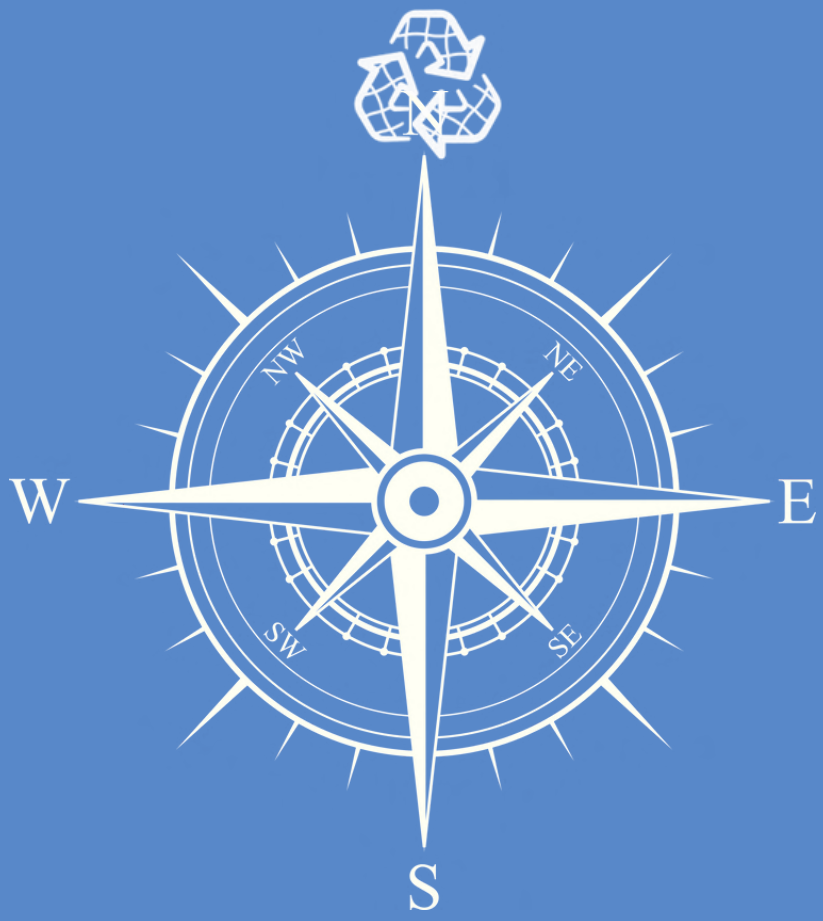
A rising tide lifts all boats: How policy makers can summon the wave energy needed to enable the captains of blue economy businesses



NET YOUR PROBLEM

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Executive Summary

Net Your Problem LLC, a blue economy business, has contributed to economic development and environmental stewardship in 12 communities over the past four years. For fishing gear recycling, and indeed recycling in general, to be the preferred disposal option for materials at their end of life, the following policies and incentives could be introduced to make recycling competitive to other options for disposing of waste: develop the infrastructure and capacity of domestic recycling programs, protect our ocean resources through a focus on the prevention of plastic pollution, encourage the demand for recycled plastic, reduce subsidies for oil extraction and broaden the focus on plastics to include more than just “single use plastics”. Improving and supporting domestic recycling programs directly lowers greenhouse gas emissions, decreases the amount of space needed for landfills, contributes to supply chain consistency, reduces water pollutants, conserves resources, saves energy, and creates jobs. Fishing gear in the ocean is a waste management issue that can be solved by providing incentives for fishermen to deliver their nets to a centralized location.

Key Recommendations

Develop general US recycling processing capacity to include fishing gear which can generate jobs, strengthen and shorten supply chains and lower costs overall.

Include recycling or manufacturing with recycled content as a carbon emissions reduction solution. The link between plastic waste and carbon emissions is clear, and recycling offers a solution to both.

Include “not single use plastics” in discussions about plastic waste, given that 2/3 of plastic production is not for single use products

Encourage the demand of recycled content (not just in single use products) which can help overcome the disparities in price with virgin plastic, drive the whole recycling system and justify investments in collection schemes.

Future policies need to align with our collective values; subsidizing the extraction and refining of oil (to the tune of $20 billion USD per year! according to EESI) does not support economic growth that is good for our country, environment and citizens.

Background & Context

Why Care about Blue Economy Businesses?

Blue economy businesses are those that use the ocean's resources in a sustainable way to generate economic growth, improve livelihoods and jobs while preserving the health of ocean ecosystems and may include renewable energy, tourism, waste management, fisheries and maritime transportation. Supporting the blue economy allows societies to derive real revenue while focusing on regenerative rather than extractive industries. In fact, the OECD estimates that in 2030, its contribution to the global economy will have doubled from $1.5 trillion USD in 2010 to $3 trillion USD.

Reviewing Global Policies and Initiatives:

In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) which formed a blueprint for businesses and governments to ensure peace and prosperity, for people and the planet, now and into the future. See the box to the right (Table 1) for examples of how fishing gear recycling advances five of the 17 SDGs. Much like how oceans and seas are interconnected bodies of water, businesses in the worldwide blue economy are interconnected and interdependent. 96% of the material we have collected has been shipped to Europe where the capacity to recycle, market and resell the plastic material is in place. Table 2 lists relevant global policies that support the circular economy and the blue economy when it comes to recycling fishing gear.

The rest of this brief will focus specifically on a subset of blue economy businesses concerned with the sustainability of fisheries, and the collection and export of plastic fishing gear for recycling. The role of fishing gear recycling in the blue economy is extremely relevant to US legislators because of the global significance of the US fishing fleet for nutrition, food security and economic revenue, and the growing attention being paid to plastic waste, especially fishing gear, as a pollutant in the ocean.

Table 1. SDGs addressed through fishing gear recycling programs

Legislation	Description	Summary	Effect
Basel Convention: Controlling transboundary movements of hazardous wastes and their disposal	Basel Convention Amendments	Only homogenous loads of plastic waste can be exported/imported	Plastic waste is pre-processed and sorted, ensuring the waste is easily recyclable
Waste Framework Directive	Extended Producer Responsibility (EPR)	Producers of plastic are financially responsible for the disposal at the end of life	Provides sustainable funding for the collection, processing and recycling of waste into a raw material ready for the manufacturing supply chain
Vary by state in the US	Recycled Content Mandates	Required percentage of recycled content in new products	Increased demand for recycled plastic
Packaging Waste Directive	Virgin Plastic Tax	Taxes on the production and use of virgin plastic	Discourages the use of virgin plastic in manufacturing

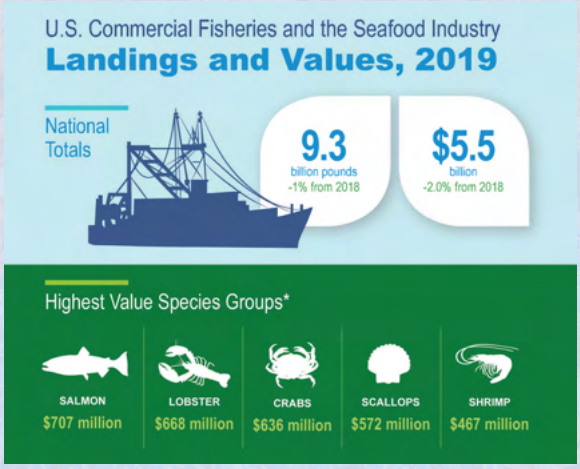
Table 2. Examples of relevant legislation and their functions.

Is Fishing Gear Waste a Problem in the US?

There are solutions for recycling HDPE (high density polyethylene), PP (polypropylene) and PA6 (nylon) and making these solutions accessible and affordable will increase motivation for behavior change.

According to the Food and Agriculture Organization of the UN, there are 2.8 million motorized fishing vessels in the world, with 80,200 of them registered in the US. Although the US only operates <3% of the world's fleet, it ranks sixth in the world in terms of tons of catch (after China, Indonesia, Peru, India and the Russian Federation) landing about five million tons in 2018 (SOFIA, 2020). The types of species caught range from salmon and pollock to lobster, crabs and shrimp which are caught in gear like trawl nets, gillnets, seine nets and pots.

A majority of these landings occur in Alaska, but there are ports in Virginia, Mississippi, Louisiana, Oregon, Washington, Massachusetts, New Jersey and California that contribute over 50 million pounds annually to the 9.3 billion pounds (worth $5.5 billion USD) that were caught in 2019 (Fisheries of the US, 2019).



All of the gear types used to catch this healthy, nutritious, sustainable, wild food are made from plastic, and should be recycled at their end of life. Dumping fishing nets and ropes into the landfill, incinerating or leaving them in a yard indefinitely, are all disposal options that waste precious resources.

Regional Infrastructure

Working with small, remote communities, multiple different types of plastic, and changing regulations governing the global waste trade required us to open regional warehouses to aggregate types and quantities of plastic. We now have warehouses in Washington, Maine and soon in Massachusetts. By having a centralized place where we can accept, weigh, process, do quality control checks and organize nets and ropes, we can comply with Basel regulations which require exported plastic waste loads to be homogenous. Fishing nets are made with multiple types of plastic, which need to be separated into different components - similar to the sorting of household recyclables. Our regional warehouses enable us to offer our services to smaller entities, be it private businesses or small cities, to aggregate gear until we reach 20 tons—the amount of fishing gear needed to fill a 40' export container if you load it correctly, and the amount needed to efficiently ship a product long distances over multiple oceans. Acquiring these facilities brings an added cost, and it is especially difficult to find medium-sized buildings, with industrial power requirements, in coastal cities where real estate can be prohibitively expensive.

Insights

Sustainable funding

The most critical part of any new idea or initiative challenging the status quo is to secure sustainable financing, and our business was no exception. Some of our more recent customers are single-vessel, family-run fishing operations, where fishing licenses are passed down generation after generation, and costs and expenses are tightly controlled. As a result, we have considered a variety of types and sources of funding, from the most obvious, like having a port pay for waste disposal using a portion of slip fees, to the most creative, like plastic credits; similar to carbon credits, businesses can pay to offset their plastic production and use by paying an organization to collect the same amount, thereby becoming "plastic neutral":

Grants- In the for-profit world, all businesses need some form of initial investment to get started and build out their idea, hire staff and make equipment purchases. Typically, these investments are financed by private investors who get involved because they believe there will be a return on their initial investment, but governments earn dividends from the success of blue economy businesses and therefore government funded grants should be available to private sector companies doing social and environmental good. This will enable more businesses to simultaneously consider people, planet and profit, ensuring they have the resources they need to explore new business models.

Extended Producer Responsibility (EPR)- As of this writing, there is no EPR for plastics in the US, although it is being considered. The EU provides an example as fishing gear is covered under the Single Use Plastics Directive along with other products commonly found on beaches. An EPR scheme seems to be a silver bullet solution to the ubiquitous problem of plastic littered on our lands and in our oceans, but it places all the responsibility on the plastic producer, when in fact many organizations benefit from the responsible disposal of waste. Shared EPR schemes on the other hand, involve many stakeholders, and distribute the costs so that one entity does not bear the entire burden.

Tribes and community groups- Many non-profits and tribes have chosen to develop recycling programs in their communities, when the local government has been unable to offer them. Robust fundraising schemes and utilizing dedicated solid waste funds can be ways to pay for recycling.

Insights

Sustainable funding

Local governments- Many, if not all, local and state governments have detailed landfill diversion goals. The State of Maine, for example, has a Statute that requires them to recycle 50% of their waste, and we are not currently meeting this Statute. If governments want to make progress towards meeting legally required goals, sufficient funds need to be made available for programs with a proven track record of diverting waste, and again, including for profit companies in the eligibility criteria.

Brands and plastic manufacturers- According to an article published in the Harvard Business Review in July of 2021 entitled "the green economy has a resource scarcity problem", 45% of the demand for recycled PET will be unmet by 2025. Brands and companies that have declared their commitments to source recycled plastic, green hydrogen and sustainable cotton, need to make investments in the supply chains and processing capacity needed to get these raw materials to their manufacturers. With a growing demand by customers for sustainable products, companies using the waste as raw materials should share in the cost of its collection along with communities and waste generators.

In an ideal world, we would build a coalition of all of these user groups, and additionally include other fishing industry stakeholders and blue economy businesses like ports, seafood processors, gear manufacturers and vendors.

Because of the complicated logistics needed to collect and deliver materials, manage a warehouse and build coalitions to sustainably fund recycling efforts, the last essential piece of the puzzle is a local representative.

Insights

Hire and Enable a Local Representative

Having local representatives is critical to gaining stakeholder buy-in, keeping gear disposal at the top of the collective agenda and learning the nuances and vocabulary of each new fishing community. For example, crabbers in Alaska call a wound-up bunch of rope a "shot" (Figure 1a) and lobstermen in Maine call it "pot warp" (Figure 1b). How were Mainers supposed to understand what Net Your Problem was even offering when all our marketing materials talked about was shots of line? Local representatives need to feel empowered to follow leads, build relationships and come up with and try (and fail) new ideas as they learn the ropes (pun intended) and become a fixture in the community.

Figure 1a. Shots of retired line in Alaska

Figure 1b. Pot warp from Maine

Positive, authentic relationships are absolutely essential to our business operations, and come with added legal and financial costs, but are worth every penny. Now that we have gone over what enables the blue economy business we have built, let's discuss topics that have made it more challenging.

Challenges
(and how to solve them)

Shift Focus From Port Reception Facilities

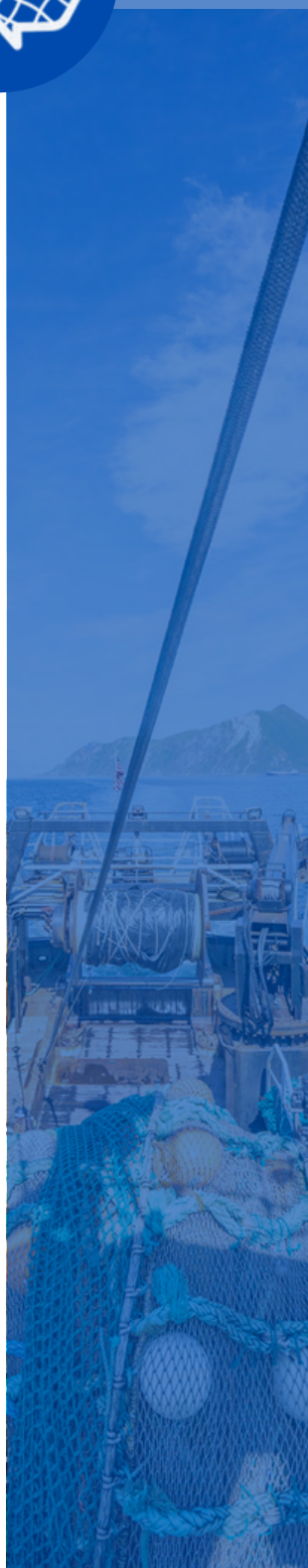
Many high level meetings, webinars and policy documents focus on the inadequacy of port reception facilities to handle waste given the MARPOL requirements that dictate such. We have collected over 450 tons of fishing gear in the last four years, and have not needed to rely on port reception facilities to collect and recycle fishing gear. Fishing gear in the ocean is a waste management issue that can be solved by providing incentives for fishermen to deliver their nets to a centralized location (that does not have to, but can be, run by a port). Continuously reporting on the lack of port reception facilities does nothing to establish them, create public private partnerships with ports, or find alternative ways to solve the problem.

Critically Evaluate Gear Marking Initiatives

Secondly, initiatives that have focused on marking fishing gear in case it is lost at sea as a solution to the problem of fishing gear in the ocean have introduced an added difficulty in the proper disposal of this gear. Mandates in the Canadian lobster fishery to include a thread in rope to identify the fishery would make it more difficult to recycle by introducing another type of plastic that would need to be removed and processed before recycling was possible. It is imperative that secondary ramifications of new policies be considered, and that while trying to solve one problem we do not create another.

Split Hairs between End of Life Gear and Ghost Gear

There is a lack of distinction between abandoned, lost and discarded gear (ALDFG) and end of life gear. They are commonly lumped together using vague definitions of the term discarded, but in reality have different solutions, different audiences (ALDFG can rarely be identified back to its owner), different disposal options (ALDFG is not mechanically recyclable) and different operational challenges (retrieving gear from the water is considerably more difficult and dangerous than moving gear around on land). Policies or incentives that promote the success of one are unlikely to cause significant changes to the challenges faced by the other. This segways to our next topic of discussing the disparity between programs that prevent marine debris and those that focus efforts on clean up.



Prioritize Prevention vs. Cleanup

There is a bias in the quantity of funding provided to prevent waste pollution and the quantity used to clean it up. The US West coast alone spends over half a billion dollars each year cleaning up marine debris (The United States Federal Strategy for Addressing the Global Issue of Marine Litter). Our programs that have successfully collected and recycled over one million pounds of gear have cost approximately $350,000. In the NOAA Marine Debris Program 2020 Accomplishments report, 100% of the prevention projects funded focused solely on education and did not include capacity building nor infrastructure investments to improve waste management. Furthermore, within the Marine Debris Program, an investment of $11 million USD resulted in the removal of 18,800 metric tons of debris, at a cost of $3.76 per pound (including the removal of extremely heavy items like concrete docks and derelict vessels). Our programs cost $3.33 per pound of plastic recycled without it ever entering or causing damage to the environment.

What we learned from our Biggest Failure - Connecting collection to pellet production

Convincing brands and manufacturers to support the collection part of the circular economy has been difficult. Despite compelling arguments, flashy marketing tools, and attempts to build relationships, we have not successfully gained a partnership where a brand using recycled plastic in their products pays a portion of our costs. There are two primary reasons for this: 1) we are one step removed from the material used in the manufacturing process. The fishing gear we collect is the raw material that needs to be processed and recycled into pellets, which is what later gets made into a product and 2) The price of virgin plastic is generally lower than the price of recycled plastic, making it already a more expensive material to use and leaving little room in the budget for other external costs.

What we learned from our Biggest Success - Dutch Harbor

Initially, we modeled the collection of gear based on our first experience in Dutch Harbor, Alaska. Fishermen paid to responsibly manage their waste and we provided this service. Subsequent challenges arose when we realized the alternatives, willingness and ability to pay were not uniform across the industry and across geographies. Our first success relied solely on charging the fishermen for disposal, and we did not (and still don't) encounter much resistance to this arrangement. We contract with a company to load the gear into shipping containers, and export large amounts of nets to our processing partners in Europe without any kind of formalized infrastructure. Doing business in Dutch Harbor is very expensive, fishing operations are very profitable, and run by large corporations, a dynamic not present in every fishery in the US and is what makes this model uniquely suited to work in this location only.

Acknowledgements

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