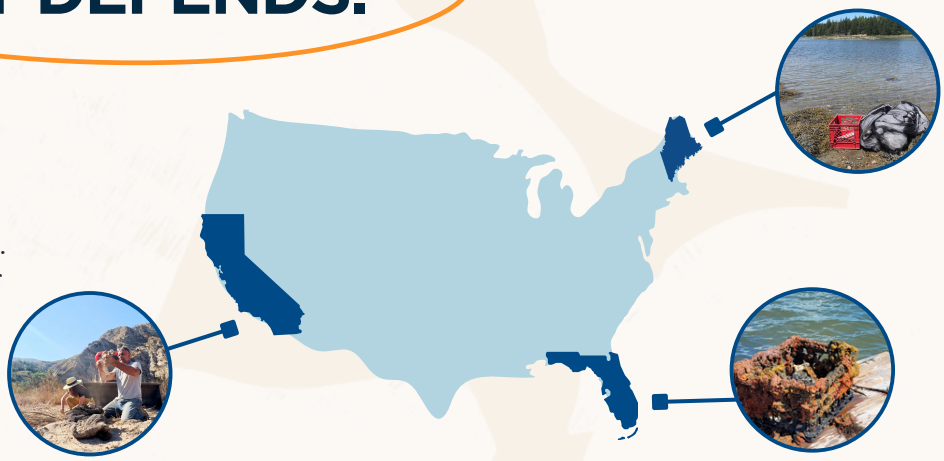
5 GYRES
SCIENCE TO SOLUTIONS

DO BIOMATERIALS BREAK DOWN IN NATURAL ENVIRONMENTS?

IT DEPENDS.

THE STUDY

Better Alternatives 3.0 offers a look at how bioplastic products and packaging, including straws, thin film, bottles, and more, break down in natural environments. The 64-week study tested 22 items, made of different polymers and blends, in six environments across the United States, including Florida, California, and Maine.



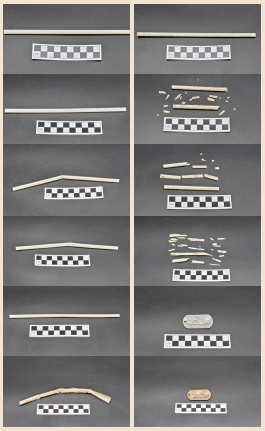
"An item may be advertised as biodegradable or compostable, but **under what conditions?** We need greater transparency and truth in advertising about the things we buy."

Dr. Marcus Eriksen, Co-Founder & Researcher, The 5 Gyres Institute

ENVIRONMENT MATTERS

Items persisted much longer in terrestrial than marine environments, likely due to lack of moisture and microbial activity.

ITEM: Straw
POLYMER: PHA



ENVIRONMENT:
CA Terrestrial vs. FL Marine

THICKNESS MATTERS

Product design affected degradation, with thinner items fragmenting at a faster rate than thicker items.

POLYMER: PHA
ENVIRONMENT: ME Marine

ITEM:
Film vs. Fork

POLYMER MATTERS

Polymers like PHA degraded faster than PLA. Blends and laminates also impacted fragmentation.

ITEM: Film
ENVIRONMENT: FL Marine

POLYMER:
PLA vs. PHA

5gyres.org/BetterAlternatives