

# Charmouth microplastic cleanup

2024

24-28th January  
and  
10-14th March

Nurle



Charmouth beach is a SSSI under the The West Dorset Coast SSSI between Chesil Beach and Devonshire Head near Lyme Regis is an internationally important geological site, particularly famous for its fossil reptiles. The varied undercliffs have a wide range of habitats which support a number of rare plants and animals. Adjoining the coastline are unusually large areas of herb-rich grassland of a type now very restricted in occurrence.

We will have no impact on the above SSSI designation from our works removing microplastics.

For 10 hours a day our team, armed with specially designed equipment, tackles the issue of microplastics on our coastline. We use vacuums and sieves to pull the material up and separate the desired size from organics.

This works exceptionally well on every beach we've visited. However, because Charmouth has large quantities of organic material the site will require us to build a vacuum chamber specifically for this cleanup; and a member of staff to run it whilst we're there.

The methodology for cleanup is that we will hit the area over a winter spring high tide for two reasons...

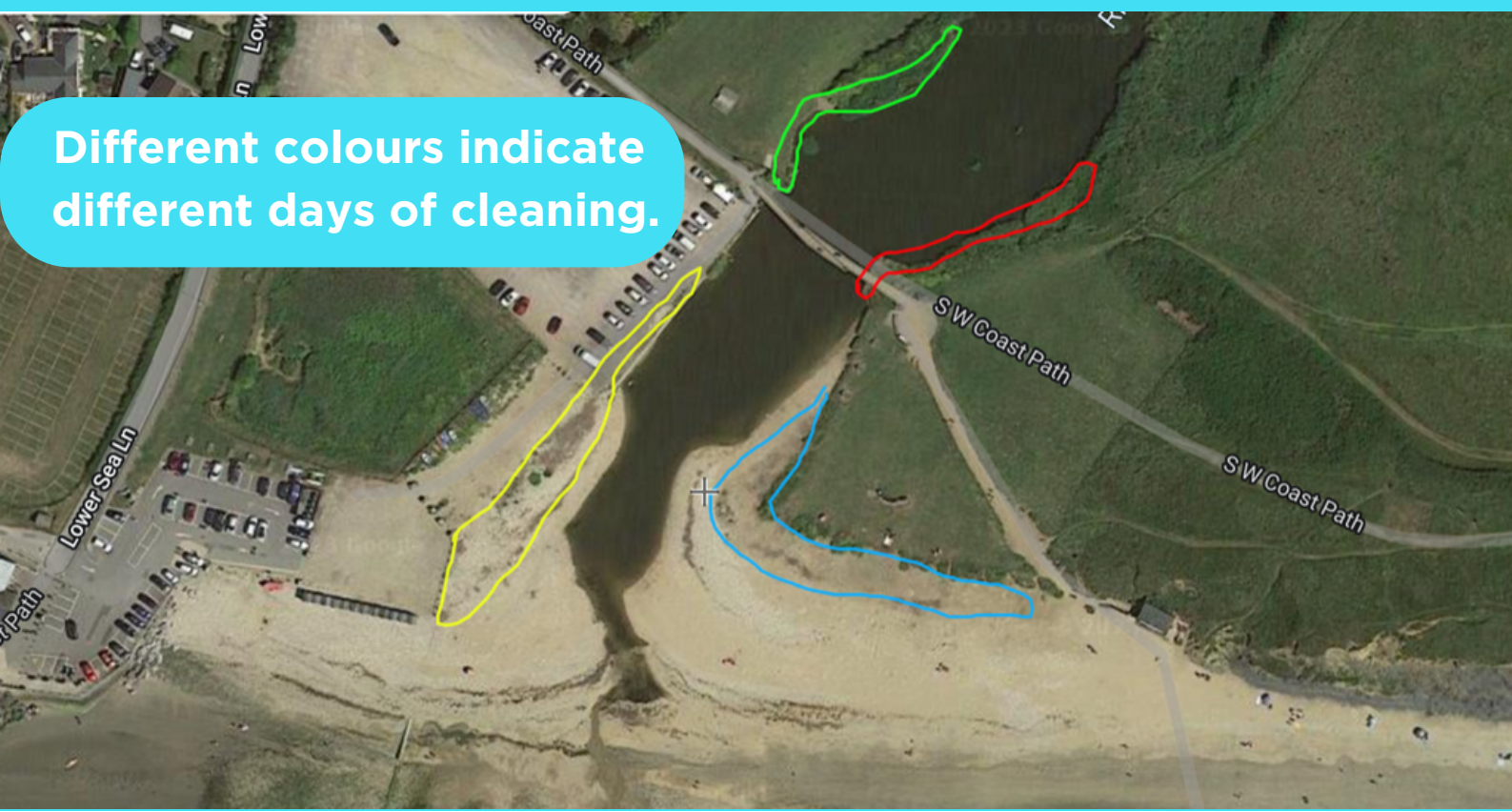
1. We need peak plant die back so we can access the problem and its not entangled in the root systems.
2. The larger tides will surface the microplastics (as they float) ready for us to remove.

We will spend 4 days cleaning the entire problem and return the two months later over another spring high tide, during this time we should see that all the microplastics we missed on the first clean resurface once more and we will remove the issue again, but in much lower numbers. Once removed with our machinery we will take the bags of mixed organic material and microplastic to the custom built vacuum chamber, placed in the carpark, which will remove all of the 95% organics. We will place the organics back where we took them from.

For every month we return we will be able to remove more and more of the problem. But I believe it's possible to remove the vast majority of the microplastic in Charmouth over a 2 month cleanup.



Located to the East of the pollution point, Lyme Regis Sewage Outflow Pipe, the river Char is a small intertidal estuary. Due to the geomorphology of the coastline, freshwater inputs often attract the highest level of microplastic on the beach. During a site review, biobeads were found in high numbers at the below location around the river mouth and therefor our efforts of cleaning are best concentrated here.





# Equipment



## Machine, Micro-vacs, and organic separator.

Due to the large amount of organic material at Charmouth we are developing a stationary tool for this clean to separate the organic material and deposit it back in situ.






# Case Studies

A wide-angle photograph of a sandy beach completely covered with a thick layer of debris. The trash includes a large amount of dark, tangled seaweed, numerous pieces of white and clear plastic, fragments of wood, and various small, colorful bits of litter. The scene depicts a state of significant environmental neglect.

**Before**

A photograph of the same beach area one year after a cleanup. The debris has been almost entirely removed. The sand is now visible, with only a few scattered, small pieces of trash and some dried seaweed remaining. The overall appearance is much cleaner and more natural.

**1 year after  
cleanup**





**Before**





**4 months  
after  
cleanup**



# Preliminary Dates

2024

24th - 28th January

10th March - 14th March

The dates set above are the highest tide dates over winter, with March being one of the two highest tides in 2024. We choose these dates approximately as they give us the greatest chance of re-surfacing microplastic that have been buried in sand and organic material. However, a large storm would give a water surge larger than tides in the above dates. If this happens, we may quickly pack the van and head down to remove the pollution.

