

restricted to 80 years. Emissions resulting from the presence of PVC in landfills are likely to last longer than the guarantee of the technical barrier. (Steingraber) Suppose we then substitute a biodegradable plastic. Most readily available today is polylactic acid. PLA is compostable, but not Marine degradable. Our trials and seawater found it to be virtually unchanged after a year's immersion, even though it was exposed to sunlight's degrading ultraviolet rays. When windstorms and waves dislodge the tubes, screens and UV resistant bands that hold them, they will share different but similar fates. The tubes, being heavier than water will sink and roll into Marine canyons, where they will pollute the benthos. These canyons are where soft sediments accumulate that are used for foraging by migrating gray whales. Will they then join golf balls and this list of items found in the gray that washed ashore on a west Seattle beach last year? ... A pair of sweatpants, golf balls, 20 plastic bags, small towels, duct tape, and surgical gloves?

The composition of the netting is probably nylon, Dacron or polyethylene. If it is polyethylene it will float and join the debris consumed by foraging toothed whales and turtles. If it is nylon or Dacron, another name for PET, it will sink and get caught on sharp rocks or be buried in the sediments along with the tubes. Most rubber bands sink and will likely degrade very slowly buried in the bottom. The gray whale washed up on a west Seattle beach last year had heavier than water plastics in its stomach. There is another type of bioplastic which preliminary tests have shown to be biodegradable in marine environments. It is called PHA, polyhydroxyalkanoate. Marine bacteria can degrade this plastic in the same time it takes compostable plastics to be composted, that is, it appears to meet ASTM 7081, the marine biodegradability standard. It is produced by Metabolix, and has the trade name Mirel. (DiGregorio) It is currently under trial in the geoduck clam industry, but the results are not yet available. Even this material will be lost in the high energy environment where it will be used and could cause considerable damage before biodegrading. The nets will probably not be made out of this material, nor the bands, and when lost will be entanglement and ingestion hazards.

To summarize, the introduction of plastics into the marine environment poses hazards of three main types, ingestion, entanglement and the transport of exotic species. (Barnes) PVC is especially toxic and poses hazards to environmental health at every stage of its existence. Other plastics may eliminate some, but not all of these problems, therefore, it does not appear possible to introduce any plastic into the marine environment without harmful consequences.

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