



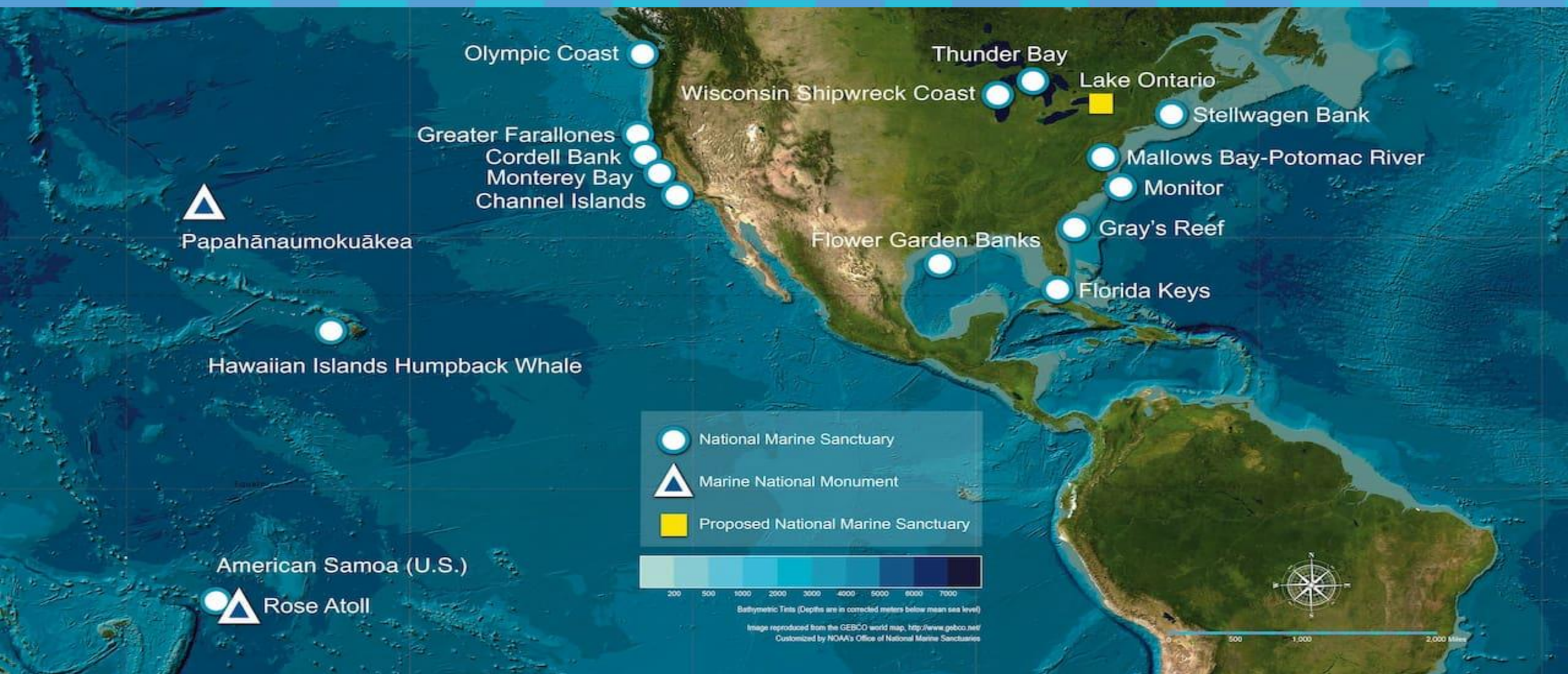
Plasticulture: End-Of-Life Collaborative Solutions



Jazmine Mejia-Muñoz
Water Quality Protection Program



National Marine Sanctuary System – Best Coast Region



National Marine Sanctuary System – West Coast Region

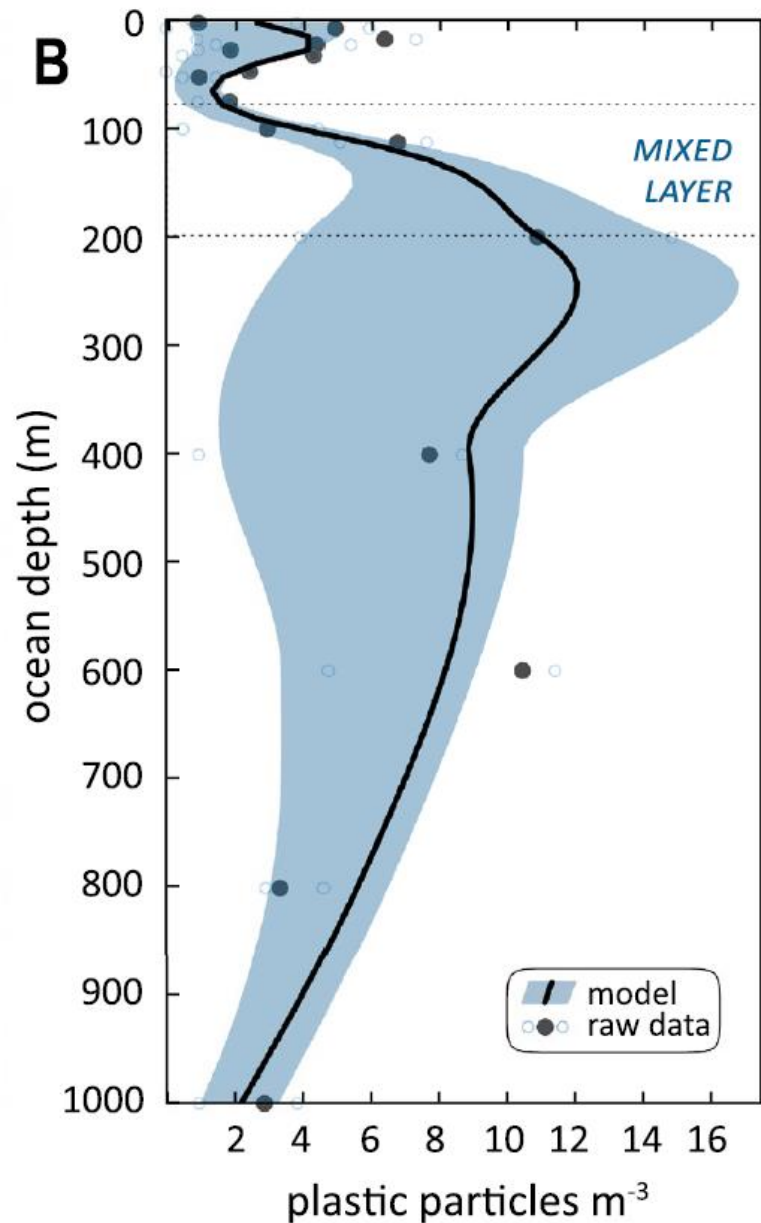


Human Elements of MBNMS

- ❖ 10 major watersheds = 7,000 sq. miles
- ❖ Five Coastal Counties
- ❖ 12 Coastal Cities
- ❖ Four Urban Centers
- ❖ Six Congressional Districts
- ❖ 3 million w/in 50 mi. of coast



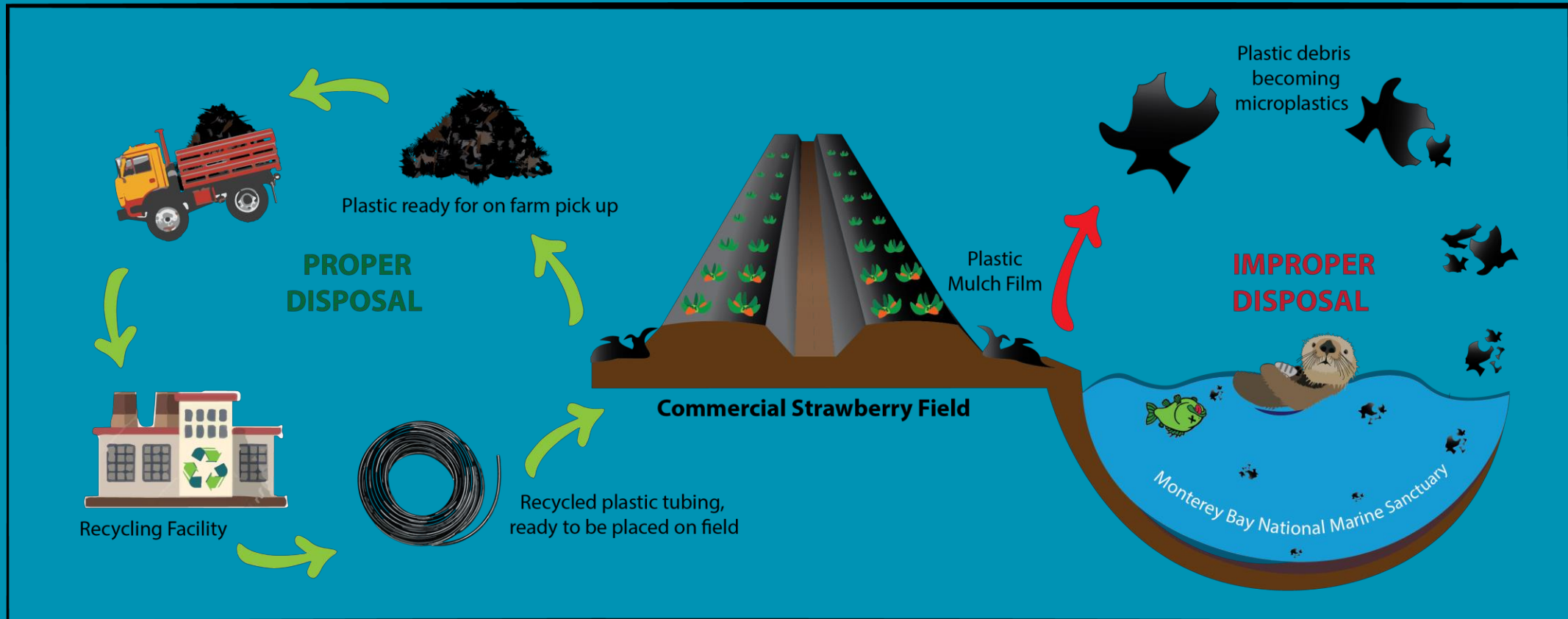
Marine Microplastic Are Not Only Floating at the Surface



- Microplastic is found throughout all depths in the water column (MBARI)
- The highest concentration is not on the surface
- Plastic is found in ocean sediment and marine organisms

Choy et al. 2019 The vertical distribution and biological transport of marine microplastics...

Plasticulture and the Ocean



Ag Plastic Travels to the Ocean



Source – Pam Krone





Source – Jazmine Mejia- Muñoz



Does Field Plastic Enter Waterways that Travel to the Ocean?

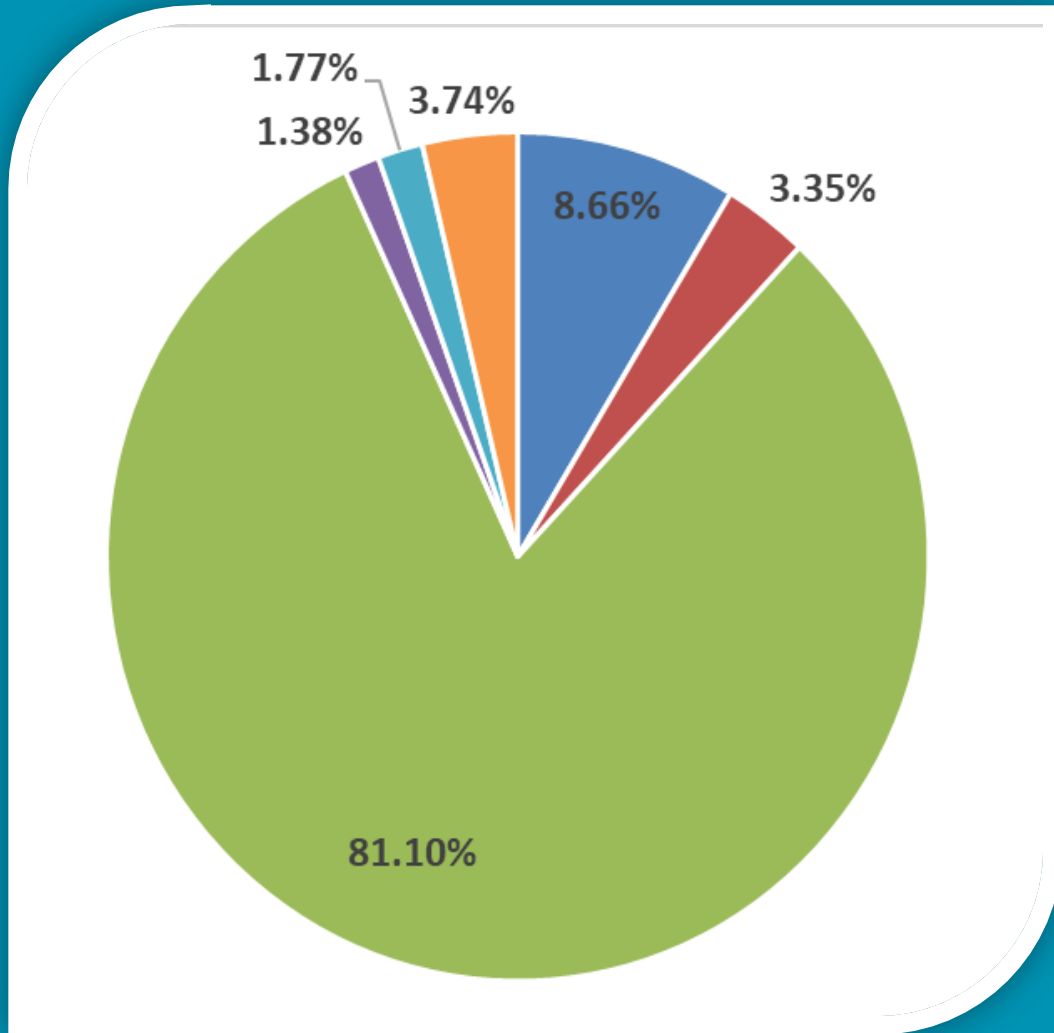
Bank Surveys



Microplastic Monitoring



Stream Bank Monitoring Results



- Monitored 10 sites in agriculturally dominated watersheds, following rain events
- Microplastics were found in streams (1.1 to 60.9 particles/m³)

Ag Plastic Category	Average Ag Plastic Particles (#/m ²)
Strapping tape	0.28
Drip tape/Irrigation Tubing	0.07
Plastic Mulch	1.73
Produce Packaging	0.03
Personal Protective Equipment	0.05
Thick plastic fragment	0.04

PE Mulch Alternative - Soil Biodegradable Mulch

- Washington, California, Florida, Nebraska
- Photo monitoring, interviews, and post tillage monitoring, Soil Health,
- Challenge – Need a faster biodegradation rate and **not approved for organic operations**



Source: Jazmine Mejia-Muñoz

Manufacture Led DIT Recycling Programs



Source: Jazmine Mejia-Muñoz

Drip Tape Recycling Opportunities

Programs are subject to change.



	Andros	Netafim	RDO Water	Rivulis
Contact Information	https://andros-eng.com/andros-drip-tape-recycle/ Dan Johnston Account Manager (805) 400 9161 djohnston@andros-eng.com	https://www.netafimusa.com/recycling/ (559) 246-8264	https://www.rdoequipment.com/locations/salinas-ca?utm_source=local&utm_medium=organic&utm_campaign=GMB (831) 757-5767	https://www.rivulis.com/us_recycle/
Minimum Pick Up Amount	Varies	20, 000 lbs.	Varies	Varies. Only collects VEGI Drip Tape
No Contamination	Not mixed with other plastic and no adhesive tape; no other foreign material such as tires, trash or wood.	Not mixed with other plastic and no adhesive tape; no other foreign material such as tires, trash or wood.	Not mixed with other plastic and no adhesive tape; no other foreign material such as tires, trash or wood.	Not mixed with other plastic and no adhesive tape; no other foreign material such as tires, trash or wood.
Bundling	Rolled with Andros Mega Binder or Ultra Binder. Loose tape can be picked up on a case-by-case basis.	Tightly mechanically rolled: no metal, cardboard, sticks, or plant material cores.	Rolled with Andros Mega-binder, Ultra Binder, or equivalent equipment (No PVC, wood or other cores)	Rolled with Andros Mega-binder, Ultra Binder, or equivalent equipment (No PVC, wood or other cores)
Accessibility	Semi-truck with 40-foot trailer for pick up. The area must have room for forklift access to lift the coils.	65 ft tractor trailer plus 14 feet on level ground	Semi-truck with 40-foot trailer for pick up. The area must have room for forklift access to lift the coils.	Semi-truck with 40-foot trailer for pick up. The area must have room for forklift access to lift the coils.





Free Ag Plastic Recycling Drip Tape and Hoop House

Approved growers may drop off separated and clean drip tape and hoop house ag plastic for recycling for free at ReGen Monterey .

Program Acceptance Requirements

- Only hoop house film and drip tape can be dropped off
- Any quantity of qualifying agricultural plastic may be dropped off at no cost
- Material must be separated and not mixed with other plastics
- Please do not include tires, other plastics, trash, paper, glass, or mixed metals
- Ensure ag plastic is as clean as possible by collecting it in dry weather, shaking off as much dirt as possible, and removing any other trash contaminants
- Heavy zinc ties used to attach the drip tape at the ends are okay
- Unseparated plastics will not be recycled and their tipping fee will be charged at problem waste fee of \$102 per ton

ReGen Monterey has the right to refuse recycling of excessively contaminated plastic and is willing to work with stakeholders to help prevent contamination. Thank you for implementing strategies that help prevent ag plastic from entering our local Monterey Bay National Marine Sanctuary.

To participate in recycling agricultural plastic, contact Flipping Iron, Inc.

Flipping Iron, Inc.
661-426-1126
info@flippingironinc.com



ReGen Monterey | 14201 Del Monte Blvd, Salinas, CA 93908 (1.5 miles north of Marina off Highway One)





Source: Jazmine Mejia-Muñoz



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Acknowledgements + Website



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<https://smallfruits.wsu.edu/plastic-mulches/>



Gracias!!



Questions?

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