Aquafillia: colonizing the gyre

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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 01  Snow Flurry_Mandy Barker*
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 02 North Pacific surface currents

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

fig 05 National Geographic
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.

**MICRO - SYSTEM**

*Marine debris entangles to form artificial islands*

01 Sea combers
02 Microplastics/layers of transparency
03 Below the surface
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.

**TRAVEL + DESTINATION**

Plastics’ staycation in the Away

Utilizing localized materials in fabrication.

*fig 07 Indra’s cloud_ Anne Percoco*
S U B M E R S I V E  S A M P L I N G

Nautical devices used to collect marine data

fig 08  Bongo nets
fig 09  Cousteau Crew with submersible
fig 10  Jacques Cousteau lowering Calypso
fig 11  Deploying collection trawl
fig 12 Floating Instrument Platform
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.
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///PRESEVATION
WATER///PURIFICATION
SHELTER///PROTECTION
INFRASTRUCTURE///HEALTHCARE/EDUCATION
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
CHARACTER BRIEFS

- The Captain
- The Pilot
- The Scientist
- The Eco-Tourist
- The Mechanic
- The Albatross
**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) Okey. Abort/Abort Stage, Reset. (Pause) Att(itude) Control, three of them to Mode Control. (Reviewing the present situation) Okey, Mode Control is set. AGS is reading 400 plus 1. Standing by for (slight pause) arming. (Pause).
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

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: 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.

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

**The Albatross**

Device
: n/a  
Personality
: extrovert  
Duty
: narrator  
Documentation
: non physical  
Water-line
: above  
Spacial Implications
: n/a

**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.

**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 drift

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

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

I know noble accents
And lucid, inescapable rhythms;
But I know, too,
That the albatross is involved
In what I know.
The Diver is monitored from a distance. Remnants of mundane trips to the grocery store drift in invisabilia. 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.
A view of microplastics superimposed at an absurd scale. The bacterial ecosystem is magnified through the lens of the harbor.
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.

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.
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.