

A vertical photograph of a sunset over the ocean. The sky is a gradient of warm colors from light orange to deep red. The water is dark with a prominent wave in the foreground, its surface reflecting the golden light of the setting sun. The overall mood is serene and contemplative.

The

Plume

Guy Lane

The Plume

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Here's Trouble

For a very long time, there has been an assumption that the maximum amount of biomass on Earth is largely fixed and that all humans can do is to reduce it through bad behaviour.

The truth is, however, that with the considered application of science, technology, and good intent, Earth's biomass can greatly increase.

For example, vast stretches of the ocean are largely devoid of life because one or two key elements are unavailable. If these elements are supplied, then the ocean can be made to bloom.

And so it is 1,000 miles East of Singapore in the Indian Ocean. Here, the largest floating structure ever built, the 'Upwell Pump' demonstrates that a biologically inert patch of ocean can be bought into life.

The Upwell Pump brings cool, nutrient-rich water from the depths up to the surface, and into the sunlight. The nutrients kick-start a cascade of marine life and creates one of the most awesome things ever invented by humanity: *the Plume*.

The Plume is a patch of ocean, heaving with new life, in particular tiny plants called phytoplankton, or '*Plito*' as they are known out here. The *Plito* are the food of tiny animals called zooplankton, or the '*Zoop*'. The *Plito* and *Zoop* are the lowest links in the food-chain, and they feed everything from the smallest fish to the biggest whale, of which there are many around the Plume.

In its normal condition, out here in in the middle of the ocean, the surface waters are '*oligo*' which means that they are depleted of nutrient, so there is very little *Plito* and almost no *Zoop*. Barely anything lives in the clear, sun-drenched *oligo*. However, all that changes when the Upwell Pump brings the nutrient-rich Deep Ocean Water (the DOW) to the surface.

Above the Plume, fat, contented seabirds fly around, looking for their next meal. Minke and Blue whales Hoover-up the *Zoop* like it were a seafood buffet.

Surrounding the Upwell Pump is an aquaculture facility that produces hundreds of tons of marine produce every day, keeping two hundred people busy maintaining, harvesting and processing.

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While the Upwell Pump works flawlessly, one man is not happy with it. Not happy at all. He doesn't like what it's made of. It's made of plastic, concrete and steel.

"We're not making another Upwell Pump until we can make it out of seaweed," he says when people ask him about building a second Upwelling Pump. When he says seaweed, what he means is *macro-algae bio-polymers*. That's a fancy name for new materials made from marine plants.

Right now, that man is hard at work on one of the twenty pontoons that circle the Upwell Pump. This pontoon serves as an industrial facility that is tasked with converting macro-algae into high-strength, structural materials.

On the pontoon are sheds, their walls draped with strips of processed seaweed with weights attached to them, stress-testing the newly created materials.

Inside one of the sheds is a steel vat used for heating large volumes of macro-algae, tons at a time.

Inside the vat, Tom Cove is up to his waist in kelp: just the way he likes it.

Tom is shirtless as always, wearing just cargo shorts. In the vat, he pokes the kelp with a metal pole, checking the consistency.

Tom Cove designed the Upwell Pump, and so he invented the Plume. He's a bit famous, and he goes by many names. Some call him *Gigaton Tom* or sometimes just *Gigatom*. The reasons for this will become clear, later.

Tom has a PhD in marine botany. Simply put, if it lives in the sea and it '*physes*' (photosynthesises) there's a good chance that Tom knows all about it.

He's in his early forties but is as fit as a thirty-year old. He's lean and wiry, but strong. He wears a shock of wavy, fawn-coloured hair that gets cut infrequently. His skin is tanned and has a healthy sheen from all the fish that he eats. His tan comes from his aversion to spending more than an few hours at a time indoors.

"Mankind did not evolve under a roof," Tom sometimes says, generally a few moments before reciting one of his poems, *Plume Poetry*, as it's known. This and his other *bon mots* characterise him as a person who struggles against convention. Tom is a poet, a dreamer, a lover not a fighter, and his anti-authority bent drew him to *Sea-Steading*:

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settling communities on the open sea. But of course Tom doesn't call it Sea-Steading, that's someone else's name. He lives around the Plume; he is a '*Plumer*'. He doesn't go Sea-Steading. He goes *Pluming*.

The Upwell Pump and its surrounding infrastructure is home to two hundred like-minded folk, and *Billion Ton Tom* is their leader. He is less a boss, or prime minister, and more a figurehead, an authority figure. He started it off, he knows more than anyone else. But, while Tom is the main man, he tries not to issue orders, instead relying on a sort of *groupthink* and self-directed action. He's a loner with a following, and he just wants everyone to get on with his or her job so that he can get on with his.

For newcomers to the Plume - *New-Plumers* - it is all a bit odd; but they soon see the opportunity to be independent, freethinking adults, working towards a common goal.

Plumers are largely unencumbered by rules and hierarchical structures, so they are free-spirited and frequently known to fool around. Take the practice of '*Splashing*' for example. This involves jumping into the sea with no forewarning, and immediately climbing out again. Four Plumers might be standing

around having a conversation (about the optimal number of cuts to fillet a Spanish mackerel, for example) when one of them might *Splash* - dive into the sea and then quickly return to the surface - and re-join the conversation without having really missed any salient part of it. The pontoons that surround the Upwell Pump are only ten metres wide, so at any time, a Plumer is no more than five metres from the sea surface and that distance can be covered in mere seconds, when the time comes. Splashing is a common practice, and it is broadly encouraged.

Have you Splashed today? and *You should go and have a quick Splash*, are common things to hear when you on the Plume.

Being on the Plume is called being *Plumeside*, by the way. If someone seems uptight, *Plumeside*, the common remedy is, *Dude, just Splash it out*. And, *a splash a day keeps the blues away*, so it is said, *Plumeside*.

Splashing would be a huge inconvenience for ‘*Terrestrials*’, those odd humans who choose to live on land, because *Terrestrials* are usually dressed in materials called clothing.

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Not so, Plumeside. Out here ‘*in the middle of the ocean*’ the Plumers get around semi-naked. They are located on the Equator, after-all, and it is humid. The males get about topless, and few of the girls wear anything other than two-piece swimsuits.

One such bikini-clad woman is watching Tom Cove poke around in the vat of kelp blades. She is aged twenty-five, a trained project manager called Dorothy. When she’s Plumeside she sticks close to Tom at all times. She’s like his shadow, his personal assistant, his confidante, his happy helper. And she’s got a bit of a crush on him. Well, more than a bit. A big crush, actually, but she has yet to declare that in any meaningful way. She’s too shy to show her hand. So, instead, she just quietly lusts after him, hoping that one-day he might notice.

Dorothy calls his name from the top of the vat. They are always clowning around and she uses a variety of voices to address him. “*Tomeeee!*” she draws out the words. “Oh, *Tomeeee!*”

Tom stops prodding the kelp and looks up. He chuckles because he always finds Dorothy’s funny voices amusing.

“Do you want the good news or the bad news?” she asks, resting her chin on her hands, and wistfully observing water droplets trickling down his taught belly.

“I don’t want any news, Dorothy. I just want this damned seaweed to soften up. How long does it take, forever?”

A young Plumer called Billy moves to the top of a stepladder and tips a bucketful of fresh kelp blades into the vat. It enters with a wet ‘*sloop*’ noise. The sound of seaweed falling into seaweed is almost an anthem, Plumeside.

“Hey, what was the name of that new solvent you were telling me about?” Tom asks Dorothy.

“Catalina.”

“What?”

“Catalina!”

That does the trick. Tom looks at her with the appropriate amount of alarm. “Oh shit! Really? Where?”

Dorothy points to the roof.

“The Catalina is here?” Tom asks, perturbed. He climbs the ladder out of the kelp vat and moves to the door of the shed. He shields his eyes as he looks up into the bright sky.

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There are low clouds, fat, healthy cumulus that keep the ocean shaded and cool. This weather system is unique to the Plume, indeed it is created by the Plume, as a result of the DMS gas that is released by the *Plito*. In the air, the DMS gas releases sulphur, and the sulphur collects water vapour to form the droplets that make up the clouds.

Against the white clouds, the seaplane is hard to detect. So, Tom has to squint for the Catalina to become visible. “Oh, bleach my seaweed,” he mutters.

The Catalina flying boat is a long-range propellor aircraft with two engines mounted on the wing above the fuselage. The plane has a V-shaped hull and a pontoon under each wing that allows it to take off and land on the ocean. It is powered by ‘*kelpetrol*’ (yep, that’s petrol made of kelp) running through the original radial engines.

The plane circles the Plume and touches-down on the sea surface, a spray of white foam rolling under its fuselage.

“Oh, I’m so screwed,” Tom mumbles.

“*There’s a sea-plane coming in,*” sings Billy, the guy who’s cutting the blades off the kelp. “*If you listen you can hear, with a cargo of joy from the land.*” Billy is always adapting Terrestrial

songs by giving them Plume themes. He starts chuckling, cruelly.

“*Cargo of joy* doesn’t really describe it,” Tom says. “You guys laugh it up. I am going to get my ass kicked.”

Then he has a quick Splash. He dives into the sea, turns, swims powerfully to the surface, hauls himself up onto the pontoon, runs his hands over his hair to remove the excess water, and wipes his palm down his face. It’s all over in a few seconds, and he stands there, dripping.

The Catalina seaplane taxis closer to the pontoon, the sounds of the engines now dominating the air.

“Looks like CEO-UTC is paying a visit,” says Dorothy, glumly.

She’s speaking shorthand for the Chief Executive Officer of Upwell Technologies Corporation. UTC is the multi-million-dollar company that owns the Upwell infrastructure and the product harvested from the Plume. The CEO is Tom’s boss.

“The CEO’s not due till tomorrow,” Dorothy tells Tom. “So, they must have cancelled the board meeting.”

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“Yeah,” Tom looks at the concrete deck, ruefully, chewing his lip. “They must have *really* hated my Quarterly Report.”

The Catalina comes alongside the pontoon making its presence known by the droning sound of its engines and the surge of white water from its hull. The air is infused with the aroma of popcorn, the smell of burnt kelpetrol. Billy retrieves a rope thrown by the Co-pilot, and lashes the plane alongside the pontoon.

Tom approaches as the side-door lowers, revealing a very noticeable woman. She’s slightly built and dressed like a Corporate Terrestrial. She has black, shoulder-length hair. Even though she is 1,000 kilometres out in the middle-of-the-ocean she heels: most un-Plumeside-like attire. She has olive skin, high cheekbones and a small mouth with lips painted pale pink.

This is Sascha, the CEO. Her eyes are the colour of fresh kelp, shiny and alive. She fixes them on Tom, and glares at him, shaking her head. Tom moves forward, offering his hand to steady her as she moves down the steps, off the plane.

“You smell like you have been rolling in seaweed,” she says, by way of hello. “So what’s new? *Hub?*”

“*Abhh*. And how was your flight, Sascha?” Tom moves towards her, but she holds him at bay, allowing him just to place a small kiss on her cheek.

She doesn’t respond. Instead, she observes him standing there, looking ridiculous in his drenched shorts.

“Well, I think you make a beautiful couple,” Dorothy says. She raises her hands as though framing the two of them in a camera viewfinder: Tom standing there half-naked, wet, and Sascha dressed like she’d just come out of a photo-shoot for an investment bank.

“How did the board meeting go?” Tom asks, clenching his teeth, knowing that it didn’t.

Sascha doesn’t answer the question; she’ll save that torment for later. “I need a shower.” She moves towards the crew quarters.

“Welcome home, Wifey,” Tom calls out.

“This is not my home and I’m not your wife,” she retorts, over her shoulder.

“Not yet,” Tom says, watching, lustfully as she walks along the concrete pontoon, in the middle of the ocean.

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He glances over to Dorothy and sees her grim glare.

“What?” Tom asks.

No More Polyethelyne

Tom is seated with his immediate crew in the mess hall. Dorothy is there, so is Billy, and a tall, scary-looking man with a beard, called Dan. This is the management team who run the Plume and develop the materials for the next Upwell Pump and associated infrastructure.

Sascha enters the mess hall wearing appropriate Plumeside attire: a decorative bikini. She's lost her uptight, corporate demeanour and instead adopts the casual nature of a Plumer, Plumeside. Sascha's appearance causes them all to smile, as her presence and her sparring with Tom is always good entertainment. Tom pats the seat and she slides along the bench and parks herself next to him.

"*Abbb*. That's more like it," he places his hand on her knee under the table. "Now you are out of those damned corporate clothes, you can relax."

"Yes. I can relax."

"Would you like a drink," asks Dorothy, grinning. It's an old joke, but it never runs dry.

"Sure, Dorothy, that's lovely. Thank you."

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“What would you like to drink?”

“Anything without kelp in it,” Sascha plays along.

“Well, that limits it a bit,” Tom grins.

“Would you like some saltless water?”

“Does it have kelp in it?”

“Not yet.”

“I’ll tell you what,” Sascha says, “I’ll have a little glass of kelp wine and a glass of saltless water without kelp in it.”

“Very wise,” Tom agrees. “So Sascha, to what do we owe the pleasure of a visit from CEO-UTC?”

“Oh, you know, Tom. The boardroom antics of multi-million-dollar company.”

“And how is the board today?” Tom grins, glancing around at his crew to see them all crack smiles.

“The board send their regards. And you’ll be pleased to know that they want to significantly expand operations.”

“Well that’s good. I want to want to expand, too.”

Dorothy places wine and water on the table.

Sascha takes a sniff of the Kelp Wine. “Very fruity. Thank you. Yes, the board wants to expand rapidly.”

“I want to expand rapidly, too,” Tom concurs.

“In fact, the board wants to commission another ten Upwell Pumps.”

“I want another ten Upwell Pumps.” Tom grins provocatively, “You see, the board and I are in total agreement.”

Sascha chuckles, “Now you are being obtuse. The Korean shipyard is impatient and we have to give them the okay to proceed very soon. A delay will force us to renegotiate the contract, and no one wants to go through that nightmare again.”

“No more Korean shipyards!” Tom says, firmly, his intonation changing. “No more polyethylene. No more concrete or steel. We have to get the materials right. We need to ‘grow’ the Upwell Pumps, not extrude them out of petroleum-based plastics. Then we can scale-up exponentially.”

“Okay. We are here still,” Sascha sighs. “And how you going with that pursuit?”

“I’ll let out senior biotechnologist, Dan, brief you.”

Dan is a *‘Hot-Plumer’*; he doesn’t want to go back to land, ever. He envies Tom’s position and he wants to grow a second Upwell Pump

so that he can run it, himself. “I think that we are half-way, Sascha,” he says.

“Half-way!” protests Tom. “We were half-way six months ago and we’ve made significant progress since then.”

“We are more than half-way,” concedes Dan.

“But still ‘about’ half-way,” Sascha says.

“It’s a big job, Sascha,” Tom interjects. “We are trying to engineer a new class of materials made from natural resources, grown at ambient temperature and pressure without the need for toxic chemicals or fossil energy. These materials must meet engineering specifications. It’s not a--”

“You know that I know that, Tom,” Sascha interrupts. She places her palm on his hand. “I bought into that vision years ago. That’s how we got here, right?”

Dan continues, “We’re confident that we have found the right species of macro-algae. We’ve got new processing procedures, non-toxic solvents extracted from *plito* that we can cultivate on-site. We’ve got good computer models and results consistent with the models. We are getting close, Sascha. Closer every day. But we are not there yet. Our last batch of macro-algae biopolymer

got us 40% tensile equivalence to TPU plastic. That's ground-breaking and awesome, but not enough."

Tom takes over, straight away, "So, we maintain course and speed, and make the second Upwell Pump out of macro-algae, as soon as we can, as per the original plan."

"So there is no fundamental shift in your position, overall," Sascha clarifies.

"My position has been the same since the day you and I embarked on this venture," Tom says.

"And I admire your persistence, beautiful man. Bull-headed as it is," she raises Tom's hand and kisses a knuckle.

"Bull-shark headed," corrects Dorothy.

"Point taken, thank you, Dorothy. And to answer the early question, the reason I am here is to deliver a message. The board wants to hear this story from Tom Cove, personally."

"Me, personally?" asks Tom, surprised.

"Yes. In your out-loud voice."

"So, the board is visiting Plumeside?" he cracks a grin. It's an old joke, but a good one. With the exception of Sascha none of the board has visit the plume more than once.

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Except for the Chairman who never visited, ever.

Sascha laughs again. “Unlikely. They are Terrestrials through and through. Instead, you are on the Catalina to Singapore tomorrow morning, and the following day, you get to brief the board. Fly out the day after.”

“But I am a Plumer. I’m allergic to land,” Tom laughs and his crew laugh too.

Dorothy counts on her fingers, “That’s two half-days, a full day and two nights away from the Plume. Oh, dear. That’s about forty-eight hours.”

“And who will look after the plume when I’m away?” Tom asks.

“It will,” Sascha tells him. “You tell me that the Plume runs itself.”

“*Touché*,” Dan quips.

“You do say that a lot, actually,” says Dorothy. She looks down at her hands, forlornly. She doesn’t like the idea of Tom being alone with Sascha. “I reckon Tom should recite a poem,” she says.

“Yeah.” Dan agrees. “Do the one about the asshole who won’t shut up.”

“I don’t think I’ve heard that one,” Sascha says. “What’s the story?”

Tom tells her, “I was on a trawler out of north-western Australia and there was this Tasmanian guy. Every-time I told a story, he’d one-up me. I say I caught a fish, he’d say he’d caught a bigger one. Tom moves his hands to create the space for his poem.

“- I said I’d seen seas that would make a landlubber weep, you’d see them hanging over the side.”

“What does that mean?” asks Sascha.

Dan explains, “That means there’s a terrestrial aboard getting seasick.”

“- I said I’d seen sunrises sweet, they were like landscapes painted in the sky;

- I said I’d seen dolphins ride the bow and leap, turn tricks that top athlete’s only try;

-You said you’d seen seas bigger, landlubbers sicker, sunrises sweeter and dolphins quicker, with agility you couldn’t describe.

- Said I in my voice to excite and expose my experience of the sea;

- Said you in a boast to proclaim and exceed, and to make a fool out of me.

Sascha starts crying. It always happens when Tom recites Plume Poetry. Dorothy moves over and gives her a hug.

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Dan observes the display of emotion with scorn. He says, “Cod. Make sure you don’t tell her the poem about the Grind. She’ll cry for days.”

Inside the Catalina

The next morning, in the Catalina flying to Singapore, Tom and Sascha sit side-by-side looking out of the plexiglass bubble window at the ocean below.

It is noisy inside the plane, and a strong vibration from the radial engines quivers through the fuselage. As the plane doesn't fly high, it is subject to the weather and it buffets as it passes through turbulent air.

For Tom, the sensation is a sensory overload that he uses as white noise to free his thoughts. For Sascha, the experience is less comforting. It was her idea to use the Catalina for marketing the business, but she'd not considered what it was like to fly in it.

Tom glances at her, sees that she is uncomfortable. "You okay?" He has to raise his voice so she can hear.

"Just soaking up the experience. You?"

Tom glances through the plexiglass dome at the blue ocean stretching out the hazy horizon.

"When I am out there, I feel the energy moving through me. It's like I am in exactly the right place, doing exactly the right thing."

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“And when you are not?”

Tom hedges to answer. Instead, a thought comes to him. He points through the plexiglass window at the vast expanse of ocean and says, “I can see the day when the ocean is bought alive with tens of thousands of grown Upwell Pumps, when civilization is partnered with natural systems and concerns about sustainability and climate change are no more. Can you see that?”

Sascha looks through the window at the empty sea, and replies, “I am still having trouble visualizing more than one.”

They are interrupted with the pilot announcing that their descent procedure commences soon. They don't get back into the conversation until later, by which time they are seated at a Singapore restaurant drinking wine, overlooking a canal. Tall buildings stretch overhead and, as twilight descends, artificial lights flicker into life. Tom looks as discomforted in this restaurant as Sascha did in the Catalina. He wants to tell his oft repeated story that Singaporeans never see the Milky Way because at night, the tiny nation is permanently bathed in twilight from the Skyglow.

“Where were we?” Sascha asks, interrupting Tom’s thoughts. “Oh, yes. Out there, you feel alive. How does it feel to be here?”

“I am thinking what the hell am I doing here?”

“Well for one thing, you’re spending some quality time with your future-wife.”

“Of course. I didn’t mean it that way.”

Tom moves his hand across to the table to take hers in his palm.

She responds positively, but says firmly, “I really think that you need to break through this, because it is starting to cause friction.” She strokes his hand gently as she speaks.

“Break through what?”

“Your contempt for the board.”

“I don’t have contempt for the board,”

Tom grins as he says this, and Sascha picks it up.

“Tom, we all know that you invented the Upwell Pump. You designed it. You had all the answers. And you enrolled everyone. But honestly answer this question.”

“Okay.”

“How big would the Plume be if you didn’t have highly experienced people in marketing, finance, risk management, and

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international and maritime law all looking out for the project. Do you think that you would have five-megatons of Deep Ocean Water a day for your Plume? Do you think it would even be possible to go from one pump to 11 practically overnight?”

Tom looks away, feeling hemmed in. It's the compromise between the aspiration for a world that could exist and the mean-spirited reality that crushes everything on the way through. When he looks back, Sascha has her eyes locked on his.

He concedes, “It would be a small pump. And there'd be little chance of scaling up by a factor.”

“That's what I think. I have a request.”

Tom nods, forlornly.

“When you address the board, tomorrow, honour them. Give them the very best reason to take your point of view. And then calmly abide by the collective decision.”

“It's that simple, *bub?*”

“It is. And if they want to proceed with the ten plastic pumps, then the pressure is off you to find a suitable replacement in short order.”

Tom sips his wine and contemplates, “I do have a bit of trouble with that.”

“A bit? It’s like Tom versus the world.”

“But that’s how we got here, you see. It’s because of that bloody-mindedness.”

“Understood, Tom. That’s how we got here from nothing. And now that we have something, we need to nurture it. On its own terms.”

Tom mulls it over. Sascha gets frustrated and amused at the same time. “This is like trying to feed damp spaghetti into a drinking straw. Do you remember your presentation to the investment bank that I set-up. And you turn up without the presentation?”

“I went off fine.”

“Yeah,” Sascha says, “Because I had a copy of the presentation.”

“Which I sent you the night before.”

“Only because I asked you to. Three times.”

“So what’s the point?”

“The point is that you and I can’t do this on our own anymore. We need a bigger team.”

Tom leans forward, and presses Sascha’s hand to his mouth. “I really got lucky when you fell for me.”

“*Pah*. I wouldn’t say I fell for you.”

“Oh, but you did.”

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Sascha shrugs, “A man with a vision who speaks multi-syllable words. What’s not to like?”

“It’s funny that you should have fallen for a marine botanist when you’re allergic to kelp.”

“I’m not allergic to kelp, I just don’t like the smell of it.”

“It’s the perfume of the sea,” Tom says, rolling his words to make them sound enchanting.

“Really?” chuckles Sascha. “Is this your new product? What do you call it? *Kelp Cologne?*”

“Granted, it’s fruity.”

“And sulphurous.”

“It tells you that you’re on the right planet.” Tom sits upright. “Okay, this is what we’ll do. I’ll schedule more regular visits to the 29% of planet’s surface covered in land, but not in the city. No more Singapore. Let’s go to a forest or a resort or something. I just...” Tom waves his hands towards the ever-present skyglow, with anxiety.

“I know. I know,” Sascha settles him.

“And in return, when you visit Plumeside, you’ll stay for a few days.

“A few days in Water World with Mr Kelp?”

Tom laughs. “It’s more than that. It’s...”

Sascha silences him by putting her finger on his lips. “I know what it is. We built it. And we are going to build more.”

“Yeah.” Tom sits back, and crosses his arms. “Out of plastic.”

‘Beautiful Night’ in Singapore

Later, Tom and Sascha walk along the Singapore foreshore parkland. Tom’s eyes flick from place to place, taking in the unfamiliar environment. A distant oil refinery shines a thin strip of lights on the horizon. Orange streetlamps play on the water surface reflecting their light into the skyglow. The breeze is tinged with the aroma of vehicle exhaust. A white seabird flutters down and pecks at a plastic chip packet, discarded on the beach.

“It’s a such beautiful night,” sighs Sascha.

Tom is dumbstruck, not knowing how to respond. He remains silent, hoping that the thought will pass. But it doesn’t.

“Don’t you think?” she asks, tugging on his arm.

Tom is conflicted, unsure whether to speak the truth or risk offending. The problem is that Tom’s referential frame for a ‘beautiful night’ are the nights, Plumeside.

Plumeside, the night is deep, dark, and oceanic. On the cloudless nights, the stars beat so brightly that the *plito* can still *physe*. Out here the constellations can be seen in fine detail, like a diorama of glowing dust, a

multi-coloured veil that twists and folds in three-dimensions.

The ocean sky fizzles and hisses as meteorites illuminate bright paths, striking the mesosphere and ablating in balls of fire. Satellites drift across the sky, reflecting dots of sunlight like the spots of a laser beams.

Plumeside, the night sky gives a sense of purpose. While the individual observer may be a tiny speck in a vast, purposeless Universe, out here there is a purpose called the Plume.

Fulfilling that purpose provides a strong sense of '*lagom*', the feeling of a life lived fully, without being over-full. Content without anything having been wasted. Being Plumeside at night is being in right place and for the right reason.

Singapore, for Tom, is the opposite experience. A conurbation so over-lit that even the brightest stars can never be seen.

Plumeside, there are stars in the ocean, too. They reflect on the surface on the nights so calm that the sea becomes a mirror. During '*Glass-Out*' the constellation and the reflection blends at the horizon, forming an uninterrupted continuum of stars, from above your head to beneath your feet.

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This extraordinary sight provides a physiological experience that the Plumers refer to as '*Star-Flying*'. It's odd at first, unnerving because the brain interprets that gravity has disappeared or that you are weightless, and yet, you are still attached by the soles of your feet to the deck. For *New-Plumers* it can be dangerous, disorienting, and some have been lost overboard and drowned.

There are other stars in the ocean, too. Speckles of light beneath the sea surface produced by myriad organisms blessed with bioluminescence. Down below, when the big fish strike, they whip the algae into a glowing speckled green haze.

And at night Plumeside, you are never alone. The pontoons are festooned with seabirds. They roost on the roofs or just stand on the deck, their head tucked under a wing as they sleep.

Tom watches the seagull shake the last piece of chip from the packet, then fly away, leaving the plastic bag on the beach.

Sascha waggles her arm, taunting Tom to answering her question. He chuckles, still not ready to lie or disappoint.

“What time is the meeting tomorrow?” he asks.

“*Abbh, well,*” says Sascha. “I think it’s a beautiful night.”

Board Meeting

The following morning, Tom enters the Upwell Technologies boardroom dressed in his distinctive Plumeside ‘corporate’ style. He wears a white cotton shirt with drawstrings across the collar and wide, puffy sleeves. Over the shirt he wears a sharkskin waistcoat. He’d killed that shark himself, skinned it, tanned it and stitched it together. His concession to normality is a pair of blue jeans strapped with a belt with a buckle in the distinctive shape of the Plume logo set into a circle. Leather deck shoes stained with salt complete the uniform. It’s not quite suit and tie, but compared to cargo pants and a bare torso, Tom looks almost overdressed.

He begins his presentation to the ten other people in the room with an animation of Arctic sea ice. The video is a composite of satellite data from the 1960s to the current day. The visualisation shows the Arctic ice expand for six months over winter, then contract over the summer. Up until about 1990, the contraction falls to a minimum in September, and then expands again. But from 1990 onwards, the minimum ice extent gets smaller and smaller every year.

“We are expecting the first Blue Ocean Event sometime in the coming years.” Tom tells the board. “That’s when all the ice melts. And when that happens, the temperature difference between the poles and tropics decreases, and then there goes the sensible weather for the northern hemisphere.” He pauses, waiting for his audience to absorb his information, and then continues. They are an intelligent bunch, and he knows that they are listening. The question is whether they are connecting.

“It is still uncertain whether civilization can survive the post Blue Ocean Event climate chaos and the heating and species extinction that we have inflicted on this planet. The key to our survival is the *Paradigm Shift*. We must rapidly transform the unsustainable global system that we have inherited into a sustainable global system. Not just energy, but materials, too. I saw the signs. I saw what comes next, and I chose to change the outcome. You are here because of that vision.”

Tom sees Sascha softly shake her head, and he corrects himself. “You are here because that vision overlaps with visions that you all

hold for the future. I want to address materials of the subsequent Upwell Pumps.”

Tom advances the slide to a video of the construction process for the first Upwell Pump. In a Korean shipyard a convoy of trucks tip their trailers into a hopper.

Addressing the video, Tom says, “Eleven hundred tonnes of polyethylene for one pump. This is LP gas used to heat it, and coal-fired electricity to drive the moulding machines.” The video shows a close-up of workers welding sheets of plastic together. A plume of smoke rises from where the plastic sheets are brought together. The process is wasteful and great slabs of plastic offcuts are cast aside.

Then the video shows the blades of the *Vertical Axis Ocean Turbine* (more on this, later) being laid up in fibreglass: three long curved blades that fit together like a helix. The Vaot, as it is known, is the device that provides the energy to draw water from the depth to the surface. Manufacturing the Vaot produces mountains of waste. There are rolls of plastic sheeting, and hundreds of empty solvent cans.

“They don’t get recycled, those cans, by the way,” Tom says, ruefully. “They get sent

to landfill. Imagine that. They are still there, now.”

The video shows the workers stripping sheets of plastic off the blades. “Likewise. This all that plastic trash goes to landfill.”

In another sequence, the pontoons are being constructed. A row of concrete trucks, pulls up, black smoke belching from their exhaust pipes, into the air.

Tom says, “I did the sums. There’s four thousand tonnes of materials that make up the Upwell infrastructure. And an additional eight thousand tonnes of waste. Building that first Upwell pump was an act of ecocide for which I should have been jailed,” Tom glances at each of the board members, seeing them looking at him stony-faced.

“At some point, it is necessary to draw a line and say that we will no longer support the unsustainable industrial machine, but forge a new biological economy, modelled on nature. The civilizations that survive are those that partner with the natural biological processes. That is the pathway I have laid out. And that is real shareholder value. Thank you.” Tom steps away from the board table, feeling worn out from having to explain the

obvious. He sees the Chairman sit forward in his seat.

“Thank you Tom. Your passion and foresight is always something to behold. But, if I may, I would like to point out a few salient omissions from your presentation.”

Tom lowers the remote control device to the table and clasps his hands together with as much humility as he can muster. “Please do, Mr Chairman.”

“This organisation is a for-profit corporation, and to date, it has yet to turn a profit. This is not to say that it isn’t profitable, it is a highly profitable venture. The issue is that so much money is being invested into your seaweed pipe, that our kind shareholders who make all this possible are not getting paid.”

Tom shakes his head, frustrated. He bites his tongue, feeling Sascha glaring at him.

“I draw your attention to this ‘stack’ of invoices,” the Chairman adjusts his glasses. “This one, for example, from the Institute of Solar Biotech, \$330,000 for ‘stress testing’ *Costaria costata*. What is that, Tom?”

“Five-ribbed kelp.”

“Why would we spend money on that?”

“It has a very interesting protein structure that could add tensile strength.”

“And \$260,000 from the University of Queensland for design and construct of an *alginate 3D printer*. That’s a lot of money, Tom.”

“Not for an alginate 3D printer, it’s not. That’s great value.”

“And when you add up all these bills you start to see if we took another course the shareholders could get paid.”

“I fully empathise with your concerns, Mr Chairman,” Tom says with a tone so appropriate that it takes Sascha by surprise. “And I hope that you will empathise with the other forms of shareholder value being generated by this firm. We are laying the groundwork of a biologically-based financial system that exists at the intersection of the two blue economies, the Blue Economy of the ocean, and the Blue Economy of sustainability, Gunter Pauli, *et al*. Once the materials are developed - the macro-algae biopolymers - that allow us to grow the Upwell Pumps, the same material can be used on land as building materials. We could close down the cement industry.”

“Close it down?” the Chairman, stammers.

“Absolutely. Because of its historical and ongoing carbon footprint. This company, Upwell Technologies Corporation has the opportunity to pioneer a new global economic industrial base.”

“Just to be clear, Tom,” the Chairman says, curtly. “This is a business, not a vendetta. We are not in the business of closing down anyone. We are here to make money. You have spent millions of this company’s money on this mad pursuit.”

“Mad pursuit?” Tom chuckles, his appropriate tone wavering. “It’s the strategic investment that underpins this company’s business plan. A plan agreed to by the board.”

“The deadlines of that business plan are all missed. And that plan is no longer the desired plan of the shareholders,” the Chairman says.

“The shareholders?” says Tom, stunned. “What about the biosphere? What about *Vitae-planeta*? Are they included in your list of shareholders? What about the *plito* or the *zooop*?”

“Marine organisms are not beneficiaries of this organisation,” the Chairman says firmly.

“By my agency they are!” Tom stubs his thumb against his chest, over his heart, and says forcefully, “*I am the part of nature that represents the phytoplankton on this board!*”

The Chairman stands, places his hands flat on the table before him and leans forward, his bushy eyebrows raised. “Tom Cove! You don’t get to reinvent corporate law in my boardroom. You have two weeks to sign-off on the next ten Upwell Pumps or I’ll have you voted off the board. And I have the numbers to do so.”

Those words, “Voted off the board” resonate in Tom’s head. He stares at the table, stunned. He never thought it possible. He thought that he could keep pushing the envelope, always instinctively knowing when to pull back. But here he is. He glances at Sascha to gauge her reaction, and sees that she, too, is stunned by the news. While Sascha is the CEO, she is not always kept in the loop of the other Directors plans. The Chairman has blind-sided the both of them. Tom looks at the floor, deflated.

“One more thing, Tom,” the Chairman says, mopping his face with a handkerchief. “I have engaged a management consultant to review Plumeside operations.”

The Plume

“A consultant?”

“Mr Bennet. You’ll meet him at the airport.”

“And who’s this guy?”

“He’s my eyes and ears on your ocean operation. I expect your full co-operation.”

“*Uh-huh?* And will I get his?”

En Route to Airport

As the board members step away from the table, Tom glances to Sascha. She catches his eye, but then one of the other directors distracts her.

Crestfallen, Tom slinks out of the boardroom. In the hallway he feels vulnerable and claustrophobic, surrounded by walls and Terrestrials. The floor doesn't move, even though a wind blows outside. So strange. He walks to the fire stairs, wanting to get away from the air-conditioned spaces. The fire door closes behind him, and he rests there, his hands gripped on the rail, looking down the stairwell.

On the ground floor, he steps out onto the street wondering how he is going to connect with Sascha given that he doesn't carry a phone. He could walk around to the lobby of the building, but he's likely to bump into the other directors, and he's had quite his fill of Terrestrial Corporates today. So, he heads towards the hotel on foot, planning to call Sascha from the phone in the room.

Just then, Sascha rounds the corner and sees him walking away. "Tom Cove!" She moves quickly towards him, a woman on fire.

“Do not think to walk away from me until we are complete!”

“I was going back to the hotel to call you.”

“I am right here. And what were you doing exiting by the fire stairs. What were you even thinking?”

“Clearly, what I think is of little importance. I wanted to get the fuck away from those people.”

“Those people make you possible.”

“That’s not me,” Tom points in the direction of the boardroom. “Thousands of tons of polyethylene is *not* me! You have no idea what I went through when I came out of that Korean shipyard with the stench of burning plastic in my hair. I had no idea what I had set in motion. None. And now those people want me to replicate it tenfold. I cannot sign onto that, Sascha. I cannot.”

“Then they’ll vote you off the board. Didn’t you hear the ultimatum?”

“How could I not hear the f**king ultimatum? It was delivered to me.”

“Don’t swear at me!” Sascha growls.

“I’m sorry. Why didn’t you tell me about this?”

“I didn’t know.”

Tom pulls a face, and this enrages Sascha. She takes a step forward and growls, “I did not betray you! I knew nothing about the ultimatum. Nothing. I’m not privy to what goes on in the minds of the other governors.”

“And what about this f**king mole they’re sending out?”

“I know nothing about him.”

“Who is he?”

“I don’t know.”

“And what is he going to do out there?”

“*I. Do. Not. Know!*” Sascha takes a step back. She glances around, shaking her head. “Come on. Let’s get out of here. Last thing we need is to be seen quarrelling in the street.”

She waves for a taxi and the yellow car pulls alongside. Tom lets out a long sigh. As if it wasn’t bad enough sitting inside an air-conditioned room in a fossil fuel powered city, now he has to get into an air-conditioned, petrol-powered car. It’s enough to *bleach your seaweed*, as they say, Plumeside.

“Get in the damned car, Tom Cove,” Sascha grumbles, holding the door open. When he is seated, she slides alongside and advises the driver of the hotel.

The Plume

“I know that you are having a hell of a time on land, Aquaman,” Sascha grumbles.

“It’s not land. It’s just the very idea of a fossil-fuel-powered city. It makes my lungs ache.”

“Well, it’s where you need to be today.”

“My destiny is not being met here.”

“Your destiny is to make Upwell succeed and you do what you need to do.”

“Like baby-sitting a spy? Sascha, do not make me responsible for his well-being out there. I am seriously worried for the guy. There are two hundred hot-Plumers who won’t take kindly to a Terrestrial snooping around. They’re Hivemind. He’ll just disappear and no one will speak.”

“I don’t give a damn about Bennet.”

“Good. Because if that guy goes Plumeside, he’s on his way to the Abyss.”

Sascha shakes her head, angrily, “Tom, let’s agree that I didn’t hear you say that, and that you didn’t actually say it.”

“Of course I didn’t say that, so there’s no way that you could have even heard it.”

“Deal. You know, I bought into your dual-Blue Economy vision years ago. And you bought into to my commercial vision of how to put it together. Don’t do it small on your

own, I said. Tie in with the majors and do it big and fast. The intersection of those two visions has led us to this place, Tom. And if we want to proceed to the next level then we to find a resolution to this current impasse. I know that it is thousands of tonnes of virgin petroleum-plastic but it buys you time to resolve the macro-algae biopolymer that to this day has thwarted you.” Sascha removes an envelope from her purse and hands it to Tom.

“What’s this?”

“It’s the document you sign to commission the next ten pumps.”

“Plastic pumps. I don’t want it.” He offers the envelop back to Sascha.

Sacha is not impressed, and she instructs him very clearly, “Put the damned envelop in the pocket of your sharkskin waistcoat, Tom Cove.”

Return to Plume

At the airport, Tom waits at the counter to join the Catalina, still smarting from the argument in the boardroom and his subsequent gruelling by Sascha in the cab. His hand rests inside his shark-skin waistcoat, his finger flicking the edge of the envelope in the inside pocket. He gets a boarding pass and enters the plane only to find the consultant, Bennet, is already on-board, slumped in his seat. He wears a tan suit, dark sunglasses and a hat. His face is barely visible, and he has either nodded-off or is completely uninterested in the goings on in the plane.

Tom observes that his seat belt is loose, and he taps Bennet's foot, "Do you belt-up, bozo. We're about to take off."

The consultant opens an eye, raises his hand, a finger pointed like a gun. He clicks his tongue, "*Click*. Right you are, boss." Then he closes his eyes again, and appears to simply fall asleep. He remains in this position for the duration of the flight.

When the Catalina comes alongside the pontoon, Tom sees Dorothy approaching. She's wearing a yellow bikini and has her hair

braided with red seaweed. She hops to a stop as the door opens.

Tom steps onto the pontoon, and behind him, Bennet appears in the doorway of the Catalina, looking around.

“Who’s that guy?” Dorothy asks.

“A guest. Find him a room. Then bring the team to me.”

“So what’s this place, then?” Bennet asks, taking off his glasses and looking around with disdain.

“You’ll get your full tour starting in an hour. Go with Dorothy. She’ll get you to your room.”

Tom storms off towards the mess hall, leaving Dorothy and Bennet behind.

Shortly, Dorothy arrives in the mess hall with Dan and Billy.

“Hey seaman, how was Terrestrial?” Dan asks.

“Shit-house. Sit down and listen up.” Tom watches as his crew settle themselves in their seats. He says, “I got reamed by the Chairman. He says that I have two weeks to change my mind, or they commission another ten Upwell Pumps made of petroleum plastic, without me.”

“Well that’s not going to happen,” Dan says, flatly.

“I know that. So we are out of options.” Tom removes the envelope from his pocket. One corner is all mashed-up from him having anxiously picked at it through the flight.

“No f**king way,” Dan snaps. “I’m not riding around the ocean on a plastic f**king pump. Fight the bastards.”

“If I fight them they’ll bounce me off the board. It’s an ultimatum.”

“But it’s your company,” Dorothy protests.

“It’s not *my* company, Dorothy. It’s a publicly listed company with shareholders and directors bound by rules of corporate governance. I gave up controlling it years ago when I agreed to get the other Directors involved.”

“And if you’re off the board, who will speak for the *plito* and the *zoop*,” Dorothy asks, anxiously fiddling with the seaweed in her hair.

“Well that’s the point. If I fight them, and they bounce me from the board, no one speaks for them. But if we go ahead with the

next ten Upwell Pumps made of plastic, then the pressure is off.”

“That’s f**king bullshit,” Dan slaps the envelope across the table. “This is not what we agreed!”

“Dan. I agree that’s not what we agreed. But the wind has shifted. It’s where we are now. I don’t have an enlightened board. They’re just normal, corporate people who can only see short-term money. If I’m removed from the board, the vision is lost. I can’t risk that. This way, we get them off our backs and continue as planned with our research.” Tom raises the envelope from the floor.

“F**k this. I’m going to splash.” Dan slams the door behind him as he departs. He returns within the minute, dripping wet, but no less angry, and glaring at Tom.

“There’s something else,” Tom says. They have sent out a Terrestrial called Bennet. He’s a management consultant doing a review of Plumeside operations.”

“Did you invite him?” asks Dan.

“I did not.”

“Then he’s a stowaway. I’ll throw him in the brig for his own safety.”

The Plume

“First thing,” says Tom. “We take him for a tour.”

“Why?”

“And a submarine ride.”

“*Ha-ha*,” Dan laughs cruelly. “Alright, then.”

Guided Tour

“So, Bennet,” says Tom, pointing down the pontoon. “What we are going to do is walk this way and that will take us in a big circle all around the Upwell Pump. You ready?”

“Sure, whatever.”

“Did you do your site induction?” asks Dan.

“I didn’t want a site induction.”

“You weren’t asked if you wanted it, bozo,” Dan snaps. “The question is, did you do it?”

“No, I didn’t do it. And I am not going to do it,” Bennet says firmly. “So let’s get on with the tour.”

“Let it go, Dan,” Tom says. “It will play in our favour if he gets hurt.”

“When he gets hurt, more like.”

“Okay, Bennet let’s get going. This pontoon is general accommodation. There are three of these and each houses about eighty people. We operate 24 hours a day, three shifts. These guy have just got off shift.”

The Plume

“So that explains why there are so many people lazing around, drinking and playing ping-pong,” Bennet scowls.

“Yeah, they are off-shift. They take their work and leisure seriously. Come on. Next pontoon.”

They cross the bridge to the neighbouring pontoon. This is covered in sheds.

“What’s this place,” Bennet asks, taking photos with a digital camera.

“Refrigerated warehousing. Once the marine product is processed, it comes here. Over there is a dock where the freighter comes in to pick up the stock. Come on. Keep up.”

The next pontoon has a structure that brings lengths of rope covered in dark brown seaweed. The rope moves through a pulley and the seaweed falls off into a hopper where it is weighed. Once the hopper is full, it is emptied through a vent in the bottom, onto the deck. Then, a trap door opens in the deck and the seaweed falls through, into the water.

“What’s all this about,” Bennet asks, astounded.

“This is sequestration kelp. We grow it, then dump it. In this way, we pull CO₂ from the air, and send it to the Abyss.”

“Why?”

“This whole operation is carbon negative to the tune of about a hundred kilotons CO₂ per annum.”

“And what does that mean?”

“Most commercial operations produce greenhouse emissions. This operations sucks them out of the air, and keeps them out of the air,” Tom says.

Bennet wears a look of astonishment.

“And how much of this area is devoted to this project?”

Tom points to the open circle of water bounded by the pontoons. “This whole area in here, we call the Soup Bowl. The sequestration kelp takes up about a quarter of the space.”

“A quarter of the whole product, you dump over the side.”

“That’s right. After we weigh it.”

“That makes absolutely no sense at all.”

“By what frame of measure?” Dan asks.

“By a business frame.”

“Then your business frame is wrong.”

The Plume

Tom says, “It all makes good sense, Bennet. We are recovering from the atmosphere an equivalent amount of CO₂ as was emitted in the production of the infrastructure. Another year we will be carbon neutral, and after that, carbon positive, then that sequestered CO₂ can be sold on a global carbon market.”

Bennet shakes his head, astounded. “Okay, continue the tour.”

The three men progress to the subsequent pontoons where there are engineering sheds for the maintenance of equipment, and a sea food processing plant.

The last pontoon is completely bare. Just a concrete pad floating in the middle of the ocean.

Tom tells Bennet, “This pontoon is where we will assemble to macro-algae Upwelling Pump. The second pump.”

“So is this the end of the tour.”

There’s one more thing to show you topside, then we go below.”

“Below?”

“Come over here, Bennet.”

Thermo-poly Urethane

Tom moves over to the edge of the pontoon where the linkage connects it to its neighbour. This is a two metre-wide, engineered rubber device that prevents the pontoons separating too far apart, but also cushions them from touching. They are extremely strong but flexible, so in heavy weather they can stretch to absorb the huge forces of the pontoons pulling apart as the ocean swell rolls underneath them.

“These linkages were custom designed,” Tom tells Bennet. “They are made of ultraviolet-stabilized thermo poly-urethane. Unfortunately, TPU lasts forever.”

“Well, that’s a good thing,” says the consultant.

“No, that’s not a good thing. It’s completely unnatural. And it is so enduring because the chemical energy in the molecular bonds is so high. Which means it took a huge amount of energy to make it. Which is a greenhouse thing. Nature wouldn’t do that. If the plastic gets loose into the environment there is nothing out there can digest it. It will just eventually break down into smaller and smaller pieces until its small enough to get

consumed by the *zoopl*. In this way, the petroleum-based plastic with all its chemical additives will contaminate the entire marine food chain.”

“But it’s doing its job.”

“I’m not doubting its utility, Bennet. I am questioning its sustainability. So, one of the things that I have tasked our biotechnology team to do is to create biopolymers grown in the Plume that replicate TPU’s functional characteristics but are biodegradable. That way, if the thing becomes marine litter, it can be digested by nature.”

“And how are you going with that?”

“I’m working on it,” Dan growls.

Bennet steps back from the edge. “Well, as far as I am concerned, it’s a waste of company resources. You’re spending money trying to make another version of something that already works.”

“It’s not 9-Boundaries safe,” Tom says.

“What does that even mean?” Bennet screws up his face.

Dan interjects, “The Planetary Boundaries, *Squid for Brains*. They didn’t teach you that in business school?”

“*Abhh*. No. I learned business at business school.”

Tom explains, “This petroleum-based plastic contravenes three of nine Planetary Boundaries,” Tom explains “One, *novel entities*, because it’s synthetic; two, *climate change* due to the huge embedded energy to process the raw materials and the source of that energy; and to the extent that it becomes marine debris, three, *biosphere integrity*.”

Bennet shakes his head angrily. “You see, none of that actually means anything.”

“Not to you, you *Dumb Mullet*,” Dan growls.

“Dan. Put a squid in it,” Tom snaps. He stares down the tall, bearded biotechnologist until Dan takes a step back.

Calmly, Tom Cove continues to work his magic on the consultant. “So, Bennet, your business degree didn’t include any foundation units in sustainability which explains why you are unfamiliar with our *modus operandi*.”

“You could say that.”

“So, then how can you be an effective management consultant if you don’t even know what we are trying to manage?”

“Tom, I know how companies run. And spending money making plastics that fish can eat is a scandalous misallocation of resources.

The Plume

I am frankly surprised that you guys have got away with this for so long. It's like you're running your own country out here. This..."

Bennet waves his hands around to incorporate the entirety of Plumeside, "This suggests to me dereliction of duty on the part of the CEO."

"And which planet are you actually from?"

Dan asks with a snide tone.

"I'm from the corporate sector of this planet. I'm not from the poop, like you guys."

"The poop? What?" Tom laughs.

"That's what you guys talk about? The poop?"

Tom and Dan look at each other quizzically.

"It's the *Plito* and *Zoop*, you *Feckless Lumpsucker*," Dan snaps.

Tom steps in, "So, Bennet, you will concede that if we had these bio-polymers they'd be very valuable."

"It's hypothetical, Tom. All I see is money getting spent on some random whim when shareholders aren't getting paid. Get the shareholders paid, then if there's any left we can set up a proper R&D fund for your seaweed fantasy."

“*Uh-huh*. And how much profit do the shareholders get?”

“All of it.”

“So, there’s not a lot of money for R&D in your model?”

“Tom, it’s simple rule of business. If you’re making money, you don’t need R&D. You’re already there. This venture already makes millions, but you spend it all on fancy fish-food.”

“But what if there’s a way to make more money. *Hub?*”

“Sure. So, how long before you make the poop version?” Bennet waves his hand towards the TPU linkage.

“It’s a probably a year to two years away,” says Tom, rueing having to say the words.

“It’s not commercial, then.”

“Well it could be if--”

“Forget it. It’s not going to happen.”

Bennet walks away leaving Tom and Dan shaking their heads in frustration.

“That turtle-f**ker is pre-Abysal,” Dan growls, angrily.

Tom is lost for words, and just stares at the deck, shaking his head.

Dan starts growling, “You need to keep him away from me because I might end up

The Plume

throttling that lamprey with a piece of kelp rope.”

“Settle, Dan. Last thing we need is a Plumer going psycho. We need to use this, mate.” Tom taps the side of his head with a finger. Tom raises his voice. “Bennet! The tour’s not finished yet.”

Bennet halts, shakes his head and returns to Tom and Dan. “What’s more to see?”

Tom points to the submarine. “We are going to show you what it looks like underneath.”

Triton Sub

The 3-man submersible has a dome canopy, and two bright yellow pontoons. The canopy is inches thick, made of perfectly clear acrylic. Inside are three seats, one of which has the driving controls. There is a mechanical claw arm at the front and propellers housed inside venturi rings.

Seeing the submarine, Bennet halts. “You’re not proposing I go in that, are you?”

“What’s the matter, mate?” growls Dan. “You claustrophobic?”

“Just the top side, I don’t need to see underwater,” Bennet protests.”

Tom chuckles callously, seeing an angle, “How is the Chairman going to feel when he learns that his consultant failed to tour half of the facility?”

Dan steps onto the Triton and raises the canopy. He points at the front passenger seat. “Get in, Bennet.”

“But it’s just seaweed, isn’t it?”

“Bennet. Get in the damned submarine.”

Bennet takes a halting step forward.

“There’s a good boy,” Tom taunts. “It’s much more than just seaweed. There’s fish down there. And of course the snow?”

The Plume

“Snow? Well how long will be in there?”

“Maybe thirty minutes. What do you reckon, Dan?”

“Yeah between thirty minutes and three hours.”

“So come-on Bennet. Hop in the submarine, old mate.”

“I’ve just got this really serious thing about small spaces.”

“Get your hand off it Bennet,” Dan growls. “The ocean covers three quarters of the planet. How could you be claustrophobic in that?”

Tom starts laughing.

Hesitantly, Bennet steps into the Triton. Tom takes the driving seat next to him, and Dan slides into the third seat, behind. With the canopy sealed, Tom takes the controls and runs through a systems check. Satisfied that the sub is good to go, the sub is set free, and Tom drives it across the surface towards the rows of kelp. It is humid inside the canopy with the sun streaming in.

Bennet’s face is drenched with sweat and he breathes heavily, clutching the side of his chair.

“How you going there, me old mate?” Tom asks as he slowly manoeuvres the sub into the fronds of kelp.

“I’m doing okay. I’m doing okay,” Bennet chants, hyperventilating.

“Prepare submerge.” Tom activates the air vents and all around the surface of the water erupts in a stream of bubbles. As the air departs the tanks, the sub gently descends and the water covers the canopy, sending shimmering spears of white light into the cabin. Kelp surrounds the sub, and it becomes gloomy, shaded by the brown wavering blades but with bright pinpricks of light penetrate the dark seaweed. The descending, bubbling sub disturbs a densely packed shoal of fish that scatters in all directions and reforms above the canopy.

Tom releases more air and the sub descends further. The kelp thins at depth and the water becomes darker.

At twenty metres, Tom activates the headlamps and the water around the sub is flooded with light reflected off the *plito* and *zooop*. As the sub descends, it looks as though the millions of tiny specks are moving up. The water becomes clearer as the density of the *plito* and *zooop* declines. At 90 metres,

another feature becomes visible: the Skirt. This is the plastic sheet that separates the Soup Bowl from the ocean, outside.

“This skirt material is TPU like the linkages,” Tom says, lightly. He glances over at Bennet seeing that he is not enjoying the experience. His eyes dart left and right, his face contorted with anxiety.

Dan leans forward and whispers ominously in Bennet’s ear, “TPU is nasty, unsustainable, petroleum-based, plastic shit. We are on a pathway to replace it. Don’t interfere, Bennet.”

“Exactly,” Tom says. “So we are working on replacing that with a macro-algae biopolymer. Just get your mind around that concept, Bennet. Get on-board what we are trying to do here. It’s awesome.”

Dan makes a cruel chuckle, “Let’s go Snow Diving.”

“Good idea,” Tom concedes.

Beneath the sub is a flat plain of soft ooze. This is the bottom of the Soup Bowl where all the debris and detritus that falls from the upper waters collects.

Tom shares with Bennet, excitedly, “The snow is made of dead *plito* and *zoop*, and *zoop-poop*, the faeces of zooplankton. This is

carbon rich and heavier than water, so it sinks, drawing carbon from the upper reaches of the water column to the depths. This is the artificially induced *carbon pump* that helps makes the Plume carbon negative. See, we are not only producing seafood, Bennet, we are also sequestering CO2 from the atmosphere. That's a good thing my old mate."

Tom allows the sub to settle on the surface of the accumulated snow but it is so sloshy that the sub sinks into it. Tom shoots air bubbles out of the flotation chambers and sub sinks deeper and deeper until it is completely submerged in the snow. The canopy goes dark, illuminated just by the faint instrumentation lights.

Tom flicks off the instrumentation lights and the inside of the canopy goes pitch black. It is totally dark, and quiet, too. Just the sound of three breathes, two calm, one panicked.

Bennet gasps and moans. He breathes heavily and quickly, clutching the side of his seat.

Tom says, "Every month we assess the volume of snow, and then let it sink to the abyss, thereby removing that carbon from

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the climate system for thousands of years. This is what it looks like for that sequestered carbon. Pure blackness.”

Dan leans forward, and puts his face close to Bennet’s ear, “So, Bennet. You ever had one of those dreams where you are buried alive.”

“Get me to the surface, please. Please.” Bennet pleads.

Dan continues, talking with a slow drawling voice. “This is what the Abyssal Plain looks like, me old mate. Blackness; a dark, unending desert of mud. If you fuck up, Plumeside, this is it for you, until your cold flesh is stripped away, picked over by abyssal-crabs, until you are just raw bones resting in the ooze.”

“I can’t breathe,” Bennet gasps. “Take me up.”

“I just want to reiterate Dan’s statement,” Tom says, plainly. “You need to get on-board this program, Bennet. Or I can’t guarantee your safety.”

Panting heavily, sweating profusely, Bennet stammers. “Your death threat is duly noted. Can we go up now, please?”

Uneasy Days

Over the next few days, Tom tries to resume his normal duties, but is troubled by the presence of Bennet. Periodically, the consultant comes into view. He's snooping around, asking questions. At one point he marches over to Tom and points to the seabirds that punch through to surface and catch fish inside the Soup Bowl.

"So why don't you get rid of all those birds? Shoot them or scare them away," Bennet asks.

"Why would you do that?"

"Well, they're eating all the fish."

"They're hardly eating 'all' the fish," Tom chuckles. "They only take some."

"Well it's not their fish to take."

"Really?" Tom is genuinely surprised, and he belly laughs. "And whose fish are they, exactly?"

"They're the company's fish," says Bennet.

"And how do you come to that conclusion?"

"Company infrastructure is used to create the Plume. Therefore the company owns the product that grows in the Plume. The fish

that's in the bellies of those seabirds ought to be on the balance sheet of the firm.”

“We operate a different philosophy with respect to so-called ‘natural resources’. It is only when we stop viewing the environment in which we live as a ‘resource’ that we can make any real progress, Bennet. Nature is a living entity with which we must learn to co-exist and collaborate, support and care for just as we should each other.”

“You know Tom, if this were a hippy commune, I wouldn't have a problem with what you just said. But it's not, it's a publicly listed company. You can't just give away the profit to the wildlife.” Bennet storms off, saying, “I simply cannot believe this place.”

Tom watches as Bennet moves away, and he has the first inkling that the Plum project is in serious trouble. He wears a grim face as he considers Bennet engaging people with guns to shoot the seabirds. The idea so revulses him that he ponders taking up Dan on his offer to murder the consultant and send his body to the abyss.

The following day, Tom watches Dorothy setup the latest back of biopolymer for stress testing. He stands in front of a strip of TPU plastic lashed to a beam in one of the sheds.

Next to this is the latest piece of bio-polymer. At the end of each strip is an empty metal bucket. Billy and Dorothy pour water into each bucket, a litre at a time. The buckets are part full when the bio-polymer cord snaps. Dorothy steps back as the bucket clatters onto the deck.

*“Turtle-f**ker!?”* Tom snaps, frustrated not just at the breakage, but the thought of someone shooting his seabirds. He kicks the fallen bucket and it clatters across the deck and over the side. His outburst causes Dorothy and Billy to look up in surprise.

“I sent the bucket to the abyss,” he says defensively.

“Should send someone down there to get it back,” chuckles Billy ominously. He continues to add water to the TPU bucket until that too snaps.

Tom shakes his head, disapprovingly. “So, the best biopolymer we have is about 41% the strength of the TPU.”

“That’s pretty good, though,” Dorothy says.

“Not good enough. So, Dorothy, make up a new batch of that biopolymer, and then have Billy splice it with the one we had yesterday. Then run the stress test again.”

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Dan approaches, commenting, “Tom splices while Plume burns.”

“You’re so melodramatic.”

“You should check this out” Dan raises a booklet.

“What’s that?”

“Bennet’s notes.”

“Won’t Bennet miss them?”

“Bennet is distracted.”

Tom steps closer, angrily. “I did not authorise him to be killed!”

“Not yet. But you are always were a bit slow. Bennet is still alive. Pre-Abyssal, but alive.”

“What have you done with him?”

“He drank too much kelp wine, and made an unwarranted pass at one of the Mermaids.”

“*Uh-oh!*”

“She took offence to his existence and put *Extract of Echinoderm* in his drink.”

Tom nods, appreciatively, wondering why he had not thought to do that. Extract of Echinoderm is a powerful hallucinogenic drug that is sometimes referred to ‘*magic mushrooms of the sea on steroids*’.

“So, the Chairman’s management consultant is crawling around the floor like a stoned crab?”

“And drooling a lot,” Dan chuckles, cruelly. “You should read this shit.” He hands over the notebook.

Tom flicks through the book, a handwritten journal with asterisks, underlined sections and circled notes. He glances up at Dan and nods, gravely.

Tom takes the notebook to the mess hall and reads it page by page. When he gets to the end of the book, he looks up to see Dan and Dorothy waiting on him. “So, I’ll paraphrase Bennet’s recommendations to the board.”

“Can’t wait,” says Dan.

Tom says, “Cease the entire effort to develop biopolymer from macro-algae. Review the approvals process to identify how this (massive) waste of company money was authorised. Was it actually authorised? Consider legal action.”

“What does that mean?” asks Dorothy.

“That means sue Tom for being creative with the bookwork,” Dan chuckles.

“That’s about right.” Tom continues, “Halt the production of ‘sequestration kelp’ and turn this productive space over to the most profitable seaweeds.”

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“There’s your carbon sequestration dream, dead in the water,” Dan drags a glass across the table and pours a slug of Kelp Wine. He slides it across to Tom. They lock eyes for a moment, a conspiracy building. Tom skulls the wine. Dan recharges the glass and says, “No point reading on, really. The consultant is pre-Abysal.”

“*Hmmm.*” Tom refers back to the book. “Cease production of Kelpetrol seaweeds and run the facility on regular petrol. Turn this productive space over to the profitable seaweeds.”

“*Scurvy-man!*” Dan swigs from the neck of the bottle and bangs it against the table.

“That would make us carbon positive!”

“Settle Dan. You need to be cold for this job, not hot. There’s more.”

“There need not be more. If this gets back to the Directors, they’ll act on it straight away. This whole operation is finished. Vison lost!”

“Remove existing Plumeside CEO and create new internal ‘Plumeside Operations Manager’ (Singapore-based) reporting to new CEO. *Hmmm.*” Tom pushes the book away and sits contemplative, thinking it through.

“So he wants to sack your girlfriend,” asks Dorothy unsure whether that plays out well for her.

“My fiancée.”

“That’s why Terra is dying,” Dorothy says, glumly. “All they think of is imminent bill-fold.”

Tom places his palms over his face to process his thoughts in darkness. When he lowers his hands, he sees Dan glaring at him.

Dan opens his palms and cocks his head. He’s running out of patience. “Make the decision, Tom. I’ll take care of the business, you just figure out how to spin it.”

“I really think...” Tom says, slowly, choosing his words carefully. He heaves a deep sigh and says, gravely, “I really think that *Vitae-planeta* would be stronger if Bennet slept with the Dark Crabs.”

“About bloody time!” Dan stands and walks to the door.

Tom calls out to him “Don’t do it alone.”

“You kidding me? There’s two hundred hot-plumers want that Turtle-f**ker dead.”

Dan departs and Dorothy does something she has never done before: she pours Kelp Wine in to a glass and skulls it. She’s not very good at skulling home brew spirits, and she

gags repeatedly on the alcohol. She holds her throat as she rasps. Eventually, she finds her voice, “How does it feel to have a murderous psychopath on the team?”

“He’s not a psychopath. He’s a sociopath,” Tom replies, calmly.

“The difference being?”

“Sociopaths look after their own, Dorothy. But you miss the point.”

“Which is what?”

“He’s *our* sociopath,” Tom growls.

“Do we really need a sociopath on the team?”

“Do you think Bennet ought to be sent to the Abyss?”

Dorothy looks at her lap glumly for a period. Finally, she nods her head.

“And do you want to take care of that business?”

Dorothy looks up, her eyes red. She shakes her head.

“So, we need a sociopath on the team. To take care of business.”

Mermaid Revenge

Shortly, there is a commotion out on deck and Tom exits the mess hall followed by Dorothy. Four women, lithe and fit, wearing just bikinis, cross between the pontoons carrying Bennet who is drooling and mumbling incoherently. He has been stripped naked, to ensure that when he takes his trip to the seafloor, he doesn't take synthetic fabrics with him. There is already too much plastic in the ocean, as it is.

Dan and Broce, one of the kelp cutters follow them. Dan says, chuckling, "The Mermaids beat us to it."

The Plumer women lay the naked Bennet on the trapdoor under the container that holds five tonnes of sequestration kelp. One of the women retrieves the rope that activates then chute at the bottom of the hopper. She glances over at Tom. "We good to go, boss?"

"Hold up. Hold up. You are over-eager."

"He's uninvited and wants to close us down," says Broce. He's young and angry and just wants the job done.

"Kelp-cutter. Put a squid in it," Tom growls.

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“That Turtle-F**ker grabbed my yoni when I was lap-dancing him,” says an aggrieved Plumer woman.

“Was that before or after you drugged him?”

“That’s why I drugged him.”

“*Oof*,” thinks Tom. That’s not good.

“He’s going where the Dark Crabs are.”

“I know. I know. I just want some due process. Would you hold up!?” Tom moves over to Bennet and rests on his haunches.

“Hey Bennet?”

Bennet rolls around in inebriated bliss. He is grinning and drooling. “Hey, Tom,” he slurs. I’m flying, man. I’m flying like a...”

“Like a flying fish, you dumb mullet. Are you happy, Bennet? Did we show you a good time?”

“Hell, yeah. Look at me, I’m flying.”

Tom takes a step back and finds a pithy justification for the murder, “He was going to die one day. At least out here we make it quick. To the Abyss.”

“Sleep now Turtle-F**ker,” says the Plumer woman. She yanks the rope, the chute opens and five tonnes of sequestration kelp sploops down onto the deck in a long stream.

Bennet disappears from view as the glistening seaweed piles up in the shape of a pyramid. The MBA trained management consultant - *who somehow managed to excel in a career not realising that his own life was dependent on a functioning biosphere* - asphyxiates under the mound of kelp.

For five minutes, there is silence around the mountain of seaweed. Tom counts down the seconds, and as soon as five minutes have passed he nods gravely. Four Mermaids pull on the ropes that activate the trapdoor. The trap door falls open and in seconds the mountain of kelp and the management consultant slip into the Indian Ocean and begin the long descent to the Abyss. The Mermaids pull the trapdoor shut, and then turn to walk away.

“How about a little ceremony?”

“For what? An uninvited Terrestrial?” one sneers.

“For a human life, maybe.”

“He should keep his hands to himself.”

Dan chuckles, cruelly. “You can’t stop them murders.”

Tom looks at Dorothy. She’s about to cry. She turns for the mess hall and storms off.

Tom Gets Fired

Two weeks after his ultimatum, Tom enters the Singapore boardroom feeling the familiar sensation of frustration. He nods sombrely to each of the Terrestrial directors. As he takes his seat, he is reminded of the Plumeside expression: *the tide comes in, the tide goes out, and the tide comes in again*. This is the nice way of saying *Same Shit, Different Fish*.

The Chairman is late, so Tom rests back in his chair and gets some shut-eye.

When he finally arrives, the blubberous (Plumespeak for fat) old terrestrial swoops his eyes around the boardroom, calling out, “Where’s Bennet? Where’s my consultant?”

“*Abh*, yes,” Tom sighs, rising from his slumberous position. “Bennet, the former consultant.”

Tom contemplates the question as the blubberous Chairman seats himself. Where’s Bennet? It’s not a question easily answered. He may be on the sea floor three kilometres below the Plume. Maybe his carcass is drifting downstream, still. Or maybe he has been consumed by sharks. That’s unlikely as the Plumeside sharks are so well fed on seafood they’d be unlikely to trouble

themselves with a terrestrial mammal. With that said, maybe an oceanic white-tip – *Longimanus* – from the beyond came across the consultant’s carcass and took in a meal...

“This is the official report,” Tom tells the Chairman, sliding a document across the table. “To summarise, we don’t know where Bennet the interloper is. He’s assumed drowned.”

“Drowned?” the Chairman is astounded. He stands, glaring at Tom. He steps out from behind the table and approaches Tom. “You say drowned?”

At that point, Sascha enters the room and observes the exchange between Tom and the Chairman with alarm. The board meeting hasn’t even started, and there is already a clash.

Plus, she heard Tom refer to Bennet as an ‘interloper’. That’s Serious. It means that he never been given permission to be Plumeside. And that means that he is most certainly dead. So, the rule goes, you may arrive uninvited, but you have to get permission if you want to stay. If not, you leave or you’re on your way to the sea floor.

Tom continues to brief the Chairman, “It’s not infrequent to lose someone new, and

even more likely should they refuse the safety induction, as was the case with your consultant. Your former consultant.”

“You don’t just drown my damned consultant!”

Tom chuckles aloud, “I can assure you that ‘I’ did not drown your consultant,” He knows that he is on safe ground because ‘he’ most certainly did not do that.

“Don’t sit there laughing,” the Chairman bellows. “There’s been a death on your watch.”

“But it was only a Terrestrial,” Tom thinks, but he holds his tongue. Instead he says, “It’s dangerous, Plumeside, Mr Chairman. I did try to warn you. And given that the on-boarding procedures were circumvented on your authority, and your consultant refused the safety induction, I think you will find me blameless.”

“You are shifting the blame onto me?”

“It’s all in the report, Mr Chairman.”

“I have never heard anything like it,” the Chairman returns to his seat. “And what does your damned report say happened to him?”

“He disappeared on the fifth night. Such disappearances are generally caused by falling

off the pontoon into the Indian Ocean during glass-out.”

“And what the devil is that?” the Chairman wipes his forehead with a cotton tissue.

Tom stands and uses his hands to set the scene.

“Oh, Cod,” Sascha grumbles under her breath. “He’s going to recite Plume Poetry.”

*“**On** cloudless nights when the Milky Way lights
the ocean with beauty unsurpassed;
To everyone’s thrill on these nights so still,
we say the sea surface has ‘glassed’;
These mystical nights make you feel so light,
it’s almost as if you were flying;
But it’s dangerous too, and for the Plumeside crew,
it’s hard to stop interlopers dying.”*

A tear comes to Sacha’s eye, and she wipes it away feeling self-conscious that her steely corporate mask has slipped. She is stunned by Tom’s audacity. She knows exactly what has happened. Bennet has had five tonnes of wet Sequestration Kelp poured on top of him. He would have asphyxiated within minutes. Then, he would have accompanied the seaweed over the side and into the depths. She knows this because she had

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often heard Tom and Dan discuss how they would *'knock people off'* if they had to. Now it seems that he has followed through on the threat. And not only that, Tom even had the nerve to write a poem about it, and recite it to the board! What an incredible spirit!

A cold chill crawls up Sacha's spine as she considers the question, "What else will he destroy to get his own way?"

Tom glances in her direction, but she can't hold his eye. She looks uncomfortably to her notes.

Meanwhile, across the board table, the Chairman is having trouble breathing. He glares across the room so intensely that Tom can almost feel the old boy's heat. It's nice actually, as it is a bit chilly in the air-conditioned room.

Tom responds to the Chairman with a contented grin that if translated would read: "If you circumvent my authority and send a spy to my camp, I will have him killed and have you take the blame for the death."

Of course Tom doesn't say that. Instead, he taunts the Chairman, "Do you like my poem?"

The effect is instant. The Chairman stands, leans forward and slams his palm against the

table. The action jolts the Directors alert. They fidget uncomfortably in their seats as the Chairman continues to project spite at Tom.

Tom is nonchalant. He has worked on commercial fishing boats and has been despised for holding his ground by men more fearsome than the blubberous old Chairman. And besides, what's the worst could happen? He could be fired. Well, that was inevitable, anyway.

Plumers own the Plume

Back on the Plume, Tom sits with his team in the mess hall and briefs them on the board room antics.

“So how did Sascha take that?” Dorothy asks, wondering how this new situation works for her.

“Not so well.”

“So, the wedding’s off then?”

“Okay,” says Dan. “So you’re no longer on the board, what does that mean?”

“That means that I have no say in the direction of the company.”

“That’s bull shark shit. The company could go rogue, now. They’ll be out here in a week shooting seabirds.”

“You’re not keeping up, Dan. It’s already gone rogue. That’s why they ditched me.”

“So what’s your plan?”

Dan draws a breath, gulps and commits, “Succession.”

“F**k yes!” Dan claps his hands together, excitedly. He stands, walks in a circle with his hands on his head. “Yes, yes, yes. At last.” He sits back down again, opens his palms and says, “I love you, Tom.”

“We knew, one day, this day would come,” Tom says, nodding pensively, buoyed by Dan’s response.

“I don’t understand succession,” says Dorothy. “Who is taking over?”

Dan says, “The Plumers are succeeding from the corporate overlords.”

“So, you are saying that we don’t take their calls anymore, then what happens? We keep selling product for which they get paid?”

“We renegotiate contract with the buyers,” Tom says.

“But who is we?”

“The Plumers,” says Dan and Tom, together.

“But then they’ll be buying stolen goods.”

“So let’s be radicals. Let’s get to the root,” Tom says. He leans forward, his hands clasped together. “Who owns the Plumeside infrastructure?”

“The company does,” says Dorothy.

“And what is the company? It’s an hypothetical construct comprised of contracts, bank accounts, leases, and so forth. And people: the staff, shareholders and directors. There is only one Plumer who actually has an ownership share of the company, and that’s me. The rest of the

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Plumers can't own the Plumeside infrastructure due to corporate rules. Institutional shareholders only. Do you see those people out here? I don't. So I'll tell you who really owns the plume, Dorothy. The Plumers own the plume."

Dan slaps the table. "Fuck, yes! Gigaton Tom has finally grown a pair. Yay!"

"That's always been my position," says Tom. "But now it is time that we acted accordingly."

Dorothy is not convinced. "But we won't be able to trade with anyone as they'll see us as having stolen the infrastructure."

"Nope. They'll be dealing with a sovereign nation. The independent, sovereign state of Plumetopia."

"The Drifting Free States of Plumetopia," Dan suggests, rubbing his hands together, gleefully.

Tom continues. "We'll come to an agreement on the name. But what we are actually doing is nationalising an asset formerly owned by a corporation. A corporation that has been deemed to have broken its ethical charter."

"But we won't be a real nation," Dorothy pleads. "We won't get recognised."

“Recognised by whom?” protests Dan.

“By the United Nations. Or by other countries.”

“But we are not trading with them,” says Tom. “We will be trading with private corporations. And besides, the deeper issue is that we should not be looking for recognition. We should stop looking for approval from higher powers. We are the higher power. As a sovereign, we don’t answer to others. We negotiate with them.”

“Okay, so how about this for an idea,” says Dorothy, tersely. “Before we hoist the Jolly Roger and take on the whole world, why don’t we practice by negotiating with the company that we already have a trading relationship with? Upwell Technologies Corporation, for example.”

Tom slumps back, suddenly deflated, “*Hmmm.*”

“*Nabb,*” says Dan. “F**k them. They had their chance.”

Dorothy presses on, “See if you can work a deal, and if not, then succeed. I’ll start researching to see if there is a critical pathway to statehood, and look out for all the potholes on the way.”

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“That means I’ll have to go back to land,”
says Tom.

“Go and negotiate with the CEO-UTC.”

“*Abhh*, yes. Sascha.”

Briefing Sascha

The following day, Sascha arrives at her Singapore apartment to see Tom sitting outside her door. She chuckles callously.

“A Plumer washes up on my door step. This must be a portent of something.”

Tom stands and adjusts his shark skin waistcoat. “This place is weird. It doesn’t move when the wind blows.”

Sascha opens the door. “I’d say ‘*I assume you’d like to come in*’ but I can’t really make assumption with your type.”

“Would you like me to come in?” Tom asks, suddenly unsure of whether he’ll get the invitation.

Sascha thinks on it a little too long. Tom steps forward and places a kiss on his fiancée’s cheek. “I would like to come in.”

“Why don’t you come in, then, Tom.”

Inside the apartment, Tom parks up at the kitchen bench. Normally, he is in command of every moment of his life, but right now, he is in a neutral space, just trusting that everything will move smoothly around him.

Sascha pours a glass of wine. “It must be important if you have dragged yourself out of the ocean.”

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“It is very important.”

“What? Has it sunk?” Sascha laughs aloud. It’s a cruel joke, but always a good one.

“We are still *Bringing the Dow into the Light*. How have you been?”

“You didn’t have to leave just like that. I cried a lot that night.”

“I know. I just really needed to get out. What have you been up to?”

“Nothing that you’d approve of.”

“Try me.”

“Doing my job as a CEO of a big company. Following instructions from my board. Signing contracts.”

“With Koreans”

“Amongst others.”

“Events of the past twenty four hours make that an unwise path.”

“Is that right?”

Tom takes a deep breath, suddenly tense. Getting fired from the board was procedural, compared to what comes next. He is about to throw the company into a complete tail-spin. He asks, “Do you remember we had the conversation once about who *‘actually owns’* the Plume? And you said that it was the shareholders.”

Sascha nods, “The shareholders own the company and the company owns the infrastructure that makes the Plume. So, by definition, the shareholders own the Plume, and the product that comes from it. And you own part of the Plume because you’re a shareholder. As am I.” Sascha slides off her jacket and drapes it over the back of a chair.

Tom watches her move, observing that she is tense. He knows that he has interrupted her coming home routine. Normally, the suit jacket would be properly hung in the wardrobe and she’d be in the shower by now, washing off the war paint.

He presses on, regardless. “And you remember how I advanced an idea that that was simply a view of a capitalist system, and that there were other ways to answer the question.”

Sascha eases a long sigh, as if resigning herself to a long night. She slops more wine in her glass. “I recall that you were a bit hazy on the details.”

“I was then.”

“Now?”

“It’s clear now. I’ve come to negotiate terms with the company.”

“Really?”

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Tom nods, sips his drink, thoughtfully, watching Sascha processing the new information.

“And here I was thinking that you’d come to see me.”

“I did come here to see you. Come here.” He reaches out, but she stubbornly resists. “Come here, Seahorse.”

Sascha steps forward allowing Tom to wrap his arms around her. He kisses her forehead, ignoring the hair tickling his nose. He murmurs into her ear, “There is you. There is I. There is us. There is our respective missions and roles. The *plito* and the *zooop*. And everyone else.”

Tom moves Sascha away from his body so that he can see her face. She looks sad, tired.

“Six years.”

“What’s that?”

“Six years we have known each other. Three in planning. One year building. Two in operations. Lots of challenges. Lots of disagreements. Two alphas butting heads. But now, Tom, with these new changes, there is no certainty anymore. I am afraid that you will wreck things. I think you will sink the boat we built.”

“It’s already wrecked, Sascha. The thing that I was working for has been wrecked from the inside. I’m setting it right again.”

“So, what are you setting right?”

“I want to negotiate the sale of product to the company.”

“But you work for the company.”

Tom withdraws an envelope. “This is my resignation, effective immediately.”

Sascha steps back and becomes animated. She throws in a bit of theatre, “So, you want me to go to the board and negotiate on behalf of a former director who – now – no longer works for the firm that he should have a contract with the company, otherwise you are going to what? Steal the produce of the Plume and sell it to someone else? Is that you putting things right, Tom?”

“That’s more or less it.”

“And how do you think that is going to play out, maestro?”

“I think that they will see it as a good option.”

Sascha starts laughing. She puts her hand to her mouth. “Oh, Tom.”

“Oh, Tom?”

“They won’t, Tom.”

“You seem very sure about that.”

“I am.”

“How so?”

“Because I am not going to pass on your offer.”

“Really?”

“Absolutely not. It’s ridiculous. It sounds like something you knocked up with Dan and Dorothy, sloshed on kelp wine. Sitting out there inventing a model society and expecting to be taken seriously when you come back to land.”

“Then maybe I should go straight to the Chairman.”

“He’s not taking your calls right now, after you oversaw the murder of his favourite consultant. And if he was, he’d tell you to talk to me.”

Tom looks to the floor, deflated.

“Oh Tom, come here,” Sascha opens her arms and Tom steps forward and allows her to embrace him. It’s nice in there, her hair against his face. She doesn’t smell of *plito* or *zooop* but of the very best aromas that the Terrestrials can produce, which is okay, really.

“I don’t accept your resignation,” Sascha tells him. “We need you out there doing what you do best.”

They hold each other, gazing into each other's eyes, and fall into a dreamy state. Plumeside negotiations slip from their minds and other thoughts take their place.

She's upset, because he has disrupted the order that had done them well for over six years, and she still doesn't know how things will pan out. She misses him and the old relationship. Now there's such uncertainty. She just needs to talk some sense into the boy, and maybe she can get him reinstated onto the board.

Tom has other ideas swirling through his mind as he examines Sascha's face, fascinated by every fine detail. He needs her more now than ever before. He needs her corporate complicity, and he needs emotional support from his lover. Then, as they gaze at each other they both get it into their minds that they can seduce each other in to complicity. She places her hand around his nape and he leans forward to kiss her.

"Can we talk about business later?"

"Okay."

"We'll pick it up in the morning."

"Okay."

"Do you love me?"

"Yes."

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Sascha takes his hand and leads him into the bedroom.

Declaration of Independence

When morning comes, there is a big rush. Sascha's phone rings, and she spends twenty minutes on an intense call. Tom sits at the kitchen bench drinking coffee: one of the few good things about Terrestrial. Watching her talking and rushing around is dizzying.

Finally the call ends, and she addresses him, "There are ten things I was supposed to do last night."

"Sorry."

She stops rushing for a moment, places her hands on his knees, kisses him, "I did the most important thing. It just wasn't on the list."

"And you did it well. What are you rushing for?"

"Meeting with the Koreans and the Chairman downtown. I have to shower, prep my clothes, print documents. You want a ride downtown?"

"*Uh-huh.*"

The rushing doesn't stop until Sascha and Tom are in the back of a petrol-powered taxi driving through a fossil-fuelled city that smells of vehicle exhaust, bitumen and concrete, and never sees the stars.

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Finally, she takes his hand in hers, “So are we all good from last night?”

“Last night was amazing.”

“It was well overdue. I meant your Plumeside ideas.”

“Yeah, we’re all good there. I think that we understand each other’s position.”

“That’s good then.”

“Tom ruffles around in his pocket to retrieve his resignation notice and another document. He replaces the resignation letter, as it is irrelevant once the second is served.

“Which then brings me to this.”

“What is this?”

“It’s a *Declaration of Independence*.”

Sascha takes the envelope and taps against her knee. She looks Tom in the eye trying to gauge whether he is serious. There are a few things going through her mind. First, the plan to seduce Tom into complicity has clearly failed; she’ll need to rethink that strategy. Second, why does he persist with these ideas? Why does he always take the extremist position? Why can’t he just compromise, like the Terrestrials do? They’ve got a great thing going, they’re saving the planet and making money. Third, the envelope is a hand grenade. If Tom

follows through with his plan, the company could fold, as its viability is dependent on the sale of the product from the Plume. Plus, they are about to kick-off a complex capital raise to pay the Koreans for the next ten Upwell Pumps. The entire corporate edifice of Upwell Technologies could collapse as a result of what's written in the envelope. Even if the company doesn't fold, the complications forced upon all the governors, on her in particular, will be immense.

Sascha checks her watch. Time is short. She opens the envelope, clenching her teeth, shaking her head. There is a short statement inside, addressed to her as CEO of the company. It is written in Plumespeak, with Tom's unmistakable purple prose.

Whereas,

It is the way of the Dow that the Plito and Zoop shall prevail not from the industrial machine that exceeds the nine planetary boundaries, for this failed stratagem brings forth the Short Future.

Better yet, it is the way of the Dow that the Plito and Zoop shall prosper through means Nine-

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*Boundaries Safe, that future Plumeside
Infrastructure shall be 'grown' from the Plume.*

*And whereas the ways and means of Terrestrials
have bought us to this place, it was never the intent to
proceed in this manner; and yet, proceed with
industrial machine is all that the Terrestrials know.*

*Thus and therefore, so long as Terrestrials decide
for the Plume, the promise of Upwell will be forever
cast in to darkness, and low levels of physe, by the
shadow of the Short Future.*

*Thus and therefore, it is clear that the way of the
Dow, the prospering of the Plito and Zoop, the
restoration of the nine-planetary boundaries, the
survival of genus Homo, and the diversity of life on
Earth can only be achieved when the Plume is
decided by Plumers.*

*Thus and therefore, on this day it is declared that
henceforth and forevermore, the Plume Infrastructure
and the produce created therewith is the unalienable
property of the Plumers, and that mutual group of
people and their infrastructure shall henceforth be
recognised as a sovereign state, alongside all other
nations.*

Signed, Tom Cove

The Drifting Sovereign States of Plumetopia.

“Oh, God.” That’s all Sascha is able to say. She folds the letter, replaces it into the envelope, her head swimming.

“Tom, I’ll ask you this just once. Please take this back and don’t speak of having given it to me.”

“This is the way forward, Sascha. Don’t you see?”

Sascha inhales deeply and tries to make sense of the thoughts that are booming through her head. She imagines getting drilled by the risk committee. It would go something like this: “Have you ever heard of this ridiculous proposal before?”

“Yes, routinely over the past six years.”

“Did you have a risk management plan?”

“Yeah I’d f**k his brains out and he stops talking about it.”

Sascha is stunned and she mutters, under her breath, “Tom, you are going to crucify me.” Her head swirls with questions. “What am I supposed to tell the Chairman?” she asks, then answers her own question, “Oh, by the way, my fiancée has decided to steal your infrastructure and wants me to act as a

go between so he can the company's property to the company. It's not business, Tom, its extortion."

"It's not the company's product anymore, Sascha. It's ours. We have seceded and nationalised the asset."

"Tom, this is a \$50 million public company. Do you think they'll just let you get away with grand theft? This will be front page of every international business paper in the world. There has to be another way."

"There isn't."

"You want to be a sovereign, why don't you issue a Sovereign Bond. Buy the infrastructure from UTC. I'll negotiate that. But do it properly, secede properly. Not like this. Not with this unintelligible script."

"What?" Tom quips, "You don't like my poetry?"

Sacha's reaction is instant. She whips out her perfectly manicured finger and points it at his face, she barks, "Do not fucking laugh at me!"

Tom lowers his head.

"The very existence of this document compromises me. 'I' could be thrown off the board! 'I' could be financially ruined by this move. Let alone what will happen to the

company when the regulator demands that we share this news with the shareholders. Let it go, Tom. Please just let it go, darling. Please darling.” She’s pleading now, scared of the future.

Tom goes silent, feeling his guts ache. “I can’t. There is too much at stake.”

“You can have it all Tom, everything you want. You just have to be patient.”

“Patient.” The word comes out as a splutter. “I have to be patient? There’s 418 parts per million CO₂ in the atmosphere, Sascha. An Arctic blue ocean event is imminent. The whole fucking planet is about to melt-down. Patience went out the window in 1990. Why the fuck can’t ‘they’ be patient? It’s within grasp, Sascha,” Tom pleads, “It’s right there. And entire new class of sustainable bio-polymers. That alone is worth billions, irrespective of the Plume. And these greedy f**king mother**kers cut my research funding. Why the fuck can’t they be patient? You were supposed to look after this.”

“I was what?”

“I consented to you bringing the greedy pigs into our plan on the provision that you

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managed them, and didn't let them, fuck it up. Well guess what?"

"Don't drop this on my plate. I didn't vote for you to be taken off the board."

"Nor did you didn't vote against it."

"There was no choice to vote against it! I abstained. It was the best I could do."

"The best you could do? *Hub?*"

Sascha looks up to see that the vehicle is parked outside the hotel. She glances at her watch. "Shit. I'm late. She unlatches the door. "Can you pay the driver?"

"Yeah."

"One more time, Tom. Let this go?" she raises the Plumeside Declaration of Independence.

Looking at his hands clasped in his lap, Tom shakes his head.

"Well then, Tom, then there is no guarantee what happens next. What happens to you, to me, to us, to the company, to the Plume. It's all up in the air now. And you threw it up there!" Sascha departs the cab and the door closes firmly behind her.

Tom stares at his hands chewing it over. He'd never seen her so angry. He looks up to see the cab driver is looking at him through

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the rear view mirror. He feels overwhelmed and is able to speak a single word. “Airport.”

Out of Alignment

Tom's heart is heavy as he steps into the Catalina despite there being five of his 'countrymen' aboard. The Plumers are in high spirits as they are heading back to the place where things are made better. Where the *Plito* and *Zoop* grow in profusion. Where they bring the Dow into the light.

Tom moves to a seat at the back of the plane. Despite carrying the most important news of the Plume's history, he's not wanting to share that he has declared independence, and potentially cast the entire project adrift. His mind is overflowing with thoughts that trip over each other in a confused tumble. On one hand, he is resolute that passing that document to Sascha was the right thing to do.

He's done it! He's finally done it!

He's been plotting it for years, and now it's done. Or at least it has begun. But the ferocity of Sascha's reaction unnerved him. He'd never seen that before. It truly was like he'd scared her, or given her cause to fear for her future.

"You've crucified me," those words are indelibly seared into his mind now. What a terrible thing to do to your partner.

The Catalina alights, the dual radial engines filling the cabin with a howling noise. Tom looks out the plexiglass bowl-shaped windows as the plane banks. Down below he sees the ships anchored in Singapore Straits. Hundreds upon hundreds of them, powered by bunker fuel and diesel, petroleum based fuels that pollute in every single aspect of their life cycle. How desperately the world needs a new source of primary raw materials, Tom thinks. How desperately does the world need to make its liquid fuels from macro algae, grown lazily in the ocean, in the Plume, with next to no effort but the maintenance of the Upwell Pump and the other infrastructure? No seismic ships, no oil derricks, no oil pipelines. Just a piece of rope with seaweed growing off it. And once the Upwell Pumps can be made of macro algae, they can close the materials loop out at sea and really start to pump-out those pumps. They'll grow exponentially, not linearly, like in a production line.

They'll have the planet saved by Tuesday. How simple is that? And how out of time the world is. It's not as if this climate change issue has just popped up. Scientists calculate climate sensitivity in 1896!

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“1896!” Tom says aloud and sees one of the young Plumers turn and look his way. Tom lowers his head and returns to his thoughts. The World Metrological Organisation recognised climate change as a threat to humanity in 1985. And Sascha tells him to be patient! She tells him that! Which bit of “climate emergency” don’t these corporates get?”

Tom sighs, he’s exhausted. No sleep last night, for all the right reasons. He smiles as he thinks back to the intimacy. And then he hears her say, “You’ve crucified me.” Why would he do that?

“Oh, Dow,” he sighs. “What have I done?” Fortunately he knows who will have an answer for it. The Pilot and Co-pilot always have good ideas.

He makes his way to the front of the plane, past the five Plumers. “Hey, Tom.” One calls out, and in that moment, Tom wishes that the management structure wasn’t so flat. It’s Broce, the Kelp Cutter who was going to murder Bennet with Dan, but the Mermaids beat them to it.

“*Uh-huh?* What’s up?”

“There’s some people saying that Plumeside is going sovereign.”

“That’s just cuttlebutt,” Tom snaps.
“Don’t believe anything until you read it on the company press release.”

That shuts them up, the five Plumers exchange glances with confused looks. Plumers don’t do press releases. They share information verbally, face to face.

Tom steps into the cockpit and closes the door behind him. He draws his hand down his face, relieved to be among people who appreciate hierarchy.

“Hey, Tom.”

“Hi, Tom.”

The pilots are always embracing of him. He slips into the jockey seat and pulls the headphones over his head.

“How’s that Sascha coming along?” asks the Pilot.

“Yeah,” Tom, is stumped for what else to say. “I wanted to brief you guys on some big changes at the top.”

“Sure. What’s going on?”

“Well first thing, I am no longer on the board of Upwell Technologies.”

“What happened, mate?”

“I had to draw a line in the sand. The board had set up to commission another ten

Upwell Pumps, like the one we have, made of polyethylene, concrete and fibreglass.”

“Awesome,” says the co-pilot, excitedly. Where were they going to put them? Further out to sea?”

“That’s not the point.” Tom waves his hand as if to wave away their support for the proposal.

“If they are going further out to sea, we’ll either need to add long-range tanks to the plane, or use Plumeside as a refuelling station which means we’ll need to increase the tankage out there. I’ve already done the numbers. I’d be happy to walk you through them.”

“That is absolutely not the point,” Tom says, frostily. “The reason that I am off the board is because I refused to sign the check.”

The pilot and co-pilot shoot each other anxious glances. “Why is that, Tom?”

Tom shakes his head, annoyed. He is going to have to do *Planetary Boundaries 101* all over again. At least he’s good at that. “So, if we are going to have any chance of avoiding 2 degrees above the pre-industrial baseline and abrupt climate change, we need to pull 50 billion tonnes of CO₂ out of the atmosphere, every year. That’s fifty Gigatons. When I

started this project, I put my hand up for a Gigaton a year. I want the Upwell Pumps to sequester a Gigaton of CO₂ per annum.”

“That’s why they call you Gigatom,” chuckles the Co-pilot.

“I don’t know. Maybe. If we can do that Gigaton right, we can usher in a whole new paradigm of materials made of macro-algae. Use the materials as a carbon sink, and grow them exponentially. Get off petroleum forever.”

“You know we really love the *Kelpetrol*,” the pilot says.

“That’s good. We are going to grow Upwell Pumps made of seaweed.”

The two pilots shoot confused glances at each other again. How’s that going to work?”

“Not out of seaweed directly. We extract compounds from the seaweed, process them and form them into bio-plastics.”

“So you are going to replace petroleum oil with seaweed- plastic materials?” asks the Co-pilot.

“Exactly,” says Tom, relieved that someone had enunciated the idea more succinctly than he.

“Great. So when’s the first seaweed Upwell Pump?”

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“I don’t know. It could be years away.”

“And the company is right behind you on this?”

“They cut the Research and Development funding when they took me off the board.”

The three people in the cabin of the Catalina fall into silence as they ponder this statement. In the place of voices comes the droning noise of the Catalina engines and the hiss of air moving across the skin of the plane at 500 miles per hour.

“I don’t know, Tom,” the pilot finally says. “Sounds like you would have been better off signing the check for the plastic pumps, and buy yourself some time to develop the kelp plastic.”

“Yeah. Thanks for that.” Tom feels lightheaded. Last thing he wants to do is bring up the *Declaration of Independence*. Strike that off the cockpit conversation agenda. He stands, pats each of his two confidantes on the shoulder. “Anyway, there’s going to be some changes coming through the pipeline. So, Keep Kelping.”

“Keep Kelping Tom.”

“Good on you, Tom.”

He exits the cockpit and closes the door behind him, looking at the floor. He glances

up to see the Kelp Cutter called Broce waiting on him. He knows he owes it to him, so he lets the young man speak.

“Tom, can I ask you question?”

“Sure. You guys all Kelp Cutters?”

“Yeah. We work nocturnal. Sector 3B.”

“I hear that you guys take your breaks Terrestrial.”

“We go to Bali, Indonesia.”

These are warm-Plumers, thinks Tom. Why I even talking to them?

Broce asks, “If Plumeside goes sovereign, does that mean that the UN boss will come out and announce it?”

“Do you think that Plumeside should go sovereign?”

“Shark, yeah!” says Broce, enthusiastically. We send all of the profit Terrestrial, and all the Plumers get is wages. We bring the Dow into the Light.”

“Are you guys Hot-Plumers?”

“Shark, yeah!”

“So why do you go to Bali on your breaks?”

“Recruiting.”

“Recruiting?”

“We scout for new-Plumers. You see, if we’re going to ten Upwell Pumps, we’re

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going to need another two thousand Plumers. Management is all over this, right?”

“Yeah. It’s all in hand. And what do you think about the ten new pumps made of plastic?”

“It’s a great idea. Better that the pumps are made kelp-wise, but that’s years away, right?”

Tom feels giddy and starts swaying. He corrects himself, holds his hand up and says, “Thanks for sharing, boys. Keep Kelping.”

He returns to the back of the plane and slumps down in the seat. “So much for Hivemind,” he thinks glumly. Now it really is Tom against the world, as Sascha said. He has set himself against the board, the CEO, the shareholders, his fiancée and the Hivemind of the Plumers. At least he has Dorothy and Dan on his side. Or does he?

Fresh Lipfish

When the Catalina touches down Plumeside, Tom does something that he has never done before, he retires to his bunk. Dorothy is waiting for him as he steps of the plane. "I'm not feeling too good," he tells her.

He moves past Dan on his way.

"How did it go?"

"Not now, Dan."

Tom enters his cabin and slumps on the bunk, his face in his hands. He is interrupted by a gentle knock on the door.

"Do you want some Kelp Wine?" Dorothy asks.

Tom sits up feeling self-conscious. He hasn't eaten and hunger nags at his gut. "Can you get me some mackerel steaks, too?"

"How did it go over there?" Dorothy asks, resonating his glum mood.

"I think that I may have put a torpedo through everything we have been trying to achieve."

"No. You wouldn't have done..."

"I just need to debrief myself. Can you get me some fish and wine, Dorothy?"

"Okay. Are you okay?"

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“I am not okay, Dorothy.” Tom feels nauseous, unsure whether he should share. “I have something that I have never had before.”

“What, do you have the flu? Or...”

“Doubt, Dorothy. I have self-doubt.”

When Dorothy returns with the fish and wine Tom is resting on his bunk in the gloom, his back to the wall. Dorothy sits on the end of the bed and lays out the meal.

She watches quietly as Tom breaks the mackerel steaks into pieces, dips them in the flying-fish liver pate, and washes it down with a glug of Kelp Wine.

“I remember when I first met Sascha,” Dorothy says, hoping to learn more about the demise of Tom’s relationship. “There was a party in the mess hall and she made this lewd comment.”

Tom chuckles, “Really?”

“She said, Tom, is that kelp in your pocket or are you just pleased to see me?”

Tom laughs. “That sounds like Sascha.”

“Which was it?”

“What?”

“Are we going to be okay, Tom? Is the Plume going to survive?”

“In the physical world,” Tom says, philosophically, “I’m not so sure. But I believe in the Dow, Dorothy. We bring the Dow into the light. And by creating the synergy between *Vitae-planeta* and Anthro, I believe the sum of the living things on this planet will reward those who act this way. Somehow. Somehow. Do you understand?”

“Yes.”

“I don’t have a scientific argument for that. That comes from the spiritual part of me – the Vitan within - not the rational. I think that we will prosper. But I have picked a fight with the Terrestrial Corporates, and there is a dark side to these people.”

“All they think about is imminent bill-fold.”

“Yes. So it might get bad before it gets good.” Tom sees Dorothy deflate and look sad. “Sorry if that’s not the answer you wanted.”

“What is, is,” she says contemplatively.

“Will you see Sascha again?”

“I have just bombed the institution that she was thoroughly dug into. And I had her carry the bomb. I don’t know if she’ll forgive me for that.”

Dorothy looks down at her hands. “I have to go for a minute,” she says, quietly.

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Tom watches her depart the room, curious about her mood. He resumes his meal of mackerel and flying fish pate, consumed by his own thoughts.

When Dorothy returns, she is wearing makeup and Plumeside Perfume. She sits on the end of the bed, and waits until she has Tom's full attention. She clears her throat and sings a single verse, one of Billy's knock-offs of a Terrestrial song. This one adapted from John Denver's *Casey's Last Stand*. She sings, "Oh, she said. I put on fresh lip-fish just to please you." She tears-up as she sings this.

"You're wearing *Lipfish*?" Tom asks, quietly. He's never seen her made-up before. Dorothy has a pretty but plain, girlish features, pale lips, blonde eye-brows. She doesn't stand out. But now, with marine make-up, she has emphasised the contours of her face, and it makes her appear stronger, more mature. It is as though a girl has transformed into a woman with a few milligrams of make-up. "You are wearing *Lipfish*?" Tom chuckles, taken aback by the transformation.

Lipfish is the Plumeside version of lipstick. It is a far superior make-up. Whereas lipstick is made of toxic, non-renewable petroleum

oil, *Lipfish* is made from the surface material of fish scales, mixed into an alginate emulsion. It is very thinly applied to the lips or other parts of the body. Rather than being one hue, *Lipfish* has the iridescence of a rainbow. The many colours shift and waft with the slightest movement or adjustment to the light. The intense colours of fish is not due to pigments, but the physical shape of the crystals in the outer surface of the scales that trap, reflect and refract various wavelengths of light.

If taken Terrestrial, *Lipfish* would likely be worth billions. But this is one Plumeside technology that Tom has deliberately kept hidden from the company, concerned that they would license it to a major in the cosmetic industry, dominate the market, jack the price up to maximise the profit at the expense of the people wore it, and probably torture small animals testing it. Better that Plumeside controls the market and takes it directly to the customer without the need for all the rent-seeking middlemen. He hasn't even told Sascha about *Lipfish*.

Dorothy blushes, noticing Tom looking at her. "I just want you to know that there is a woman Plumeside who likes you."

The Plume

“I know. It is sweet. Thank you.”

Emboldened, Dorothy continues, “I think that it is good what you did to Sascha.”

“Really,” Tom chuckles. “What is that exactly?”

“I mean really, Tom.”

“What?”

Dorothy becomes animated as she winds up, “Well, what kind of a woman is it that spends all day strutting around in her ridiculous high-heels with a Gucci handbag over her arm, staring into her purse, counting her credit cards? I mean, really Tom. And meanwhile, the *Plito* and *Zoop* are getting boiled under climate change. I glad you dumped her. I really am.”

“Ummm, Dorothy. I didn’t dump her. And she didn’t dump me. We just had a pretty brutal business dealing. She is still my fiancée. So, you are talking about my future wife.”

“Oh, really? I thought the wedding was off.”

“No. That’s not the case. Not necessarily.”

Dorothy looks at her hands, unsure what to say.

“You’ve popped out, by the way.”

“Oh, sorry,” Dorothy adjusts her bikini to cover the exposed flesh.

“Your affections are very sweet, Dorothy, but I am not emotionally available at this moment.”

“At this moment?” she asks, emphasising the ‘this’.

“I mean I am not emotionally available.”
Damn, he thinks. These Plumer women.
Once they get an idea in their heads...

Bait Fish

Late next morning, Tom has reconciled himself with his actions and he steps on deck into the sunlight and quickly finds himself under the brooding glare of Dan. Dan is feeling mightily pissed that he hasn't been kept in the loop and he wants a proper briefing, one on one, and that requires privacy. He points into the distance and tells Tom, "There's a bait-ball a mile out. You coming?"

On the horizon large flock of seabirds can be seen like a distant cloud. Just visible is a vertical motion as the birds drop from the sky crashing through the water surface and plunging into a huge congregation of fish that are bunched together trying to escape an ocean full of predators.

"Sure," Tom says. "Let's have a splash."

Dan drags two Solarpunts from the rack and lowers them over the side of the pontoon. The Solapunt is a flat-bottomed vessel with solar PV modules on the upper surface and an inbuilt battery and electric motor. It is a simple craft with nothing more than a flat deck and a storage bin in which

there is snorkelling gear, water, and often a bottle of Kelp Wine.

Standing, holding onto a bow rope, the two men speed across the surface of the Indian ocean at 15 knots. The electric motor is silent, so it does not disturb the intense pack of marine life that becomes visible as a huge dark patch beneath the surface. This is beyond the periphery of the Plume, so the sea is not clouded with *Plito* and *Zoop*; the water is crystal clear and deep, deep blue. Dan pulls the Solapunt to a halt over the top of the bait ball.

The sea erupts around them as predatory fish slam the surface in pursuit of the fleeing sardines. Seabirds plummet from the sky either side of the punt, some coming within inches of the boat. The pointy bills of marlin slice through the water as the big fish plunder the hapless school of sardine. Deeper shadows move at depth as Minke whales, surprisingly swift for such big animals, zoom through the underside of the school, their huge mouths open.

Tom and Dan don mask and snorkel, and with the Solarpunt left to drift, they slide into the sea.

The Plume

Beneath the surface it is madness. A million sardines swirl into a tight pack, a boiling mass of fish harried by a dozen striped marlin with long, pointy bills that slice through the water like rapiers. The marlin are big fish with pale flanks and dark blue stripes. They have big eyes, long fins, and move so fast that it is hard to keep track of them. They dart into the dense pack of sardines, sending a smaller ball of fish out on their own where they are remorselessly picked off, one by one. A marlin comes so close to Tom that he feels the water swirl around him. This is no place for the faint-hearted, as the marlin's bill is sharp and strong, the fish could kill a man without trying.

Clinging to the flesh of the marlin are remora suckerfish that flap left and right as the billfish swoosh through the water.

Tom takes a breath, then dives down three meters to be fully immersed in the experience. All around, the sardines swim, casting him in shadow. The water is punctuated by seabirds, gannets, falling from the sky, their wings tucked back, a plume of water bubbles following them. When the sardines are shallow, the gannets chase after

them, propelling themselves with their webbed feet. Where the sardines are deep, the gannets dive from higher, their slipstream trails extending into the blue. The sardines don't stand a chance.

Beneath the ball of fish, there is a sparkling cloud of scales slowly descending.

After fifteen minutes of this exhilarating experience, the bait ball disperses and the fish swim away from this patch of ocean, to reconvene somewhere else.

Tom and Dan clamber aboard the Solar Punts, their hearts racing. They sit with their legs dangling in the water, excitedly recounting the most intense parts of the experience, particularly when the marlin came close by. Then they fall into silence, drifting on the warm Indian Ocean.

Finally Dan says, "So do you want to tell me what the f**k is going on, Tom?"

"I did it."

"You did what?"

"I delivered the Declaration of Independence."

"I thought that you were going to negotiate first?"

"I tried that failed strategy."

"Who did you deliver it to?"

“CEO-UTC.”

“So the wedding’s off then.”

“I think so.”

“So, we are sovereign, now, right?”

“Yep. The Drifting Sovereign States of Plumetopia.”

“Is that Sovereign State, or Sovereign States, plural?”

“States, plural.”

“Good lad,” says Dan with conviction.

“Good lad. So what do we do now?”

“Huh?”

There is silence, and then Dan says, “You do have a plan, don’t you?”

“*Fucking turtle-fucker!*” thinks Tom, exasperated. “Plan. What plan?”

He glances around the horizon, looking for an answer in the first of the Drifting Sovereign States of Plumetopia. It’s a kilometre distant, and the nation lies very close to sea level, so it’s easy to miss. His heart raises as Sacha’s joke comes to mind, “*It hasn’t sunk, has it?*” He forces himself to think rationally. There it is, in the distance, a thin smear on the horizon, the new-found nation of Plumetopia.

“There is a plan of sorts,” Tom says, at length. “Dorothy’s working on it.”

Dan makes a sinister laugh that causes the punt to rock in the water. The laughter is infectious and soon Tom is laughing too. What else is there to do?

“We should probably have a Plume Party. Celebrate it,” says Dan.

“Shark-yeah!”

Plume Party

A Plume Party is an event not to be missed. There is about two weeks of planning. Costumes to be made. New batches of Kelp Wine to be brewed. Games to be invented for the night. Production schedules need to be adjusted to accommodate the time and effort need to plan and implement the events – and to recuperate. On the night, two hundred close friends let rip. Kelp Wine, Extract of Echinoderm, the best – the very best of the seafood – all this is consumed in a night of pleasure, a peak experience like no other.

Throughout the night Tom is pestered with questions about Sovereignty. Dorothy, Dan and Billy are all sworn to secrecy, and so has no idea where the rumour sprang from. With that said, sovereignty for the Plumers has been discussed from the beginning.

As the party rages, Tom stands back, and thinks everything through. Dorothy has been busy on the internet, researching micronations. This is the keyword to describe what Tom has set in motion. There's a micronation in UK waters, just outside the 12 mile line. Its an old military installation

that was abandoned and then occupied by a businessman in the 1970s who proclaimed it a sovereign nation called Sealand. There is also a vibrant seasteading movement of folks who want to establish settlements at sea, but they are bedevilled by complexities. Tom's advantage is that the Plume generates revenue, lots of it. Cold hard cash. Dorothy has been hard at work there too.

A young Plumer woman in a sequined bikini approaches, "Hi, Tom. I'm Carly. I work dispatch for pelagics. Can I talk to you?"

"Sure Carly, how are you going?"

"I'm awesome. Tom, the regular orders have ceased, and we are out of capacity in the cold stores. I can't get much sense out of Dorothy. Is there a problem I should know about?"

"We are getting new buyers," Tom says, thinking hard about how to provide a satisfactory answer without going into the details. "We are looking for a better price."

Carly seems confused. "Wouldn't you get the new buyer before dissing the old one?"

"Sometimes, Carly. Sometimes. Is there something else?"

The Plume

Carly departs, and Tom curses. The truth of the matter is that within days of declaring sovereignty, all of the firms that purchased the Plume's product had cancelled their orders; no doubt on the behest of UTC. This was not an immediate problem given that the Plume was self-sufficient for food and water and could make its own fuel and many of the materials needed to keep the operations going. But it would not be long before some mission critical item was needed that could only be source from Terrestrial, and then they would need a bank account. And what a drama it was getting a bank account when you don't come from a recognised nation. Tom had stood with Dan in the doorway listening to Dorothy argue the case with a Kenyan bank manager. He had said, "I am looking at a list of nations. I see Phillipines and Poland, but no Plumetopia in-between."

The work around was to trade in cryptocurrency. Fortunately, there were a few Plumers versed in the blockchain, and there were some seafood purchasers prepared to trade in crypto.

"Hi Tom." It's Broce, the Kelp Cutter.

"Hey Broce."

"Great party, hey?"

“Yeah. It’s good. What’s up?”

Tom wakes in his bunk, draws a deep breath and exhales. “What a night”, he thinks. He tries to remember the last memory of the event. Something about Dan with a Plumer woman on his shoulders, splashing together. It was glass-out for a while and one of the New-Plumers slipped over the side, and nearly drowned. “*What happened to him?*” That’s right. He was revived. And then he danced, enlightened from his near-death experience.

Tom is alerted to a sensation behind him. He turns to see Dorothy in his bed. She wears a bashful look, seemingly prepared for Tom’s look of astonishment.

“Thanks,” she says.

“*Ummm*. Thanks for what?”

“Being kind.”

“*Ummm*. Right. The last thing I remember was Dan splashing with a mermaid on his shoulders.”

“Oh, that was early in the night,” says Dorothy.

“*Uh-huh?* Is there anything you and I need to talk about?”

The Plume

“No. I think we are all good.” Dorothy leans forward, places a kiss on Tom’s cheek, then steps out of the bed, naked. In the doorway, she turns, winks at Tom, and then moves on. She’s wearing lipfish again.

The Grey Ship

Days later Tom wakes from a torrid sleep., and lays on his bunk, breathing heavily, staring at a spot on the ceiling. A phrase rattles through his head, an amalgam of what he has heard from the late-consultant Bennet and Sascha: *“You can’t just steal fifty million dollars-worth of infrastructure from a Singapore public company without a serious repercussion.”*

Tom steps out of the cabin with an ominous feeling that the trouble has already arrived. Two miles distant is a grey ship, hove to.

Later, laying on the roof of the mess hall, squinting through binoculars, Tom and Dan study the vessel intently.

“I see zodiacs being offloaded with that deck crane,” Tom murmurs.

“Yep. I see it. Four.”

“I think five.”

“Up she goes. Make that six.”

“Who do you reckon they are?” Tom asks.

“Men with guns.”

“Planning to do what?”

“Shoot us.”

“Nah. Who’d do the work.”

The Plume

“I’d don’t mean shoot us all. I meant just you and me.”

“*Abhh*. That narrows it down a bit.” Tom muses, “Private security contractors. Hired by the company to recover stolen goods.”

“Stolen goods, my arse!” snaps Dan. “These are nationalised assets. Get your euphemisms right, Tom.”

“Good point. How many men, do you reckon?”

“Six zodiacs. Say six men apiece. That’s what? Thirty?”

“What?”

“Thirty something. Ask Dorothy.”

They both laugh.

“Armed, you reckon?”

“They could be mercenaries fresh out of Afghanistan. They’ll have all the toys. But hey, maybe they’re not here for us.”

“What do you mean?” Tom asks.

“They might just be here for you.”

“Funny. Whoever they are here for, I’d say they’ll launching at nautical twilight tomorrow morning.”

“What do we tell the crew?”

“I don’t know. If these guys come aboard with automatic weapons on orders to take control of Plume, then telling everyone to

resist will just end up with Plumers getting shot.”

“Let’s sabotage it. Smack it tonight. Witching hour,” says Dan.

Tom thinks it through, nodding gravely.

“First, I want to address the crew. Call a general assembly in the Upwell. One hour from now.”

“Might be time to tell them we went sovereign.”

“I think so.”

“Get in there, Tom. rally the troops so they are happy to die for their country.”

“Nicely put. F**k you,” growls Tom.

Dan slips away and when he has gone, Tom rests his face against his arms and tries to will away the cramps in his stomach. What will happen? Almost certainly there will be violence. A clash of wills. People hurt. Killed, maybe. And all because of him, and his impatience.

“I am not the enemy,” Tom growls, feeling anger rise. He shuffles over to the edge of the roof and sees Billy. He whistles and beckons the young Plumer to join him. When Billy rests by his side, Tom hands over the binoculars. “We’ve got guests, mate.”

“Who are these guys?”

The Plume

“They’ve got six zodiacs tied-up out of sight. They are due-East of us, so their ship will have the sun behind it at sunrise. We might get our asses kicked in the morning. You up for that?”

“If it’s good for the Dow, I’ll do it.” Billy glances across. “Is it good for the Dow, Tom?”

Good question. Tom could ponder that for a month. He resolves it quickly, “It’s good for the Dow, Billy.”

“Then I’m up for getting my ass kicked. Or better still kicking some ass. Is that an option?”

“I’m not sure, yet.”

“What do you want me to do?”

“Be my eyes.” Tom hands over a radio. “Call in every 15 minutes. If there’s no movement, say a shark’s name in Latin. If there’s movement, call straightaway and say a whale.”

Dan climbs down from the roof and sees Dorothy. She wears a concerned look. He wants her somewhere safe. “I need you to do something.”

“What’s with that grey boat?”

“Not sure yet. I want you to get on the inter-web and identify that ship. I want to see

pictures. Plans. Photos of the underwater surfaces. Give me anything you can get. It was likely chartered out of Singapore. When you've got it, tell Billy."

"Where's Billy?"

"He's on the roof."

"On the-- Tom. Are we in trouble?"

Suddenly, for Tom, it becomes real. Hairs come up on his arm, like they do when you see *Longimanus* turn towards you. Another woman who cares for him thrown in the path of danger in his hurried pursuit of the Dow. He takes Dorothy by the temple and places a kiss on her forehead. He wants to tell her that everything will be okay, but he knows that Plumers might be killed at sunrise. Or beaten. Or arrested. He has to steel himself from his doubt. Or cave in. "This is the Dow, Dorothy. This is our path now."

"If it is, it is," Dorothy says. She kisses him back, on the mouth, leaving a faint trace of lipfish.

The Upwell Speech

Wearing just cargo shorts, Tom steps onto a solapunt and turns it towards the mouth of the Upwell Pump. He drives slowly along the rows of kelp that wave back and forth on the water surface. The warm air is humid, the sun lowering as it heads towards the Western horizon. Ahead he sees the infrastructure around the mouth of the Upwell Pump. There is a circle of pontoons used for servicing the mariculture facilities, the nets and pens use for cultivating a myriad species of marine life. Here conditions are stable, temperature and nutrient delivered by the steady stream of cool, deep ocean water, the Deep Ocean Water, the DOW from which comes the Dow, the way, the path forward for humanity.

The open tube of the Upwelling Pump is twenty meters in diameter and set just below the surface. Water pulses from the open tube, rising and falling like a heartbeat. The wall thickness of the tube is half a meter, and sitting on the edge, or treading water inside the tube, are two hundred Plumers. All fit, all tanned, all healthy. These are the people who came and stayed. They are evenly split

between males and females and middle genders. Black skin, white skin. Every skin-shade in between. A grab-bag of humanity. The commonality between them is that they all answered a call to help rescue the biosphere from collapse.

Tom manoeuvres the Solarpunt into the middle of the upwelling. Here, the air is cool and the deep ocean water has a salty aroma. He slowly drives in a circle, looking at each of the Plumers in turn. He sees in them a new class of human, humans who understand and care for the natural living systems of the home planet; a breed of people who are not distracted by the cheap tricks or petty possessions of consumer society. This is a breed of people whose philosophy, spirituality, religion and culture are aligned with *Imperium Vita-Planeta*, the Empire of the Living Planet. Tom did not train these people, he simply provided a habitat suited to their needs. Then they came on their own free will, and stayed.

“Lagom!” Tom calls-out and two hundred Plumers return the call.

“Lagom!!”

The Plume

He projects his voice so that all can hear him as he continues to drive a circle in the middle of the upwelling.

“One thousand miles from here is a civilization that has not been civil with the Living Planet. Humans have plundered the biosphere, and now the global ecosystem is on the verge of collapse. Any day now, scientists will announce a Arctic Blue Ocean Event and the terminal meltdown of Terrestrial Civilization will begin.”

Tom looks into the eyes of the Plumers. There are aged from twenties to seventies, but there a few younger ones, too. It's the younger ones he feels for the most. They haven't lived yet.

“This place, an oasis in the middle of the ocean, is a solution to Terrestrial Civilisation. Here, we create life. Here we create new materials. Here, we create sustainability. But for us to intervene in the collapse of civilization, we need to scale. One Upwelling Pump becomes two. Two becomes four. Four becomes Eight. After just 18 iterations, we'll have filled the desert area of the Indian Ocean with new life. But to do that we need to grow the Upwell Pumps out of marine life, and not make them from plastic,

concrete and steel, like this clumsy prototype.

“One month ago, the Terrestrial Corporates who have help to get us this far made it clear that they no longer share this vision. So, I made the call that I know many of you have long hoped for.

“I delivered the Declaration of Independence for the Drifting Free States of Plumetopia! We are nation!”

The crowd erupts with the resounding sound of two hundred Plumers cheering. They throw their hands in the air, splash the water with their feet.

With a fixed smile, Tom watches the Plumers, but inside, his gut is tight. He raises his hand to settle the crowd and continues to drive in a circle until everyone is hushed.

“This new freedom comes with a grave new responsibility. We do not have friends in powerful places any more. And already, the forces who oppose us have gathered on the horizon. East of here, a hostile vessel waits for dawn.

We believe this to be an invasion force that seeks to bend our resolve, to steal what we have built and rightfully declared our own.

The Plume

I cannot say whether or how we fight. But I trust in the Hivemind. Be alert. Once this menace is dealt with, we will celebrate our new nation. But first we prepare for war.

We bring the Dow into the light. And that light will not be switched off.”

Tom thrusts his fist into the air and shouts, “*Viva Plumtopia! Viva Pumetopia! Viva Plumetopia!*”

Two hundred Plumers respond in kind, shouting out “*Viva Plumetopia!*”

Tom makes one more circle of his crew, looking each in the eyes as he passes, then he turns the punt towards his pontoon and drives out of the upwelling and through the kelp farm. As soon as he is away from the crowd, his fixed smile slips, and a grim worried look comes over his face. He pulls his forearm across his aching belly.

Soldiers Come At Dawn

The soldiers come at dawn, but not from the East. Instead, the zodiacs surround the Plume and come in from all angles. The black zodiacs arrive simultaneously and from each vessel four men dressed in black combat gear and carrying MP5 submachine guns. They take command of Plumetopia quickly, storming the pontoons, shouting, shooting into the air. As the assault begins, some Plumers execute a crafted plan and dive over the side and take shelter in the air pockets under the pontoon. Others hide out amongst the kelp and the complex of mariculture infrastructure. These people become a *de facto* rebel army, on standby.

The soldiers are disciplined, following their own scripted plan. In no time all the Plumers who remain on the pontoon are under arrest. For the most part the arrest of the Plumers happens without incident, but a few who react badly to being herded around get slapped around by the soldiers.

Tom and Dan wait in the mess-room. Dan twitches, wanting to do violence to the first soldier who comes through the door but

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Tom places his palm over Dan's forearm, and says quietly, "What is, is."

"Until 'is' changes," Dan growls. "Then 'is' becomes something else."

The door opens and three armed men burst through the door.

"I'm Tom Cove. I am the leader here."

The lead soldier wears tactical gear and an insignia with the words: Storm Front Security.

Tom is instructed to sit. Another soldier searches the building and returns with Dorothy and Billy. Dorothy looks terrified. She sits next to Dan and grips his hand.

"It's okay, relax," Tom strokes her forearm and feels her calm.

The first soldier speaks into his radio, saying that they have the remaining four Plumers under arrest. Shortly, the leader of the mercenary unit arrives. He's a gruff, tough looking guy, not much of a conversationalist.

He explains to Tom in simple words, "We have your facility under our command. Any attempts to fight or escape could lead injury or death. You understand?"

"Of course. And what are you here for?"

“We are facilitating a change of management and key staff. I need a manifest of all people on the facility.

Tom addresses Billy, “Get the manifest.”

Now, as it happens, part of the war planning was to edit the manifest and remove the names of the people who were in hiding. Another part of the war planning was to strike back against the interlopers and send them all to the Abyss.

Tom Escapes

Tom is confined to his quarters and paces around anxious that Plumetopia's sovereignty has been so quickly snuffed out. He is reminded of a conversation with Dorothy. "I had a quick look," she said. "There is a Wikipedia page with a list of dozens of micronations." But a week or so passed before Tom finally got to see that list, and what a list it was. A list of crackpots, dreamers, and other hapless folk who thought that by announcing themselves Kings and Presidents, all of life's problems would go away. The one that resonates in Tom's head is the micronation of *New Atlantis*, a floating barge proclaimed as a sovereign republic, that was destroyed by storms shortly after establishment.

Tom is distracted from his thoughts by a movement on the ground, and he sees a screw that holds down the floor plate rotate and rise. It rises its full height out of its hole then falls onto the deck. Seconds later, another screw begins to turn. Then another and another. Then the edge of the deck plate rises, and Tom sees young Broce peering at him from under the floor.

Tom gives the thumbs up, retrieves the four screws and puts them in his pocket. He glances through the small window and sees that the guard has his back to the door.

Tom adjusts the bedsheets to make it look as though he were asleep under them. Then he slips into the subfloor with Broce. It is a tight squeeze and after a long, quiet crawl, he exits the subfloor onto the outside deck, into the dark of night.

“Excellent work, Broce,” Tom whispers.

“How’s everyone holding up?”

“They are all ready to go.”

“Good work.” Tom slips quietly into the water.

Rise the Pump

Tom swims under the pontoon to the inside waters. He hyperventilates quietly next to the edge, then submerges and swims as far as he can towards the middle. Soon, he is hidden by the kelp and makes his way quietly to the pontoon adjacent to the upwelling pipe.

Here, there is a utility shed. Tom slips inside and dries off. He sits in-front of the computer terminal that controls the Upwelling Pump. Every six months, the full length of the Upwelling Pump is brought to the surface for cleaning, repairs and maintenance. This is achieved by filling air bladders along the length of the tube. It rises, and is then allowed to gently lay over. Because it is so long, this necessitate splitting the outer pontoon into two, so the pipe can lay in between the two halves. It's a big job that takes a full week to execute and requiring all the kelp and mariculture infrastructure to be disconnected.

Tom sets up a series of commands in the computer, commencing with inflating the bladders using energy from the battery.

When the batteries run flat, the kelpetrol generators will kick-in.

The electric motor whines into life, pumping air deep down the tubes that run down the side of the Upwell Pump.

Tom steps onto the deck of the pontoon and sees that the air pumps are having effect already.

The black plastic trim of the Upwell Pump rises two meters above the water surface. As more air is pumped down into the flotation bladders, the pipe rises higher into the air.

It is a dark, cloudless night and Moonless night, and the pipe is partially visible in the starlight. Fine, filamentous algae that has been nibbled short by forage fish coats the surface of the tube. It rises, round, and vast, glistening like green, wet leather. Meter by meter the tube ascends until it is five meters, six meters, ten meters above the surface of the water.

Tom wonders whether the pump is visible from the main pontoon, and how long before the interlopers realise that the Plumers are prepping to fight back. He concludes that is not visible except that as it rises, it will block out their view of the stars in that patch of the sky.

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He returns to the computer to check the settings. Raising the Upwell Pump has only happened twice, before. The first time was a nightmare of learning how to bring the 350 metre long, 20-meter diameter tube to the surface without wrecking everything. The ‘Tip’ that was the hardest part, the point at which the vertical section of the tube, towering above the sea, laid over and the lower section rose to the surface. When that happened, there was a distinctive noise that reverberated across the whole infrastructure. A gurgling noise, a groan and then a loud WOOSH! as the 1,000-ton tube settled itself horizontally.

Tom thinks through the plan, convinced it is sound, or at least as sound as it can be given the endless sea of unknowns. He slips into the water and swims back the main pontoon.

Rules of Engagement

So, it turns out, the rules of engagement for Storm Front Security is to keep the Plumers under arrest until the board decides what to do with them. There is nothing in those rules that say the soldiers can't have a bit of fun. The Plumers are, after-all free spirited, fun-loving people and the girls get around in bikinis. There is lashing of kelp wine, and they are outdoors, a long way from authority. So long as the soldiers keep their guns close to hand, security will be maintained. At least, that is what the soldiers are lulled into thinking by the jokes and jests and provocations of the Plumers.

The Plumers are civil guests and share their food with the interlopers. But what the soldiers don't know is that the meals are laced with small amounts of Extract of Echinoderm. This is extracted from sea urchins, and it has an effect not dissimilar to a cocktail of ecstasy, steroids and magic mushrooms. New Plumers are encouraged to build up an immunity to it. The first time you drink a full measure, it knocks your socks off (and rightly so, you shouldn't be wearing socks, Plumeside). First timers end

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up crawling on the floor pretending they are crabs and babbling incoherently. However, the fiftieth time you drink it, you barely feel a thing although you are prone to laugh at things that aren't that funny. It's one way to tell a Plumer from a non-Plumer, lace their drink with a dose of Extract of Echinoderm, sit back and watch. Now, the soldiers are not being given a full dose. There is no way to inebriate them all simultaneously. And no one wants to see a soldier strafing the Plumers with his MP5 after some of his buddies crawling on the floor in a deranged state. Better to dope the interlopers bit by bit.

Pipe Rise

Tom makes his way around the facility in the water, in the shadow of the edge of the pontoon. He meets his hidden army and checks on their preparedness. As planned, they are stationed where they can observe the interlopers, unobserved, ready to strike when the time is right.

As Tom makes his rounds, the pipe continues to rise from the sea. Last time the pipe was risen, it took a week to move all the seaweed infrastructure, so that it didn't snag. Not so, this time. Now, as the pipe rises, it snags a rope covered in kelp and this, too rises from the sea. The rope is pulled and all the ropes attached to it move, too. As a result, the whole algae farm seems to shift, heading towards the centre of the soup bowl, drawn inexorably upwards by the rising pipe.

As the upper section continues to rise out of the water, it starts to lean over, pivoting around a central point. As it does so, the lower portion moves closer to the surface and the top of the Voat appears, all snagged around the macro-algae infrastructure. From the surface there appears a confused tangle of shiny material, thousands upon thousands

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of long, slippery kelp blades all wrapped up in lengths of kelp rope. As the Voat blade rises, more and more of the cultivated seaweed comes into view looking like an enormous wet monster with wet leather for hair. It is at once terrifying and amazing.

As the tube leans over, its pace increases. The stresses increase with more and more seaweed being dragged from the sea that the kelp ropes snap, making a wet popping noise and the distinctive ‘sloop’ as tonnes of kelp falls into the sea.

Just then, the batteries on the air pumps run flat and the generator comes into life. The noise of the exhaust hammers out, muffled by the sound of the wet kelp. It is a haunting moan, punctuated by the snapping of ropes and the sloop of falling kelp.

Triple Splash

How do fish school. How do they turn so precisely, as though they all had the same internal metronome to keep time to. The term they use is heuristic, a sort of rule of thumb (or rule of fin, in the case of fish). The Plumers have not been instructed to act at a certain time or with respect to a certain activity, but across the whole crew, there is a growing expectation that the time to strike is close. The Plumers are all fit. They spend much of their days in physical exercise at work and play. A lot of that play is play fighting. They are all trained to defend themselves and their fellow Plumers.

All hot-Plumers are committed to kill Terrestrials who threaten their way of life. It happens rarely, but when it does, it is not something over which they shed a tear. It's just like cutting the throat of a spanish mackerel: it's fatal, sometimes bloody, but otherwise, just par for the course.

The uninvited soldiers don't realise that at all times they are being watched, and attack plans are being constantly revised and silently communicated with nods and winks. All that is needed is the cue. No one knows what the

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cue is, but when it comes, it will be known –
hivemind - to all at once.

While the soldiers think that the Plumers rolled-over easily, that they could not be thought of as a threat, the truth was very different. The reason that they were passive is because they were biding time, waiting for the right moment.

The Tipping Point

A soldier steps out of a building where there a party rages. He doesn't know it, but he is stoned on Extract of Echinoderm. He moves to the edge of the pontoon and fumbles with his fly, but before he can relieve himself, he looks up in the direction of the growling, creaking noise and sees, towering in the air, the Upwell Pump all bedraggled with kelp. Not only that, it is falling towards him.

The soldier tries to scream, but he is so terrified that his mouth dries up and the best he can do is to gurgle the word, "Triffid!"

He raises his MP5 machine gun and empties the full thirty rounds. The noise of the gunfire shatters the night air and instantly throws the Plumers into action. Within a second, two Plumers rush the soldier, one grasping him around the upper body, immobilizing the arms, the other immobilizing the legs. The momentum of the rushing Plumers pushes all three into the sea. Under the water, the two Plumers cling to the victim, holding their breath, conserving their oxygen, and patiently wait for the bad-guy to drown. Across the

The Plume

Plumeside five more soldiers are so drowned.

The pipe continues to tip and a distinctive growling, grumbling noise ripples through the facility. The Plumers have heard this before. They know what comes next.

The two who drowned the Triffid guy, rise to the surface with his gun and clips of ammunition. One sprints to a high place and scopes for interlopers. Within the space of a minute he has shot five more Stormfront Security dead.

A thought experiment by the famous military strategist *von Clausewitz* has one consider which side would win a battle if both sides were equally matched. Imagine for a moment team red squaring off against team blue, with both parties having the same benefit in training, fitness, manpower and weapons. Of course no such battle could exist, but it's a thought experiment. According to von Clausewitz, the side that would prevail is the side with the highest amount of 'righteous fury' or higher purpose - spirituality. Imagine that the battle took place on Team Red's territory, then they would have a psychological advantage, in that they were defending their homeland.

And so it is with the Plumers versus the mercenaries from Storm Front Security. Certainly, the mercenaries are armed with automatic weapons and enough bullets to kill the Plumers ten times over. Plus, they are highly coordinated, following instructions from above. That said, their supply vessel is miles away, now out of site, and drifting, unable to start its main engines and soon to lose power to its communication devices as the batteries run flat because the auxiliary motor ceased when the cooling water stopped flowing. On the other side of the battle line, the Plumers, or Team Kelp, if you will, out-number the mercenaries ten to one, but they are unarmed. That said, they are immune to Extract of Echinoderm and all the food and booze has been doped with the stuff from the moment that Storm Front Stepped aboard. So let's assume for a moment that Team Terrestrial and Team Kelp are evenly matched. Who will win the battle? According to von Clausewitz's hypothesis, it will be Team Kelp because they are not only defending their turf, they are also defending their utopian dream, their life style and most importantly, their spiritual values. If Team Terrestrial loses the battle,

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they go back to Terra from where they came. If Team Kelp loses the battle, they will be forced back to Terra, from where they escaped.

It's a big difference. And the truth of the matter is that the mercenaries never stood a chance.

Petition the UN

After the battle is won, Tom finds his way to his pontoon. He opens the door to the Command Centre and sees one soldier dead on the floor, his neck broken. Another is being strangled by Dan.

“You okay, Dan?”

“Living the dream, Tom. Living the dream.”

Tom moves past, to the hallway, and lifts the hatch to a hidden room that only a few people now about.

Tom steps down into the air-conditioned office below sea level. There is a computer workstation in there, communications gear, a bunk, and enough rations to last a month.

“I think I know how to do it,” Dorothy says, looking up from a computer.

“To get recognised by the UN?”

“No, Tom. That’s not going to happen. I think I know how to make it look like we are on our way to getting recognised.

“That’s kind of the same thing, really.”

Tom seats himself, and studies Dorothy with interest. She’s made up again with lipfish on her lips, eyelids, and dashed across her cheeks. A little piece of red seaweed is

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twisted in her hair, and her earrings are made of dried seahorse. She's wearing Plito perfume, a concoction of her own making.

A noise from upstairs suggests that Dan has forced his soldier into a death rattle. Dorothy looks at the ceiling, quizzically. "Is everything okay, up there?"

"Ummm."

"And what was that wave big?"

Another noise from upstairs. Something falling to the floor.

Dorothy stands. She looks toward the ceiling curious.

"So, Dorothy." Tom ushers her to sit.

"Yes?"

"Keep going with this, you're doing a great job. I'll come and get you later, when all the noise has stopped."

Sixteen Strings

When the battle is over, which is to say when the interlopers are killed or disarmed, five captured mercenaries are rounded up and lashed together under the sequestration kelp hopper.

They sit in a circle, hands tied behind their backs, naked. They don't know it, but above their heads are five tons of damp kelp.

Tom ushers Broce to approach, and asks. "What's the tally?"

"Thirty-six men invaded our nation, Tom. We have twenty-nine bodies. Two bodies were seen drifting on the sea-side. And we have five under arrest, here."

"And the ship?"

Broce points at the horizon, "Ten miles distant. Drifting West at two knots. It will probably get caught in the gyre, pretty much for ever."

"And our losses?"

"We lost twelve. Times two wounded."

Tom pats the young kelp cutter on the back. "Thank you. And what do you think we do with these prisoners?"

"I don't want to express an opinion."

The Plume

“And why not? I heard that you triple-splashed two of them.”

“Yeah. That’s when they were a threat to Plumetopia. They’re not now. I don’t know all of the pieces of the equation, Tom.”

“What equation?”

“We are sovereign now. So, the Geneva Convention applies, doesn’t it? Prisoners of war. All that stuff.”

“Good point,” thinks Tom. Maybe he should ask Dorothy. Or maybe not. Besides, where are they going to find a lawyer in the middle of the ocean? Heck, the idea of being in the middle of the ocean was to get away from all that stuff.

Tom rests on his haunches and peers at the mercenaries. “What are we to do with you all?”

“Send them to the Abyss,” growls Dan.

“There’s that. Or we let them go.”

“If we let them go, they could come back,” Dan growls. “They know us now.”

“We’ll use the Hivemind Actuator,” says Tom. “Let the community decide.”

The Hivemind Actuator is an invention of Tom’s: a physical device that converts the intention of two hundred people into a single action. It consists of a metal tube with a

mechanism inside, and 200 cords protruding from the end. Each cord is passed to a Plumer who stands in a circle with their backs to the prisoners. They pull the string to register a 'yea vote, or let the string slip through their fingers to register a 'nae' vote. Depending on how the Actuator is set, the lever activates based on a majority or consensus.

Dan attaches the Hivehind Actuator to the lever on the sequestration kelp vat.

"What are the odds?" asks Tom to the Plumers. The results are inconclusive. Some want the Abyssal treatment no matter what, others want a chance for leniency.

"Three quarters majority," calls one.

"Fifty-one to forty-nine."

"One percent," says another Plumer with murderous intent.

Dan adjusts the device and tells Tom, "I've set it to two thirds majority."

Tom addresses the Plumers, "The Hivemind actuator is set to two thirds majority. If two thirds of the Plumers present pull the cord, then these interlopers who have killed fifteen of our people and maimed many more on behalf of the Terrestrial Corporates, will be sent to the

The Plume

Abyss. Plumers, ours is a rare community not just because we live at sea, but because we are wise, informed and conscious of our own existence. If you pull that string, and enough of you do likewise, you will have knowingly participated in the death of five unarmed human beings. Dan, I want you to oversee proceedings.”

“Righto, Plumers,” Dan barks. “Pick up a piece of string. And on my command, step forward and either pull the string or allow it to slip through your fingers. If you pull it, it is a vote to execute these five men. This is your direct line to executive decision making on the Plume.” Are you ready...?”

“Hold on, Dan! Hold on,” Tom interjects. “We’re missing something.”

“Righto Plumers! Stand down. What is it, Tom?”

“There are fifteen pieces of string that no-one is holding. The fifteen for the dead. What should we do with them?”

“Give them to Tom,” shouts Broce. Quickly, a chant sets up, a low but solid acoustic wave, “Tom. Tom. Tom. Tom. Tom.”

Dan hands the fifteen pieces of string to Tom and growls in his ear. “You might have the deciding vote, now. Don’t f**k it up.”

With sixteen votes in his hand, Tom grits his teeth as Dan resumes his countdown. He’s thinking it through. Pull the string, and maybe the last of the invaders goes away for ever. Let the string slip, and five men who came to deprive liberty from the Plume may get to live. And what to do with them, then? Let the string slip, and the 15 dead and many wounded may not be avenged.

“Okay, Plumers, on the count of three, cast your vote. One. Two. And three!”

Tom’s upper-lip curls, and adrenalin courses through his body as he pulls on the sixteen strings with all his might.

Welcome to the Plume

Weeks Later.

After five weeks of repairs, the damage to the Upwell Pump and the pontoons that were damaged is repaired and production is re-established. Dorothy sniffs out more buyers who are willing to accept crypto, in lieu of using bank accounts. Eventually, a time comes when life on the Plume is just like it was before all the trouble started.

Dorothy has submitted paperwork to the United Nations, and reminds Tom that there is zero chance that they will get recognised as a nation-state within a decade. Tom shrugs it off, “That’s fine. Plumetopia: official recognition *in-process*.”

As a measure of how normal life has become, activities resume on creating the structural biopolymers to build the next Upwelling Pump.

Tom watches as Billy and Dorothy pour water into buckets strung up with modified seaweed. It’s a match-up between TPU and the new laminated biopolymer. The buckets are 40% percent filled and the biopolymer is

still holding up. Then it gets to 41%, 42% and then the biopolymer snaps.

“Oh, Dang!” says Dorothy. “That’s a considerable improvement on last time, though.”

“42 versus 40%,” grumbles Tom.

“I reckon we redo the laminates but with a different solvent,” Dorothy suggests.

“Get onto it,” Tom says. “I’m going to check the batch of kelp.”

He climbs the ladder and slips into the vat, and squelches around in the middle, holding the metal pole. “Sometimes you just have to give the kelp a good smack to soften it up,” says Tom, wading around the vat.”

“Catalina,” calls out, Dorothy.

“What.”

“There’s a Catalina coming in.”

“Not possible.”

Tom gets out of the vat, has a quick splash and watches as the plane lands and taxis.

“Billie, you and Dan. Arm yourself and stay out of view. This could be a trap. Dorothy, go to the safe room.”

Hairs rise on Tom’s forearms and he stands his ground in the middle of the deck, staring down the plane.

The Plume

The Catalina comes alongside and the co-pilot steps onto the pontoon with a mooring rope.

“G’Day Tom,” he calls out with a friendly tone.

That all seems normal. Tom turns and waves his hands to tell his crew to stand down.

The plane pulls up, the hatch raises and the steps lower into place revealing a very noticeable woman, dressed in a most unorthodox way. She descends to the lower step, and halts. For the first time ever, Sasha has arrived Plumeside not dressed in Terrestrial corporate attire, but wearing a bikini. She has a distinctive look. A look that normally precedes Tom getting his ass kicked.

Tom is taken aback. He approaches her, uncertain of how to react. He had resigned himself to never seeing her again. He moves to kiss her, but she shoos him away, adamant to have her say, first. She stands on the

“Well, I have been most thoroughly ruined by your grand Plumeside vision,” she says dragging her over-stuffed Luis Vitton bag from inside the Catalina, and dropping it on the deck.

“I have been bankrupted, actually, Tom. I have lost all my wealth. It’s all gone, as is my career. I have been cast into rich person’s poverty to such an extent that I even had to borrow money to take this flight. A loan which I probably won’t be able to pay back unless they accept kelp in lieu of dollars, *lol*.”

The *lol* breaks the ice, and she cracks a smile, finding it hard to continue to be angry. “You’d think with all the trips I’d made to this place, I would have some frequent flyer points, but oh, no...”

“We never did do frequent flyers points,” Tom shuffles in his place, unsure what comes next.

Sascha continues, “I thought that I could rebuild, put this whole sorry episode behind me. Leave you. I was once a successful businesswoman, after all. And then I thought no, I’ll come and live here, torment you for what you did to me. And for a long time, I was conflicted. And then something extraordinary happened.”

“I think you might be off the hook,” says Dorothy.

“What happened?” Tom asks, hopefully.

“I got caught in a traffic jam.”

The Plume

“Yep, that would do it. You want to come inside?”

“Let me tell my story right here, Tom, I haven’t officially left Terrestrial, yet.” She waggles a foot, indication the last meter between the Catalina and the Plumeside deck.

“Okay.”

Dan steps into view, the MP5 slung over his shoulder.

“Hi Dan, armed.”

“Hi Sasha, bikini’d.”

“While I was stuck in the traffic jam, I listened to this extraordinary interview on the radio. You may not have heard this, but for the first time in human history, all the ice has melted in the Arctic Ocean.”

“The Blue Ocean Event.”

“And then it all just made sense. All of a sudden, you made sense, Tom. The pump made of seaweed made sense. You dumping your independence on me made sense. And for the first time, I saw the ludicrousness of Terrestrials living in a fossil-fuel powered city. And I glanced down to see that I was holding a plastic water bottle. It was like an electric shock went through me. It was horrible, Tom. Like I had disease in my hand, and I’d spent six dollars on it.”

Tom nods, “I know what you are going through, you are having ecophany. It came late for you, but I knew it would happen eventually.”

“I have been listening to you catalogue the death of the planet for years, and I always went along with it, but it never really sank in. And what I realised in that traffic jam, was that it was exactly the same traffic jam as one I was stuck in twenty years ago. The same stupid petrol-powered cars stuck in a queue with their engines running at a red light, going nowhere. The Terrestrials don’t know how to change.”

“The Terrestrials have created a system immutable to change,” Tom concurs.

“Yes. Immutable to change. And we are all imminently going to perish unless there is an intervention. And the Plume is an intervention, assuming that it can be grown, not made from the very materials and processes that caused the problem in the first place. You were right, Tom. I get it now. You were right. And thank you.”

“No, thank you.”

“Oh, and of course the other thing.”

“Which is?”

“You are probably going to sink.”

The Plume

“Sink?”

“Not literally. But to actually get away with what you have set in motion is highly unlikely. The Chairman was mightily unimpressed to learn of the loss of his ship and his tin pot army.”

“His ship?”

“Yes. It was the Chairman’s personal boat. That’s how they put to sea so quickly. I have been privy to all his personal grievances about you and his plans to bring this enterprise down.”

“*Pab!* Nothing I haven’t dealt with before.” Tom chuckles.

“Not without me.”

“So you’re back?”

“I never left, Tom. But I was always in two minds between your ways and the ways of the Terrestrial Corporates. What I realised in that traffic jam is that if any of us are to survive, we need Plumes. Lots of Plumes. So what are you doing standing there, why aren’t you *making mackerel?*”

“I don’t understand.”

“Look at me *Squid for Brains*,” Sascha draws her hands down to indicate the condition of her bikini-clad body. “Am I not a Hot-Plumer?”

“What do you reckon, Dorothy?”

“She’s sort of hot, I guess,” Dorothy says, glumly.

“Dan?”

“I’ve always reckoned that she looks smoking-hot.”

“It’s not about how she damned well looks!”

“I get it. Sure, she’s starting to talk like a Hot-Plumer. At last.”

“And how long were you planning on staying, Sascha?”

“I was hoping for residency. Maybe even citizenship.”

“Well, then,” Tom Cove, extends his hand.

Sacha steps onto the pontoon, and Tom says, “Welcome to the Floating Free States of Plumetopia.”

oOo

Glossary of Plumespeak

Blubberous:

Plumespeak for fat, something that is forbidden Plumeside, as everyone is encouraged to eat Lagom and keep fit.

Catalina:

The type of twin-engine seaplane that services the Plume from Singapore.

Cuttlebut:

Plumespeak for gossip or rumour.

Dow:

The spiritual path of Plumers.

DOW:

Deep Ocean Water, the water drawn from depth to create the Plume.

Enough to bleach your seaweed:

Plumespeak for something exasperating.

Extract of Echinoderm:

A hallucinogenic drug extracted from Sea Urchins that are cultivated Plumeside. Consuming Extract of Echinoderm is an

initiation ritual for Hot-Plumers. They are encouraged to developed immunity to the drug, and are forbidden to speak of it to Terrestrials.

Hivemind:

Plumespeak for the capacity of Plumers to be in tune with each other's thoughts.

Interloper:

Someone Plumeside who shouldn't be there.

Glass-out

A meteorological condition where the air is so still that the ocean goes completely flat, forming a mirrored surface.

Lagom:

A Viking word that means 'the right amount', enough to satisfy without wastage.

Oligo

Short for oligotropic, meaning low in nutrient. Most of the ocean surface is oligo, with low levels of photosynthesis and biological productivity.

Physe

The Plume

Short for photosynthesize, the process by which plants create materials from sunlight, water and CO₂.

Plermaid

Plumespeak for a female Plumer. Combined from Plumer and Mermaid.

Plerman

Plumespeak for a male Plumer. Combined from Plumer and Merman.

Plito

Plumespeak for phytoplankton, the tiny plants that drift in the ocean and make up the first rung in the marine food chain.

Pre-Abyssal

Plumespeak for someone who is soon to be murdered and buried at sea.

Plito:

Plumespeak for phytoplankton, the microscopic marine plants that form the base of the marine food chain.

Plumer:

Someone who works on or has dedicated their life to living on and growing Plumes.

Plumeside:

The location of the plume and associated infrastructure.

Plumespeak:

The name of the Plumers language.

Plumetopia:

One of a number of proposed names for the sovereign nation that would be declared over the Plume, when the Plumers secede from their corporate overlords.

Pre-Abyssal:

Someone who is soon to be murdered and buried at sea.

Put a squid in it:

Plumespeak for 'shut up'.

Sent to the Abyss:

Plumespeak for murdered and buried at sea.

The Plume

Shark-yeah!:

Plumespeak for YES!

Splash:

To jump into the sea and jump out again quickly for purpose of refreshment, stress release or entertainment.

Star-Flying:

The feeling of euphoria on cloudless nights with glass-out, where the stars are perfectly reflected in the sea, giving a sense of floating in space.

Stowaway:

Someone Plumeside who is uninvited.

Sploop:

The noise that kelp makes when it is dropped in kelp or water.

Terrestrial:

The land, or someone who lives on land. Often used in a pejorative sense.

The Plume:

The nutrient rich water that drifts

downstream from the mouth of the Upwelling Pump.

Triple-Splash:

A technique where two Plumers rush an interloper and drown them in the sea.

Turtle-fucker:

Plumespeak for a despicable person who ought to be sent to the Abyss.

Uninvited:

Someone Plumeside who has not received a formal invitation to arrive or stay.

Upwell Technologies Corp.:

The company that owns the Plume, all the Plumeside infrastructure and the produce of the Plume.

Upwelling Pump:

The huge tube that brings the Dow to the surface.

Warm-Plumer:

Someone who works Plumeside but hasn't committed to the vision.

The Plume

Zoop:

Plumespeak name for zooplankton, the tiny animals that drift in the ocean.

Zoop Poop:

The feces of zooplankton that sinks in the ocean, taking carbon from the surface to the depths.