
SOLO WOMAN WALK-BATAPADY BEACH TO KANYAKUMARI-850+ KM-OCTOBER 5TH 2019 TO DECEMBER 6TH 2019-K2K THE COASTAL WALK

Solid Waste Across the Coastline of Kerala

JANET ORLENE



On October 5th, 2019, Janet Orlene set out on a solo coastline walk from Batapady beach near the border of Kerala to Kanyakumari. Backed by a team of 2, Pradeep Rajendran and Meghana Basavaraju, Janet covered the entire strip of coast, meeting the unique terrains, people and solid waste patterns of Kerala.

**This report has not been formally edited.* | 4th July 2020 | Authored by Janet Orlene
Report on Solid Waste along the coastline of Kerala - Main Report*

Introduction

What I expected to see was completely different from what I saw. I expected to find a lot more sanitary napkins, thin plastic bags, more obvious chemical pollution and other textbook things that I've learnt all my life. Instead, the most significant quantities of solid waste turned out to be in the form of slippers and shoes, plastic water bottles, diapers, medical waste and household waste. The chemicals I saw polluting the ocean were in the form of thin oily surfaces (often near ferries and the shipbreaking yards), mining wastes, sewage, etc.

This journey through all of the most beautiful coastal landscapes Kerala had to offer was an eyeopener in terms of human activity caused destruction. The coastline is one of the most powerful indicators of the human-caused environmental crisis.

What this report aims to show the observations I made during the walk down the coastline of Kerala.

Note:

**Although not mentioned otherwise, one of the largest polluters across Kerala shore are diapers.*

**Slippers, Shoes, Medical Waste are the other surprising but largely occurring pollutants.*

**Household wastes, Plastic bottles and other forms of plastic pollutants are mainly found in areas with a higher density of population.*

**Several areas showed biosphere damage with symptoms such as washing up of several species, jellyfish bloom, invasive flora and oft-spoken about, unseasonal weather changes and damage to the fish population.*

Intent and purposes

This report intends to look at the visual observation of solid waste made while walking continuously down the coastline of Kerala over 2 months as a district basis as well as one area that stood out in terms of the intensity of solid waste on the coastline or effort to curb the same in each.

Index

Introduction	2
OVERVIEW OF VISUALLY NOTED SOLID WASTE THROUGH THE COASTLINE OF VARIOUS DISTRICTS OF KERALA	4-12
Kasargod	4
SharadaNagar, Manjeshwar	4
Kannur	5
Dharmadom	5
Kozhikode	6
Kozhikode	6
Malappuram	7
Ponnani	7
Thrissur	8
Chavakkad	8
Ernakulam	9
Kochi	9
Alappuzha	10
Alappuzha	10
Kollam	11
Chavara	11
Thiruvananthapuram	12
Vizhinjam	12
DATA OF VISUALLY NOTED SOLID WASTE THROUGH THE COASTLINE OF VARIOUS DISTRICTS OF KERALA	13
<i>Kasargod</i>	14
<i>Kannur</i>	15
<i>Kozhikode</i>	16
<i>Malappuram</i>	17
<i>Thrissur</i>	18
<i>Ernakulam</i>	19
<i>Alappuzha</i>	20
<i>Kollam</i>	21
<i>Thiruvananthapuram</i>	22
SUGGESTIONS:	24
Conclusion	25

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Kasargod

There were signs of **medical waste** throughout the coastline from Batapady, and although the District of Kasargod has the most pristine beaches that we had ever crossed, it was also the most disturbed with medical waste. A few examples that stood out include, diabetes injections with needles still in them, intact and expired medicines in all forms, blood vials full of blood, broken glass etc. Kasargod city's shores were so littered with the same that in some areas, I could not see the sand at all. A fisherman at Kanhangad Beach met me. I asked him about the medical waste. He said that trucks arrived early morning on the bridge near the mouth of the river and dumped the waste. This is carried into the ocean by the river. Perhaps this is why most of the waste we saw had visible labels and writing.

Like almost every district, Kasargod also had the problem of thousands of slippers being washed up as well as plastic covers being plentiful especially in Kasargod City and Manjeshwar Beach.

One of the most memorable of the stretches was the beach stretching on from Bekal Beach - Pallikere beach. Littered with thousands and thousands of starfish bleached, washed up and a few still alive, this was also one of the cleanest beaches in terms of human litter. Kasargod does not face the burden of tourism in terms of the environmental depletion and tourist-centric resource utilization as much as the rest of Kerala. But the sheer volume of medical waste on its beaches is a distressful one.

SharadaNagar, Manjeshwar

Sharada Nagar continues to stand out in memory long after the walk. We stayed overnight on their temple grounds and spent long hours talking about the problems that the fisherfolk were facing due to the solid waste present. What we found was a unique, deep reverence reminiscent of the stories we hear of the old days. They are deeply connected to the village and the ancestral land. Their efforts to clean up has been regular as they would like to be the "model village" for those around them. The practices to clean and prevent waste from entering the ocean also seems to be tied to the temple Shri Sharada Bhajana Mandira that strives to be a model to the villagers who pay a visit to the same.

Kannur

As I walk further towards Payyanur and Kannur, the density of the human population steadily changes, and with that, the attitude towards the ocean. Most of the coastline had significantly more plastic bags tied up with household garbage inside it and tossed in the ocean. The few times we tried to record people tossing the garbage into the ocean, we were too far to record their identities. But they quickly became aware of our phones, threw the garbage and moved away.

Payyanur was fairly clean besides the now natural-to-the-environment slipper, water bottle and plastic fiesta that is to be expected along the coastline. Payyambalam beach was beautiful until I crossed St Angelo fort. The stench alone from the rotting garbage and the shores choking with garbage near the harbour and beyond was enough to turn my stomach. From Kizhunna beach and beyond were clean beaches, and unlike pristine, untouched beaches, these were sanitized by the row of resorts throughout until Edakkad which was well maintained. Thalassery's sea walls are lined with garbage and the waves carry the plastic and the rotting meat and vegetable waste thrown into the ocean in its movements back and forth into the sea wall. Children, goats, cats and dogs play in the same. Some pockets of Thalassery city's coastline look like a landfill. There was a sharp increase in disposable food packaging in this district—notably, large quantities of plastic cups, plastic food parcel covers and so on. Near Chootad beach (Close to Madayi) was an industry pick up point of the sort with many lorries parked. This area was filled with **biological waste** of all kinds (Mostly intestines and other offal, and skulls of bovine and caprine animals) which were thrown into the sea and often brought back by the waves littering the shores as large composting piles.

Dharmadom

Across Azhikkal, a large ship by the name "Ocean Ruler" lay on the beach. A quick search the next day, reveals that Ocean Ruler (IMO 8408600) and Oivalli (Stranded between Dharmadom and Kannur) have been stuck for a while now. The local tourists told me how Oivalli was a popular wedding photoshoot prop until the ship moved due to the current and now they dread it. I meet a fisherman close to the ship and ask him about the story. He tells me about how the leaking of chemicals has affected the catch of fish. He also talks to me about SILK (Steel Industrials Kerala Ltd), raising concerns about the growing number of cancer patients near its vicinity.

As we talk to other residents of Dharmadam whom we stayed the night with, they tell us about the worries that SILK has raised throughout. The fears of **chemicals** in both gaseous and fluid form, leaking from Oivalli during its deconstruction for scrap remains with the residents who live around it.

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Kozhikode

The sea walls across Kozhikode were lined with plastic. Construction material bags, large plastic bags, Thermacol, plastic cups were strewn often after an evening of alcohol, plastic plates, and so on. Crossing through Vadakara, there was strangely unexpected trash including one TV, several plastic toys and furniture. The number of places dedicated to tourism on the shore shoots up drastically from Kozhikode Dist onwards which also has an increase in soft drink bottles, packed foods both locally owned companies and mainstream brands finding its way into the ocean.

While crossing Beypore, we found out about another shipping yard from the locals. Besides the Urus, they inform us about the chemicals and oils that pour out from the ship on dismemberment. They expressed concerns. Crossing Beypore Azhikkal by the ferry, we could see a thin film of oil spread across the surface of the water, glittering in multiple hues in the evening light.

Kozhikode

It was fast approaching the evening when I reached Kozhikode city. The outskirts had rocks with Kallumakkai (mussels) that were being picked by women. A quick conversation revealed that the number has been dropping drastically in the last 5 years. They were being picked before they were ready.

Crossing through to Kozhikode revealed two aspects, the slums adjoining the harbour before the main beaches and the main beach areas. The slums were strewn with sewage and plastic bags filled with **household garbage**, a wall away was the main beach which was being cleaned daily but a short run through the sand by hand reveals many broken pieces of plastic. What Kozhikode beach has in ways of constant cleaning lacks is the pieces not being dropped in the first place. Multiple food carts serving with plastic spoons and forks, thrown on the beach after a quick snack shows a more profound problem

Malappuram

The district was a beautiful one. The coastline covered with coconut trees right next to the almost continuous sea wall, the district has far greater worries than the solid waste found here. Yes, the coconut groves are covered with little pieces of torn thin plastic covers extensively but the greater worry is the **sea erosion** that has taken large portions of roads, homes and shore away. The streams leading to the ocean were black and smelled filthy. Plastic, choking almost every one of them. But the freshwater reservoirs were treated with a certain reverence at the same time.

Some fisherfolk collected vast numbers of bottles for recycling. When asked about the uses, a few spoke about recycling them, the other spoke about selling them to people who make floatation devices out of empty bottles for the nets. These, I was informed, were more lucrative for them.

Fisherfolks are worried about the future of fishing. They were worried about the impact of plastic on the numbers of fish and their future tied to the same.

Commercial beaches and establishments as beach parks that also attracted vendors had packaged food covers, paper and plastic cups and plates. There is a growing consciousness in pockets of people but there is a lot more to be done.

Ponnani

Ponnani was almost like any other place as I started walking the stretch. This was the first area seriously affected by erosion. Many coconut trees had been washed away and what was left was entangled with plastic and hundreds and hundreds of rubber slippers. Remains of homes stood empty and staring out at the open.

Sea walls were constantly being eroded and washed into the ocean. Many blocks of rock had already been washed away and newer layers had been built behind them.

Both sides of the sea wall, facing the land and facing the ocean, were covered in plastic covers - being blown about by the wind or the ocean currents.

Thrissur

Several areas along the coastline of Thrissur were covered with waste. A large section was of plastic gunny sacks used for construction purposes, diapers, slippers, soles of shoes and other plastic waste. Thrissur district also showed severe signs of coastline damage due to erosion including many homes partially or completely torn down by the currents.

In each case, many coconut trees had been washed away and remains of homes filled (sometimes to the ceiling) with sand. At Chavakkad and beyond, the devastation only grew.

Large quantities of **rubble** (Both housing and sea wall), plastic sacks, microplastics from broken and eroded trash littered below the sea walls that stretched kilometres.

Chavakkad

Rekha, the only deep-sea licenced fisherwoman's home, was near Puzhimuth at Chavakkad. Her neighbours' home is filled up to the ceiling with sand. Plastic bags, possibly months or even years old have got trapped in between the layers of sand brought in by Cyclone Ockhi and the years of erosion occurring severely in the area. She tells us about how the seas have also become rougher with time. Walking down from her home, we see many trees uprooted and washed away by the sea as well as more and more homes destroyed. Plastic is still thrown into the sea by many households though. They wash back up to the same destruction creating a very post-apocalyptic scene. Many piles of slippers and plastic covers can be found here.

A large number of **microplastics** here are also cause for alarm. In the few piles of shells that I saw gathered, there were many broken pieces, some much smaller than the shells but this is also found all along the coastline, deeply buried into the sand.

Ernakulam

Moving across Vypin, I wandered down the coast to find the ferry. The large scale destruction of homes and the mounds of sand deposited into and over homes was a stark reminder of the recurring destruction of the environment. Children played on the mounds of sand and a few people were trying to remove it with a shovel. I could notice no solid waste in these areas. However, on all public beaches of Vypin were packaging materials, broken spoons, food remains buried into the sand, etc. A peppered version of this continued across the areas populated by groves of trees.

Moving into a more crowded and populated area of Vypin while walking to the ferry only had more plastics and other dirt. Walking down to the lighthouse revealed areas covered with oils, plastics, shoes and slippers, and a large number of **hyacinth** that had been washed to the sea. Bits of fishing nets and ropes knotted up with other trash formed balls of rubbish that littered the beach. There were also broken thermocol and fine fishing lines that had been abandoned on the beach as well.

Mararikulam had plastic wastes and slippers where the records did not abound.

Kochi

The mouth of Vembanad Lake that we crossed on the ferry was covered with large amounts of slow-moving pollution. **Hyacinth and plastics** were a common sight. The same was seen at Mahatma Gandhi Beach and Fort Kochi beach as I walked down. Large piles of rubble that consisted of footpaths that had been washed away along which had plastics along the cracks were seen. Plastics consisting of thermocol, slippers and chiefly packaging materials (plastic cups, spoons, wooden spoons, paper plates, plastic plates, paper cups, biscuit/chips/other food packaging, toys, plastic pinwheels, etc) littered the commercial beaches. The walk beyond the land that belonged to the Armed Forces revealed unused, rusted and dangerous playgrounds (the pieces lying dangerously around when I came across them), Homes that had been built right to the sea wall and a lot of household plastic wastes and rubble.

Alappuzha

The section along Mararikulam started the famed resorts. Moving down, I reached Alappuzha. The few streams that I had to walk across on my way were littered with filth and stank. They were black and slow-moving. They were also covered with plastic covers and bottles. The patches of trash included large amounts of nets both fine, mist-like ones to larger ones. These entrapped many other pieces of trash and sometimes fish before washing up to the shore. Towards Omanapuzha, we found abandoned buildings eroded by the ocean. These also included what seemed to be Resorts containing furniture. The shoreline continued to be littered with many buildings reduced to rubble all through to Ambalapuzha where I found the shore covered with hundreds of dead fish and the heads of prawn that turned the ocean pink. This area too was devastated by erosion and as one fisherman put “The football grounds where I played as a child is now there” (As he pointed out into the ocean.

Alappuzha

Unlike other well-known cities’ beaches, Alappuzha was a lot more **sewage and trash-strewn**. It is in this garbage laid shore that I found foreigners searching for little clean spots to lie down to sunbathe. The dirty plastic covers blowing around in the wind did not let them be, however.

Allepey’s waterways are also choked with hyacinth and packaging material. The nearby stalls provide easy fodder to those who drop the same.

Kollam

The waters progressively got more and more beautiful towards Kollam. Near Ayiramtengu, the solid waste deposits slowly increased until they became large mounds spilling off the hillside near Paravoor. This largely consists of **plastic bottles and covers**, often in local dumping grounds. This includes oily sediments near Mundakkal, near the eroded dredger Hansita with many bits of rust and rubble washed along the shore. Nets, gunny sacks and other plastic debris along Paravoor, household plastic waste near Mayyanad, and a general high density of plastic and other trash along Kollam itself.

Chavara

A little before Chavara, and before Amritapuri Ashram lay several Titanium Mining industries. There were spaces in which the sludge had overflowed and I had to walk through it which mildly irritated my skin. Only after that, I found that the land belonged to the mining industries. Most of the land around this was blocked from access or even conversation. The areas were covered with only invasive species that covered the land throughout.

Staying over at Amritapuri, we found out that some of the residents we spoke to had no clue about the presence of the **mining** industry even though it was only a few kilometres away. The land outside was littered everywhere a tourism-based shop was found as well as the further we went from Amritapuri. Those near Amritapuri spoke about the erosion and damage caused by the sea. The waterways near the mines did have a certain amount of plastic and other wastes floating about.

Thiruvananthapuram

The last district before I crossed over was Thiruvananthapuram. The stretch beyond Varkala to Anchuthengu was fairly clean. Anchuthengu however, was badly hit by erosion and several families we saw were living in homes whose roofs had almost given away. The walk down to Thiruvananthapuram city was dotted heavily by plots of land used as local garbage spots including larger ones near harbours. 4 places stood out heavily:

Kovalam - The beautiful beaches were littered with plastics and microplastics generated by tourism catering shops and stalls next to the beach.

Thiruvananthapuram - The rubble and plastics laid about the entire stretch of beach. These consisted of household wastes, fish wastes, plastics, hyacinth and so on. The villages around Muttathara had no access to solid waste management. To the point where they had started large pits near the sea to dispose of the waste. With each wave, the rubbish got carried into the sea and back into the land.

Vizhinjam - The old harbour and the construction of the new seaport

Poovar- A large Jellyfish bloom that littered the coastline in thousands while rendering the fisherfolk fishless.

Vizhinjam

At Vizhinjam, I crossed several minor water bodies that smelt like sewage and were covered with old plastic bags. I met several fisherfolks near the seaport who informed me that their water quality had turned more acidic. The areas where they stayed in and near the old harbour were full of plastic wastes. The areas covered with nets and other ware to prevent anyone from walking through.

The areas around the new Vizhinjam port have faced acute erosion down to Poovar which is facing continuous Jellyfish blooms

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Visual Data based Key:

1 - almost nil/nil

2 - Scattered

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4 - Heavily distributed / stepping in it often

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Kasargod

<i>Name of Village / City</i>	<i>Chemical Pollutants (Oils/ Industrial pollutants)</i>	<i>Household Waste (Plastic/Paper/Packaging)</i>	<i>Biological (Flora and Fauna parts or Whole)</i>	<i>Medical Waste (Tablets / Bottles / Syringes)</i>	<i>Tourism industry based (Plastic or Paper based solid waste)</i>	<i>Sewage</i>
Kunjathur	1	2	1	3	1	1
Manjeshwar	1	4	1	4	4	2
Uppala Gate	1	3	1	4	4	1
Mangalpady	1	2	1	3	1	1
Kasargod	1	5	3	5	5	3
Udma	1	2	1	3	4	1
Bekal	1	2	1	2	1	1
Pallikare	1	1	1	1	1	1
Kanhangad	1	3	1	3	1	1
Nileshwar	1	4	1	3	1	1
Cheruvathur	1	3	2	2	2	1
Padne	1	4	2	3	2	1
Trikaripur	1	2	2	3	1	2

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Kannur

Name of Village / City	Chemical Pollutants (Oils/ Industrial pollutants)	Household Waste (Plastic/Paper/ Packaging)	Biological (Flora and Fauna parts or Whole)	Medical Waste (Tablets / Bottles / Syringes)	Tourism industry based (Plastic or Paper based solid waste)	Sewage
Payyanur	1	2	1	2	1	1
Ettikulam	1	1	1	1	1	1
Pazhayangadi	1	2	1	2	2	1
Muttil	1	3	1	2	2	1
Matool	1	2	1	2	2	1
Azhikkal	4	2	1	2	2	2
Azhikode	3	3	1	2	3	1
Kannur	3	4	4	3	4	3
Thottada	1	2	1	2	3	1
Edakkad	1	1	1	2	3	1
Dharmadom	4	5	5	3	2	1
Thalassery	3	5	5	4	5	3
New Mahe`	1	2	1	1	3	1

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Kozhikode

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Mahe	1	3	1	2	3	2
Chombala	1	3	1	1	1	1
Madappally	1	3	1	2	1	1
Vatakara	1	3	1	1	2	1
Iringal	1	2	1	1	1	1
Thikkoti	1	4	3	2	2	2
Moodadi	1	2	1	2	2	1
Keezhpally	1	3	1	2	2	1
Kappad	1	3	1	1	3	1
Vengalam	1	2	1	2	1	1
Elathur	1	2	1	2	2	1
Pavangad	1	3	1	2	2	2
Kozhikode	1	3	1	2	4	3
Marad	1	1	1	1	1	1
Beyepore	3	3	1	3	3	2
Chaliyam	1	2	3	2	2	1

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Malappuram

Name of Village / City	Chemical Pollutants (Oils/ Industrial pollutants)	Household Waste (Plastic/Paper/ Packaging)	Biological (Flora and Fauna parts or Whole)	Medical Waste (Tablets / Bottles / Syringes)	Tourism industry based (Plastic or Paper based solid waste)	Sewage
Vallikkunnu	1	2	1	1	1	1
Chettipadi	1	2	1	1	1	1
Parappanangadi	1	2	1	1	1	1
Chiramangalam	1	2	1	1	1	1
Tanur	1	3	1	2	2	2
Vakkad	1	2	1	2	2	2
Kootayi	1	2	1	2	1	1
Padinjarekkara	1	2	1	1	2	1
Ponnani	1	3	1	2	3	2
Puduponnani	1	2	1	1	2	1
Veliancode	1	2	1	1	1	1
Palappetty	1	3	1	1	1	1

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Thrissur

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Punnayur	1	2	1	2	1	2
Chavakkad	1	2	1	1	2	2
Kadappuram	1	3	1	1	2	1
Chettuva	1	3	1	1	1	2
Engandiyoor	1	3	1	1	2	1
Vadanappally	1	2	1	2	1	2
Snehatheeram	1	2	1	1	2	1
Palapetty	1	2	1	1	1	2
Padinjare Vemballur	1	2	1	1	1	1
Eriyad	1	2	1	2	1	1
Azhikode	1	3	1	2	2	2

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Ernakulam

Name of Village / City	Chemical Pollutants (Oils/ Industrial pollutants)	Household Waste (Plastic/Paper/ Packaging)	Biological (Flora and Fauna parts or Whole)	Medical Waste (Tablets / Bottles / Syringes)	Tourism industry based (Plastic or Paper based solid waste)	Sewage
Kuzhupilly	1	2	1	1	2	3
Vypin	1	3	1	2	3	4
Fort Kochi	3	4	3	2	4	5
Kochi	1	3	2	1	4	4
Chellanam	1	3	1	2	1	3

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Alappuzha

Name of Village / City	Chemical Pollutants (Oils/ Industrial pollutants)	Household Waste (Plastic/Paper/ Packaging)	Biological (Flora and Fauna parts or Whole)	Medical Waste (Tablets / Bottles / Syringes)	Tourism industry based (Plastic or Paper based solid waste)	Sewage
Cherthala	1	3	1	1	2	1
Cherthala South	1	3	1	1	2	1
Mararikulam	1	2	1	1	2	2
Alappuzha	1	5	1	2	4	5
Paravur	1	4	1	1	3	2
Ambalapuzha	1	3	1	2	2	2
Purakkad	1	2	1	2	2	1
Thottapally	1	2	1	1	2	1
Thrikkunnapuzha	1	3	1	1	1	1
Perumpally	1	2	1	2	2	1
Vazhi Azheekal	1	3	1	2	3	2

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Kollam

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Azheekal	1	3	1	1	1	1
Vallikavu	1	2	1	1	2	1
KakkaThuruthu	1	3	1	2	2	2
Alumkadavu	1	3	1	2	1	1
Chavara	3	2	1	2	2	1
Maruthadi	1	2	1	1	1	1
Thangassery	1	3	1	2	2	2
Kollam	1	4	1	3	4	3
Eravipuram	1	2	1	1	1	1
Mayyanad	1	2	1	2	1	2
Pozhikara	1	1	1	2	1	1
Pananthodi	1	3	1	2	2	1
Kappil	1	1	1	1	1	1

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Thiruvananthapuram

Name of Village / City	Chemical Pollutants (Oils/ Industrial pollutants)	Household Waste (Plastic/Paper/ Packaging/ diapers/ slippers)	Biological (Flora and Fauna parts or Whole)	Medical Waste (Tablets / Bottles / Syringes)	Tourism industry based (Plastic or Paper based solid waste)	Sewage
Edava	1	2	1	1	2	1
Kurakkanni	1	1	1	1	1	1
Varkala	1	1	1	1	2	1
Vettoor	1	2	1	2	2	1
Vakkom	1	2	1	2	3	1
Anchuthengu	1	3	1	3	2	1
Anathalavattom	1	2	1	2	2	1
Poothura	1	2	1	3	2	1
Kadacom	1	2	1	2	2	1
Madanvila	1	2	1	2	2	1
Anapara	1	2	1	2	2	1
Padinjattumukku	1	2	1	3	2	1
Thumba	1	2	1	2	2	1
Kochuveli	1	2	1	2	2	1
Kannathura	1	3	1	1	2	1
Thiruvananthapuram	1	5	1	3	4	5
Vallakkadavu	1	5	1	3	4	1
Beemapally	1	5	1	3	4	1
Pachalloor	1	2	1	2	2	1

**This report has not been formally edited.* | 4th July 2020 | Authored by Janet Orlene
Report on Solid Waste along the coastline of Kerala - Main Report*

Kovalam	1	2	1	1	2	1
Vizhinjam	2	3	1	1	2	3
Kazhivoor	1	2	1	1	1	1
Poovar	1	2	1	1	1	1
South Kollemcode	1	2	4 (Jellyfish bloom)	1	1	1

Visual Data based Key:

1 - almost nil/nil

2 - Scattered

3 - Scattered with points of rubbish heaps

4 - Heavily distributed / stepping in it often

5 - unable to avoid waste without stepping on it

SUGGESTIONS:

1. There are several areas which are fighting the issue of solid waste as a community. Modelling around these villages could make a significant impact on the dwindling energy of those constantly working towards change as well as inspire those who are impacted but struggling with effective initiatives. Education programs and training can be run through them as well - ***Environment Preservation based Model Villages.***
2. The areas most dependent on coastal tourism often seem to have larger quantities of solid waste, sewage and other issues that impact both the tourists as well as the locals. Cleanups, while ongoing, often are hindered by the sheer volume of waste generated by people. ***Resorts / stays close to the coastline taking responsibility for the cleanliness of the area nearest to them has worked in several areas that I crossed with minimum effort.***
3. Most villages and cities showed a deep connect through stories and mythology with the ocean. Some places were far more transactional where the ocean was a job and a place to sell. These had far more solid waste issues, callousness, industrial damage and so on than the areas with the stories. As Kadalamma holds reverence across religions and the protection of Sacred Groves have been successful across Kerala, ***Sacred Coastal Zones*** would help set up biodiversity protection programs for the ocean.
4. The fisherfolk of Kerala are open to ***training and clean up based programs.*** They collect quite a bit of plastic in their nets while fishing every day. This is often dumped on the shore. If it isn't picked up by the sanitation workers, it gets washed back into the ocean.
5. ***Diapers need to be incinerated as medical waste.*** Often they litter the ocean and spill out non-biodegradable contents as they break down. This also contributes to microplastic waste and general

Conclusion

Solid waste is one of the largest factors in the dip in the number of fishes over the years. People are knowledgeable about the impacts of solid waste dumping. The largest issues in coastal waste dumping include:

- Medical waste
- Slippers
- Diapers
- Household Waste
- Bottles (glass and plastic)
- Fishing industry waste - nets, fishing lines, thermocol

There seem to be two major forms of solid waste dumping on the coastline in accordance to the conversations we had:

- 1) Despite solid waste management programs- Where one finds it easier to dump solid waste due to lack of education about the negative impacts of pollution, lack of concern, a belief that plastic “melts” in the ocean and degrades, cheaper (in terms of medical waste dumping or another industrial dumping), or apathy.
- 2) Lack of solid waste management programs - Good examples of these are Anchuthengu and South Thiruvananthapuram (The Valiathope, Vallakadavu, Valiyathura, Beemapally cluster) who have had no choice but to turn their homes into a large dumping ground. It is also much harder for the solid waste programs to be practised as easily as other areas due to the maze-like paths and roads, perhaps, this discourages implementation.

But, there is still hope. The coastal community is impacted deeply by environmental crises regularly whether it comes to their livelihood, their futures or their very existence. They are aware of erosion, overfishing, solid waste issues and how it ties back to the activities of people. They are also aware of how their household wastes, bottles do not allow effective breeding or movement of fish in their areas. There are often local people making an active effort in their villages to make an impact in any way and are welcome to both change and help.