

AQUAFILLIA

colonizing the gyre





NORTH PACIFIC GARBAGE PATCH_

The residue of consumerism has invaded our oceans. Trash from packaging and the litter that lines drainage systems is forming a chain of artificial islands in the North Pacific.

The world's oceans are comprised of five major gyres. These are a series of convergence zones that result in centrifugal currents. Wind patterns as well as temperature differentials and the earth's rotational pull play a role in the force and direction of current. The North Pacific Subtropical Convergence Zone is formed by four bounding currents in each direction, and covers the largest range of any gyre – 7.7 million square miles – spinning in a clockwise direction. The spinning motion of the gyre pulls marine debris into the calm center.

The Great Pacific Garbage Patch seems to exist within the realm of fiction. Effort to collect data and measurements results in a swinging scale. However, even assuming the conservative figure, this unintentional trash dump is host to an outrageous volume of debris.

The architecture of this site will be grounded in narrative. There are several characters and their parallel built intervention that could potentially occupy this artificial island.

- The Scientist will want a research and development station in order to study and better understand ocean currents and marine debris.
- The Captain will oversee the colony and have an interest in conservation/remediation
- The Mechanic/Pilot will be involved in utilitarian requirements such as maintenance and supply drop-off
- The Eco-tourist will dream of inhabiting an isolated spectacle that requires a wait-list and bonus package for VIP guests.

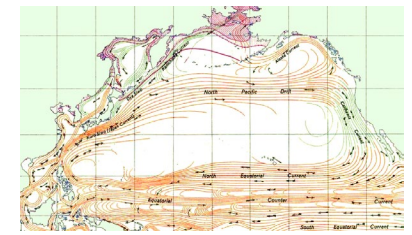
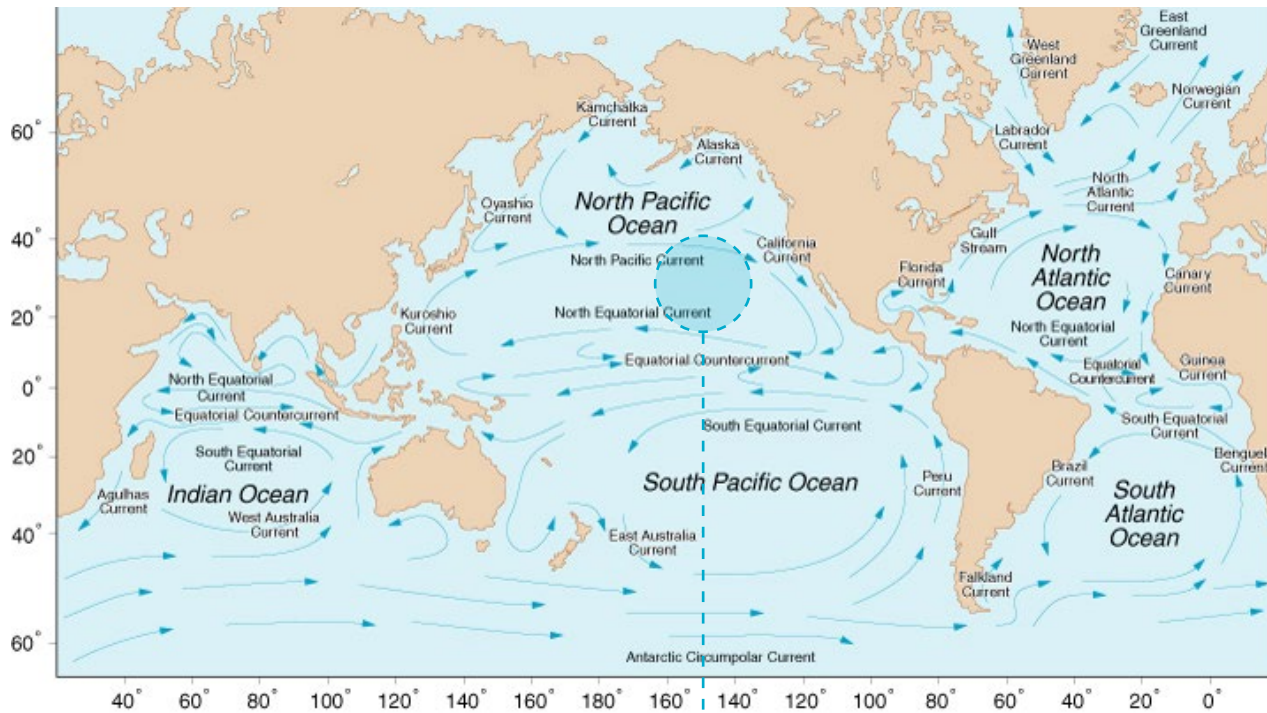


fig 02 North Pacific surface currents

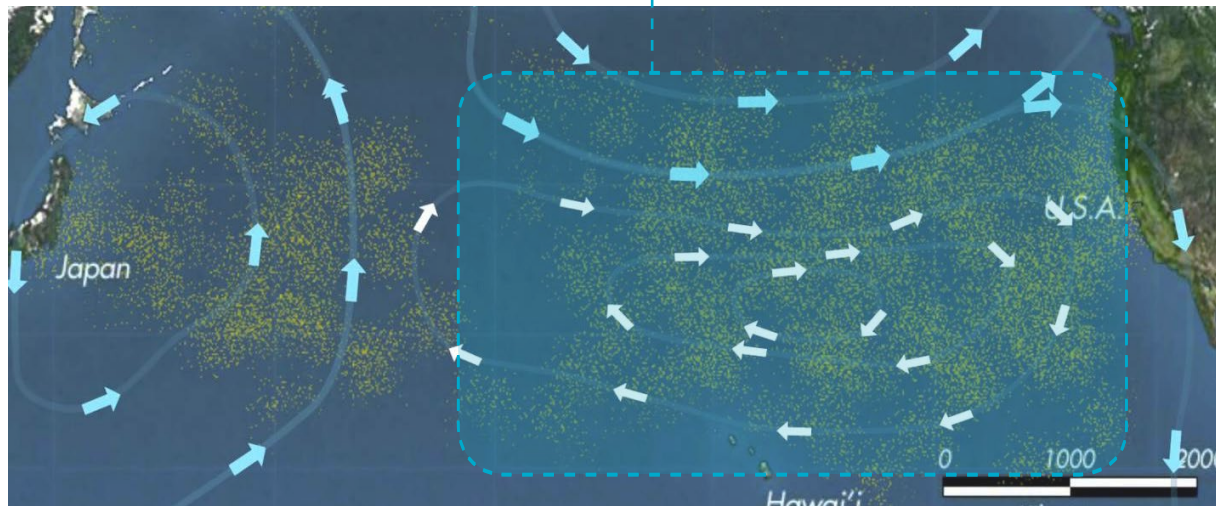
MAPPING THE OCEANIC GYRES

Series of maps documenting ocean currents.

Focus is on the North Pacific. The yellow particles in *fig 03* represent the density of marine debris that has been trapped within this convergence zone.

fig 03 surface currents_American Meteorological Society

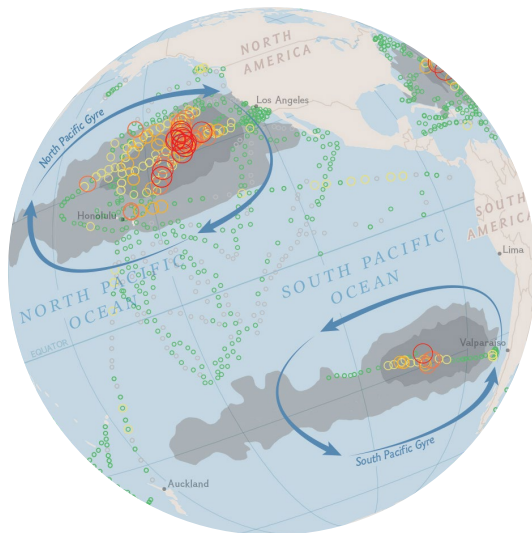
fig 04 marine debris_NOAA



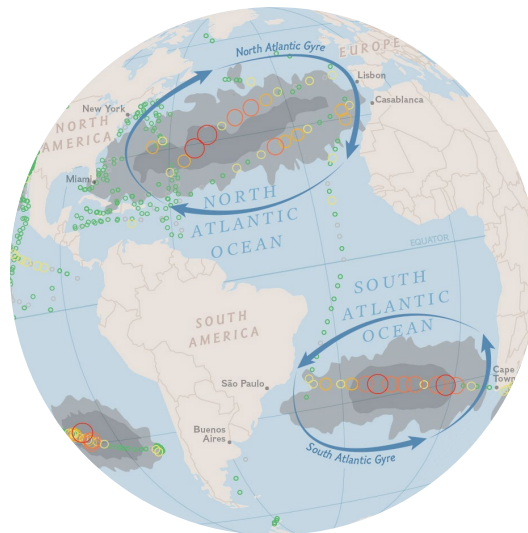
PLASTIC ACCUMULATION

These diagrams track the amount of plastic debris that now litters the world's five gyres.

The north pacific gyre off the west coast of the U.S. is home to the largest garbage patch.



Pacific Ocean Gyres



Atlantic Ocean Gyres



Indian Ocean Gyre

Measured number of plastic items per sq km (in thousands)

○ 0 ● 0 - 50 ● 50 - 150 ● 150 - 350 ● 350 - 700 ● 700 - 3,500

Inner accumulation zone — Outer accumulation zone



MICRO - SYSTEM

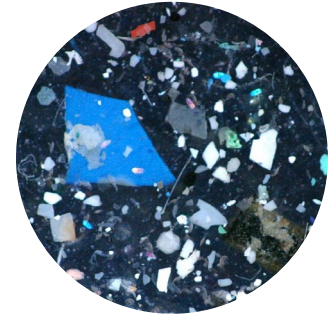
Marine debris entangles to form artificial islands

The Great Pacific Garbage Patch is comprised of micro plastics - invisible to satellite imagery and aerial photography. These conglomerations float below the surface, a soup of neon particles in infinite constellation.

fig 06 Fish net tumbleweed



01



02



03

01 Sea combers

02 Microplastics/layers of transparency

03 Below the surface

TRAVEL ≠ DESTINATION

Plastics' staycation in the Away

Utilizing localized materials
in fabrication.

Estimated to be roughly  **2x** the size of Texas (~500,000 mi²) - 6 million mi²

80-90% plastic (not biodegradable) - the sun breaks the plastic down into smaller and smaller microplastics through a process of photodegradation, invisible to satellite imagery

travel time: **1 year** from the east coast of Asia | **5 years** from the west coast of U.S.

*fig 07 Indra's cloud_
Anne Percoco*



fig 08 Bongo nets

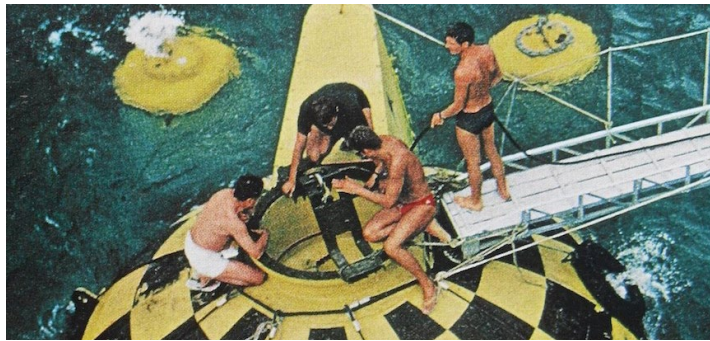


fig 09 Cousteau Crew with submersible



fig 10 Jacques Cousteau lowering Calypso



fig 11 Deploying collection trawl

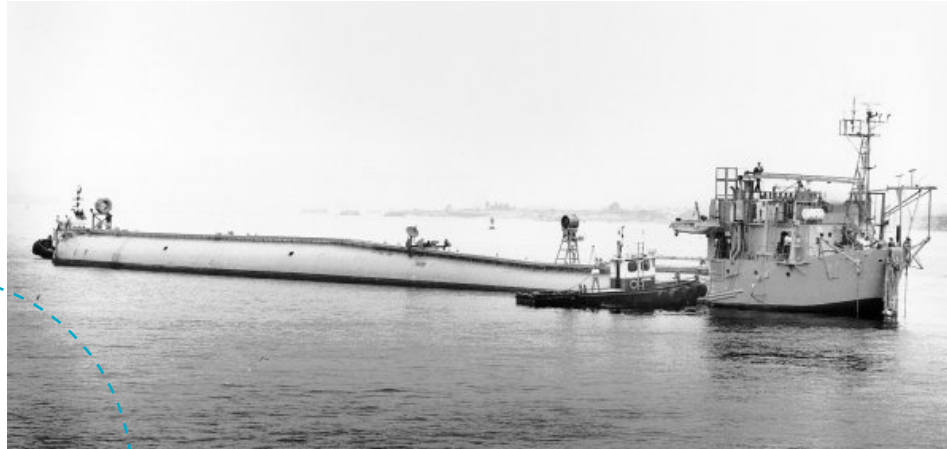
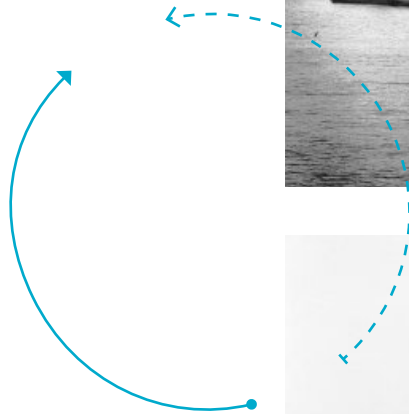
SUBMERSIVE SAMPLING

Nautical devices used to collect
marine data



fig 12 Floating Instrument Platform

SCRIPPS INSTITUTION OF OCEANOGRAPHY



ALTERED-STATE

Re-orientation of the Ocean
current

Images document the shift between the horizontal and vertical state of FLIP. This 355 foot vessel is classified as a spar buoy. When vertical, 300 feet are submerged below water - allowing the Research labs and living quarters to remain stable in harsh storm conditions. Storage capacity permits a stay of 30 days on board.



Bronson and Gloates

SIO Reference 85-21

6. Check all air ports closed.
7. Close head discharge valves, close all interior doors and hatches.
8. Close all platform doors. Close intake to Tank 10 vent.
9. Pump hydraulic accumulator to maximum pressure (1200 lbs). (Leave pump running.)
10. Don life jackets.
11. Unlock hydraulic valves.
12. Open air bank risers as required. Normally all bottles cut in.

From vertical to horizontal:

1. Transfer electrical load to 40 KW generator and secure main engine.
2. Secure air compressors. Check air compressors clear for gunballing.
3. Secure all interior doors.
4. Secure air portal.
5. Secure all hose gear in compartments.
6. Close all exterior doors.
7. Don life jackets.
8. Unlock hydraulic valves.

Note: Hydraulic accumulator should be pumped to maximum pressure prior to all flips. (Pump running.)

C. To Flip Horizontal to Vertical

1. Complete pre-flip checkoff (Horizontal to Vertical).
2. Check all blow and vent valves for proper operation.
3. Blow Tanks 9B, 8, 7T and 6 with low pressure blower. (Tanks must be empty.)
4. Flood Tank 7B until full, then secure vent and flood valve.
5. Flood Tank 1T for 15 minutes.
6. Flood Tank 3T for 10 minutes (2-6 can be done simultaneously).
7. Disconnect low and make before deck check off. Secure all hatches and gates and lower mast (Shut gate on expended metal decks).
8. Open flood valve on Tank 6.
9. Open air bank risers.
10. Open vents to Tanks 1T, 3T and 3B.
11. Let Tank 6 pressurize to 18 pounds, then close flood valve (adjust for scientific load).

15

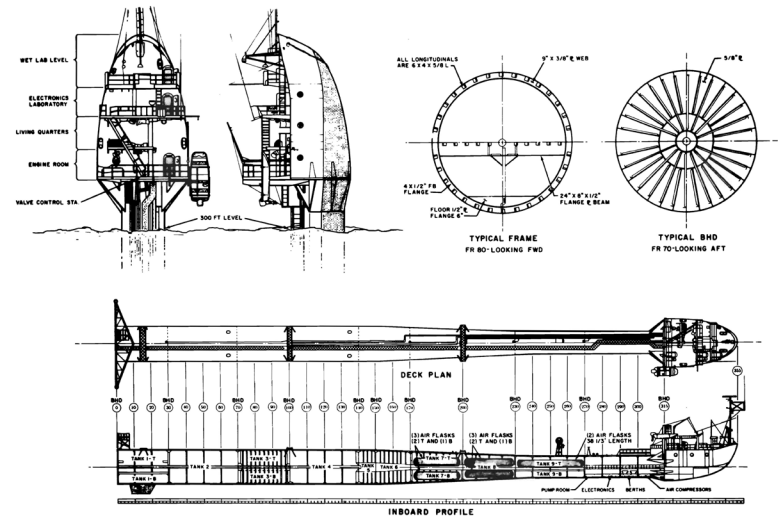


fig 13 FLIP operation

BOUYANCY

Diagrams of mechanics and operations - FLIP

Reality of multiple conditions (necessary plumbing) - detailed manuals and instructions plaster walls.



OFFSHORE HABITAT

Distinguishing between the anchored and untethered - what is essential for survival

BOUYANCY///STABILITY
FOOD///PRESERVATION
WATER///PURIFICATION
SHELTER///PROTECTION
INFRASTRUCTURE///HEALTHCARE/EDUCATION

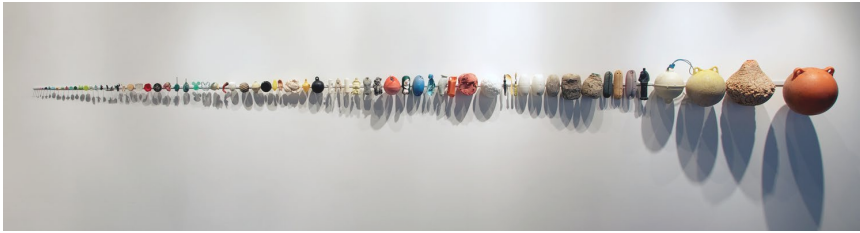


fig 14 Economies of Scale_Pam Longobardi



fig 15 Souvenir Packs_Fran Crowe



fig 16 Andrew Hughes

PLASTIC OCEAN

Art as activism - raising awareness of human waste and consumption.

Crew_

- + *The Scientist* - R+D
- + *The Captain* - Remediation
- + *The Mechanic* - Daily operation
- + *The Eco-tourist* - Spectacle
- + *The Pilot* - Supplies
- + *The Albatross* - Narrate



THE CAPTAIN

Device

::compass

Personality

::introvert:communicates only when necessary

Duty

::oversee operation of pods

Documentation

::physical:captain's logs

Water-line

::above+below:privileged access

Spacial Implications

::panopticon views:mobility necessary:override command

gender: male // age: 55 // marital status: single

He spent most nights on a barstool amid clinks of ice on glass and the slur of tourists in fuchsia polos and flip flops. The coconut suntan lotion that smells like empty days and margaritas on the beach. Everything is described in shades of blue here. He just happened to be drinking an Aqua Tonic.



THE PILOT

Device

::windshield

Personality

::situational introvert

Duty

::resource liaison:transport+communication with land

Documentation

::physical:itinerary report:cargo inventory

Water-line

::above

Spacial Implications

::temporary stay:landing pad

gender: female // age: 43 // marital status: divorced

She secretly takes pride in the fact that everything she owns can fit into one military-issued duffel bag - army green with canvas straps and a roll-top buckle. Her life spans and infinite series of checklists. Roger. Copy. (Returning to the checklist) Thrust translation, four jets. Balance couple, On. TCA throttle, Minimum. Throttle, Auto CDR. Prop(ellant) button, Reset. Prop button. (Pause) Okay. Abort/Abort Stage, Reset. (Pause) Att(itude) Control, three of them to Mode Control. (Reviewing the present situation) Okay, Mode Control is set. AGS is reading 400 plus 1. Standing by for (slight pause?) arming. (Pause).





THE SCIENTISTS

Device

::microscope

Personality

::introvert

Duty

::research:collect samples:analyze data

Documentation

::physical:research publications:samples

Water-line

::primarily below

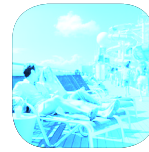
Spacial Implications

::mobility necessary:storage space:conditioned environment

gender: male // age: 32 // marital status: married

gender: female // age: 30 // marital status: married

He tends to talk loud. She keeps him organized. They both knew that the only way to alleviate the problem would be to prove the immediate impact on mankind. Shelves glisten with the bright red, electric orange, calming blues of data samples. This melancholy confetti of pollution.



THE ECO-TOURISTS

Device

::smart phone

Personality

::extrovert

Duty

::recreation

Documentation

::non physical:social media:instagram pictures

Water-line

::above

Spacial Implications

::luxurious:high density:shared spaces

gender: male // age: 45 // marital status: married

gender: female // age: 44 // marital status: married

gender: male // age: 14 // marital status: single

gender: female // age: 11 // marital status: single

This cruise is their last chance at saving the marriage. It was too easy to get caught up in the everyday problems back on land. Here they only worried about re-applying sunscreen and staying hydrated.





THE MECHANIC

Device

::porthole

Personality

::extrovert

Duty

::repair:maintenance

Documentation

::physical:receipt:work order forms

Water-line

::above+below

Spacial Implications

::increased mobility:convenient location

gender: male // age: 48 // marital status: single

The job payed well enough, and the accommodations suited him just fine. All he needed were the essentials and some quiet to finish his memoir. He had a deep fear of being forgotten, and without kids there was no-one to save his stories. This job is about living one worth writing down.



THE ALBATROSS

Device

::n/a

Personality

::extrovert

Duty

::narrator

Documentation

::non physical

Water-line

::above

Spacial Implications

::n/a

gender: female // age: n/a // marital status: n/a

Circle floating below: dip. dive. one stroke - back up. She loved the orange of sunset - the slow drift - speckles of light - particles of plastic - decorate her nest - with blues - with yellows - this home is not bpa free



DEBRIS DRIFT¹

Microplastic conglomerations float below the surface, a soup of tangled particles in infinite constellation.

////////

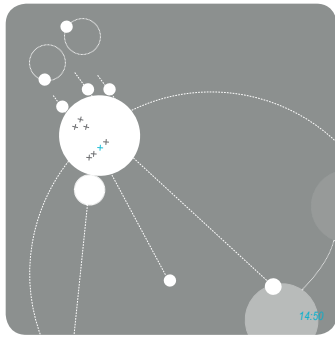
When the albatross flew out of sight,
It marked the edge
Of one of many circles.



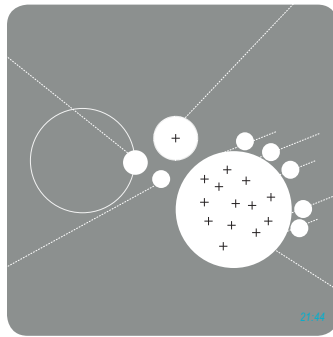
ARRIVAL^{VI}

The colony drifts with the centrifugal current - tracking the ebb and flow of marine debris and marking this edge of convenience.

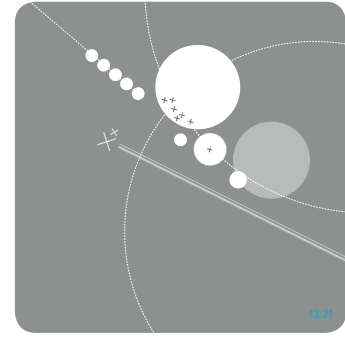
IIIIIIII
 I know noble accents
 And lucid, inescapable rhythms;
 But I know, too,
 That the albatross is involved
 In what I know.



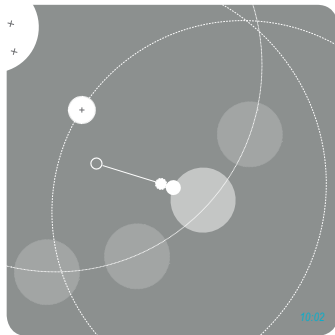
20 MAR | happy hour - \$2 drafts



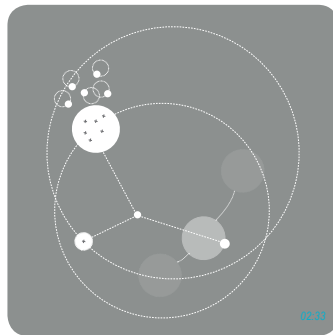
20 JUN | midsummer celebration



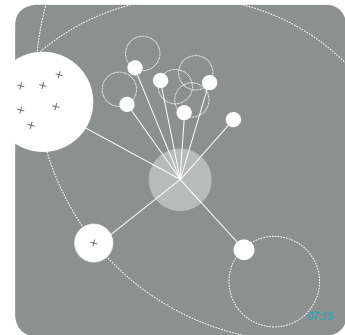
22 SEP | whale spotting



21 DEC | shower repair



15 JAN | at rest



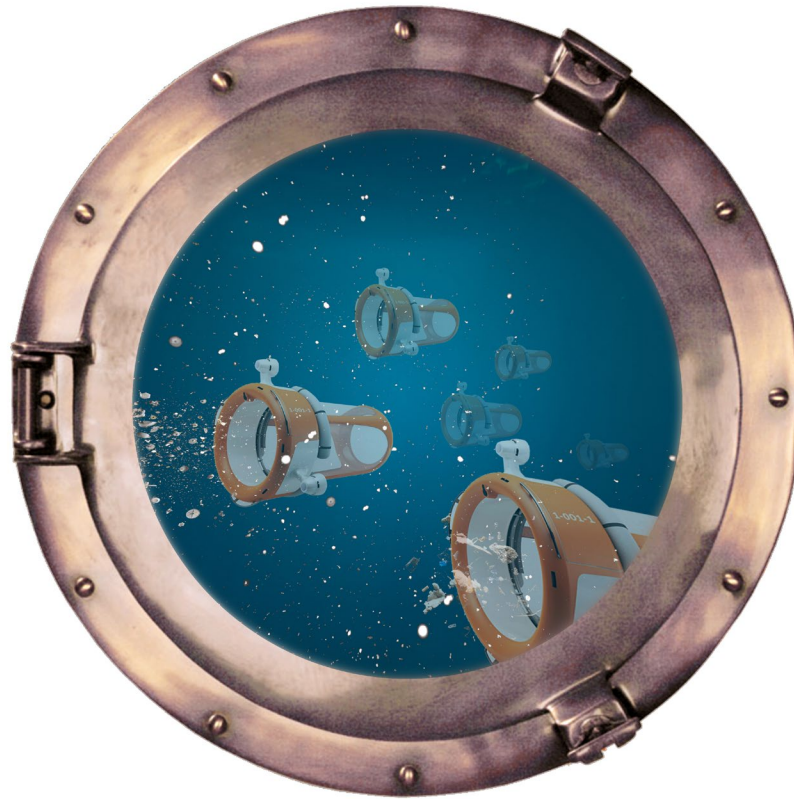
04 AUG | supply drop-off



PLATFORM

The Diver is monitored from a distance. Remnants of mundane trips to the grocery store drift in invisibilia. Nothing but calm seas ahead.

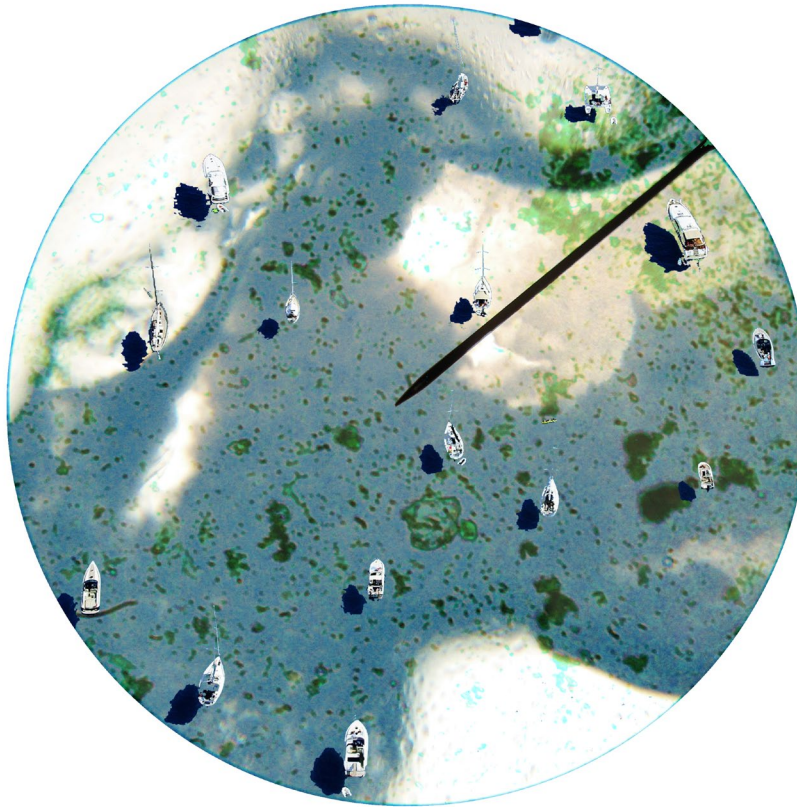




SCHOOL OF DRONES

The study of a new aquatic species - commonly known as the Marine Drone. This mechanism was born out of convenience.



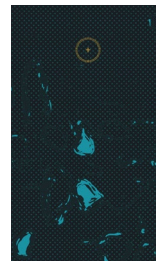
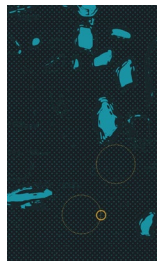
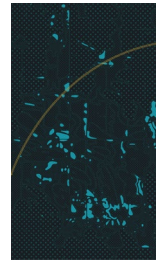
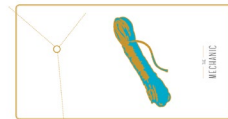
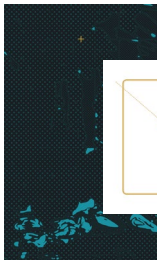
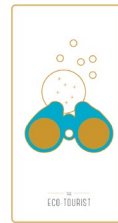
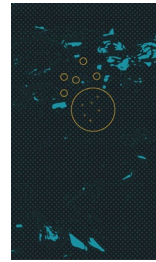


400X

A view of microplastics superimposed at an absurd scale. The bacterial ecosystem is magnified through the lens of the harbor.



*in that brackish salt-slap
specks of white
of blue
of black
scatter across soft swells
where nets tangle
a tattered lot
of pieces and plastics.*



This day begins with fair to moderate weather. At 10 a.m. there is another sighting. Recovery vessel is deployed at approximately 10:18 a.m. Debris extracted by 10:53 a.m. It appears to be a piece of green nylon netting. Samples collected on site and sent to lab for further testing.

*there is something about
the weightlessness of the
ocean. here the buoyant
body drifts in equilibrium.
where the horizon becomes
a mirror, you can finally
disassociate. the duplication
of self embodies this
otherness of voyage.*



PLASTIC ACCUMULATION^{IV}

These living bobbins are classified as spar buoys. When vertical, up to 300 feet are submerged below water - allowing the Research labs and living quarters to remain stable in harsh storm conditions. Storage capacity permits a stay of 30 days on board for temporary visitors.

III
The **albatross** whirled in the autumn winds.
It was a small part of the pantomime.