

Arbour - Water & Food

In a closed system, nothing is wasted. The Verdant Branch's official documentation calls this principle "sustainable cycle integration." The Sprawl calls it something less elegant and more accurate. Both are describing the same water.

Overview

Arbour is a closed system. Every drop of water that arrived on ARBOUR|05 is still somewhere in Arbour — recycled, purified, redistributed, consumed, recycled again. Every nutrient that entered the city's biological cycle is still circulating through it. Nothing leaves. Nothing is added from outside through official channels.

This should be a miracle of engineering. In the upper tiers, it mostly is. In the Sprawl, it is the daily texture of survival.

The Verdant Branch manages both water and food infrastructure, making it one of the most powerful Branches in practical terms — whoever controls what people eat and drink controls something more fundamental than law or currency. The Branch understands this. The Council understands this. The arrangement between them is the foundation of Arbour's social control in its most basic form.

Water

Sources

Arbour draws water from three sources, in descending order of official acknowledgment:

Recycled Wastewater — Primary Source All wastewater — grey water from washing and industry, black water from sanitation, and biological matter from organic disposal including human remains — enters the recycling infrastructure. The Verdant Branch's official term for the reintegration of human remains into the water cycle is **Organic Cycle Completion**.

This is common knowledge in the Sprawl. It is not discussed in polite company in the upper tiers, though the upper tiers drink the same water. People who discover it for the first time either have a

crisis or accept it with the pragmatic shrug of someone who understands that a closed system wastes nothing. Most people, eventually, shrug. You drink the water. You don't think about it too hard. Waste not, want not.

Solar Condensers — Secondary Source Atmospheric water collectors using solar energy to pull moisture from Cordis's air. Given the twin suns and the planet's erratic climate, these should be extraordinarily productive — Cordis's atmosphere holds significant moisture content that the condensers are designed to extract efficiently.

They are not extraordinarily productive. They are partially deployed, running at miscalibrated settings that nobody has been able to correct since the engineers who understood the calibration systems died. The condensers that are running produce approximately 40% of their designed output. Several are running so far outside their intended parameters that they are net negative — consuming more energy than the water they produce is worth.

The Azure Branch has filed three reports over the past century recommending a full condenser audit and recalibration. The Verdant Branch has blocked all three on jurisdictional grounds. The actual reason is that a full audit would reveal the extent of the miscalibration, which would raise questions about why it was never corrected, which would lead to questions the Verdant Branch leadership would prefer not to answer.

Geothermal Condensation — Tertiary Source A small but reliable source. The geothermal tap systems produce steam as a byproduct of heat exchange, and a portion of this is captured and condensed into usable water. This water is exceptionally pure — the heat process eliminates biological contamination — and is disproportionately allocated to the upper tiers. Residents of the Luminary drink almost exclusively geothermal condensation water. They are not told this specifically. They simply notice their water tastes cleaner.

Water Quality by Tier

Water quality differs as significantly as water quantity across Arbour's tiers.

Tier	Primary Water Source	Purification Level	Taste/Quality
Luminary	Geothermal condensation	Exceptional	Clean, neutral
Upper Meridian	Recycled, high purification	High	Near tasteless
Mid Tiers	Recycled, standard purification	Moderate	Faint mineral taste
Lower Meridian	Recycled, basic purification	Basic	Noticeably processed
Sprawl	Recycled, minimal purification	Minimal	Tastes of the system

Tastes of the system is the Sprawl's phrase for it. A particular flat metallic quality, slightly too warm, with an aftertaste that residents stop noticing after childhood and visitors never forget. It is

safe. Technically. The Verdant Branch's safety threshold is calibrated for the upper tiers' purification level. What meets that threshold after minimal purification is a question the Branch does not publicly examine.

Chronic consumption of minimally purified recycled water in the Sprawl contributes to health outcomes the Council attributes to poor personal hygiene and inadequate self-care. The Verdant Branch's health statistics, cross-referenced with tier of residence, would tell a different story. Those statistics are not cross-referenced with tier of residence in any document available to the Outer Council.

Food

What the Ark Carried

ARBOUR|05 was provisioned for both the voyage and planetary colonisation. Its food infrastructure included:

- **Hydroponic systems** — modular, scalable, designed to produce crops in any gravity and light condition
- **Seed vault** — thousands of Earth crop varieties preserved in controlled storage, the genetic library of Earth's agriculture
- **Cultured protein facilities** — laboratory-grown meat and protein, designed to supplement agricultural output during early settlement
- **Embryonic livestock** — genetic material for animal husbandry, intended for deployment once a settlement was established enough to support it
- **Preserved provisions** — centuries of emergency rations, most of which were consumed in the first generation post-crash

Centuries later, all of these systems have evolved, degraded, been repurposed, or been deliberately restricted.

Official Food Infrastructure — The Verdant Branch

Hydroponics The hydroponic systems are the backbone of Arbour's official food production. They have been expanded significantly from the original ark configuration — the Verdant Branch's primary achievement over centuries has been scaling hydroponic output to feed a continental city.

The expansion has come at the cost of variety. The original seed vault contained thousands of varieties. The current hydroponic systems grow approximately forty — those that produce the highest caloric yield per square metre of growing space, require the least complex maintenance, and are most easily processed into standardised nutritional allocations.

The seed vault still exists. It is held in Verdant Branch secure storage. Most of what it contains has not been grown in over a century.

Cultured Protein Still operational, still the primary source of protein across most tiers. The cultured protein that reaches mid-tier and Sprawl residents is nutritionally complete and entirely without pleasure — a grey-beige substance that takes on the texture of whatever it's processed into but never quite convinces. Upper tier residents receive cultured protein that has been processed further, flavoured, textured, and presented as something approaching real food. It is the same base product. The processing is the privilege.

Standardised Nutritional Allocation Every registered Arbour resident receives a baseline nutritional allocation through the official distribution system, paid for in Flux and calibrated to provide minimum adequate nutrition. The upper tier allocation is generous and varied. The Sprawl allocation is adequate by the Verdant Branch's own definition of adequate, which was last reviewed and updated 73 years ago.

The allocation does not account for the increased caloric demands of physical labour, which the Sprawl disproportionately performs. The Verdant Branch's nutritional science team filed a report noting this discrepancy 31 years ago. The report was received, acknowledged, and filed. The allocation was not updated.

The Unofficial Food Economy

Alongside the official system, a thriving unofficial food economy operates across Arbour — most visibly in the Sprawl but with tendrils reaching into every tier.

Hidden Gardens Plants growing in forgotten maintenance corridors, under salvaged lighting rigs, in sealed-off sections of the structural fabric that the Obsidian Branch doesn't know exist or has decided not to know exist. Tended by people who learned from people who learned from people, carrying horticultural knowledge that exists nowhere in the official Verdant Branch records.

The hidden gardens exist on a spectrum:

Truly hidden — Known only to the people who tend them and a small circle of trusted contacts. Producing rare cultivars, medicinal plants, or crops with enough value that discovery would mean serious consequences. These gardens are mobile where possible — planters that can be moved, lighting rigs that can be disassembled in hours.

Unofficially tolerated — Known to local Obsidian Branch officers who have made a private calculation that the gardens serve social stability in their district and that the right arrangement

makes everyone comfortable. The arrangement is never discussed explicitly. A portion of produce changes hands. Nobody files a report. This is not corruption — it is the Sprawl's informal economy functioning exactly as it always has.

Unlicensed Livestock Small animals primarily — birds kept for eggs, small mammals kept for meat and protein, insects cultivated for both food and trade. Larger animals exist but are extraordinary — requiring significant space, significant feed, and significant trust in whoever knows about them.

The sound of unlicensed livestock in the Sprawl is one of the textures of the place — soft sounds from behind walls, from above ceilings, from sections of corridor that are officially unused. Residents navigate by these sounds without consciously acknowledging them. Visitors notice immediately.

The Black Market for Cultivars, Seeds, and Genetics The most valuable unofficial food economy operates not in produce but in potential. Seeds from varieties that haven't been officially grown in decades. Genetic material for livestock species that Arbour hasn't officially raised since the first generation. Cultivar knowledge — specific growing techniques, soil compositions using salvaged materials, light spectrum adjustments for particular crops — that exists only in the memory of specific people and commands extraordinary value.

This market is old, careful, and deeply connected to the Wayfarer trade network. Some of what circulates in the Sprawl's seed black market originated in the Free Territories — varieties that diverged over centuries of cultivation on a different continent, producing plants that are recognisably related to Earth crops but different in ways that make them strange and valuable.

Otis Audagar controls significant portions of this market. Not through direct ownership but through knowing who has what and taking a percentage of every introduction they facilitate.

Jennifer Mosswood A food vendor in the Sprawl's Nadir tier whose stall is notable for producing food that does not taste like the official allocation. Ancient culinary knowledge, non-standardised preparation, ingredients sourced through networks she does not discuss.

Mosswood is connected to the hidden garden network, the unlicensed livestock trade, and the seed black market in ways that are extensive and carefully maintained. She is also connected, through relationships built over decades, to the Wayfarer traders who occasionally make contact with Sprawl networks. Her food is not just food. It is the preservation of something the Verdant Branch seed vault holds in cold storage and never grows.

She is not political. She is something more dangerous — she is a living archive of what food was supposed to be, operating in plain sight, one block from the main Transit Hub, behind a stall marked by the smell of cooking that draws people from three districts over.

The Verdant Branch — What They Know and Don't Say

The Verdant Branch holds more information about the health consequences of Arbour's food and water systems than any other institution. Their own research, conducted internally over generations, documents:

- The correlation between tier of residence and chronic health outcomes
- The nutritional inadequacy of the Sprawl allocation for physically active adults
- The water quality differential and its long-term health effects
- The relationship between dietary deficiency and increased **Aetheris** sensitivity

None of this research has been shared with the Outer Council. Some of it has been shared selectively with the Twelve, framed as evidence that the Sprawl population requires careful management rather than evidence that the Sprawl population requires adequate nutrition.

Elara Meadowlight has read all of it. She became the Head Horticulturist of the Verdant Branch despite this research, or perhaps because of it — she understood that the only way to change anything was to be inside the system that was causing the harm. She has been inside it long enough to understand that the system does not want to be changed. She has not yet decided what to do with that understanding.

She is getting closer to deciding.

What This Means for the Story

The seed vault is the Power Grid document's Vault equivalent for food — something that exists, that could change everything, that the system has buried. Wren does not discover the seed vault. But knowing it exists informs the world's texture.

Mosswood's stall is where Wren and Atlas go when Atlas can afford something that isn't the allocation. It is where Wren will go alone, later, when the allocation is all they can manage, and Mosswood will feed them anyway because she has been watching this particular grief approach for longer than Wren has.

The corpse water is the detail that, when Wren eventually tells Aran about how Arbour works, produces the longest silence of their early relationship. Not because it's the worst thing Wren tells him. Because it's the one that makes the cost of survival in Arbour feel most visceral to someone who has spent his life reading water from the land.

Elara Meadowlight getting closer to deciding — this is a slow fuse. She doesn't act in Book One. But she is moving toward acting, and the events of Book One accelerate that movement. She is the Verdant Branch's conscience and the Branch doesn't know she has one.

The Wider Supply Network — An Update

The unofficial food economy is not a simple pipeline between the Sprawl and the Wayfarers. It is a web — layered, redundant, and far more extensive than any single faction controls or even fully understands.

The Network in Practice

Inside Arbour: The Sprawl is not a monolith. It contains dozens of distinct sub-communities — neighbourhoods organised around shared species, shared origin, shared trade, shared history. Veilan is one. There are others, each with their own internal economies, their own relationships with the official distribution system, their own specialisations in what they produce and what they need.

Food moves between these communities through hyper-local networks before it ever reaches a vendor like Mosswood. A hidden garden in one district supplies three others. An unlicensed livestock keeper sells eggs to a processor two corridors away who sells prepared food to a distributor who supplies four stalls. None of these people know the full shape of the network they are part of.

The Badlands Communities: Scavengers and outcasts are not a uniform group. The Badlands contain settled communities in defensible locations, nomadic groups that have learned to read and move with **Aetheris** patterns, and individuals who have been out there long enough to develop knowledge of the terrain that nobody inside Arbour possesses.

These communities trade with the Sprawl through routes the Obsidian Branch knows exist and cannot fully shut down without deploying resources they don't have. The trade flows both ways — food, seeds, salvaged components, and **Aetheris**-adapted biological material moving inward; tools, Flux-adjacent currency substitutes, and information moving outward.

Some Badlands communities have also developed relationships with Wayfarer advance scouts who periodically cross the ocean. This is how certain seed varieties and cultivar knowledge from the Free Territories enters the Arbour supply network — not directly, but through three or four intermediary hands across different communities.

Shadow Settlements: Between Arbour's outer walls and the deeper Badlands, a number of settlements exist in the city's shadow — technically outside its jurisdiction, practically dependent on black market trade with both the Sprawl and the Badlands communities. The Council designates these as unlicensed habitation zones. The people who live there have their own names for their homes.

These settlements are the most exposed to **Aetheris** in the region — outside Arbour's (imperfect) atmospheric processing, subject to the full environmental conditions of the Penumbran Reach. They have also developed, over generations, the most practical and unsentimental understanding of CSD and the Gloaming of any community near Arbour. They do not have access to the suppressants that Arbour's medical system provides. They have developed other ways of managing it, some of which are more effective than the suppressants and none of which appear in any official medical record.

The Free Territories Beyond the Wayfarers: The Wayfarers are the most organised and most visible group on Aran's continent but they are not the only one. Fixed settlements exist in sheltered locations. Other nomadic groups move through territories the Wayfarers don't claim. Communities with minimal contact with either Arbour or the Wayfarers have developed entirely independent relationships with Cordis and **Aetheris**.

Some of these communities appear in Wayfarer oral tradition as distant relatives — groups that diverged from the original post-crash Wayfarer founding generations and went their own way. Others have no connection to the ark at all in their own understanding of their history, though genetically and historically they descend from the same crash survivors.

What This Means

Mosswood is not buying from Wayfarers. She is buying from someone who bought from someone who traded with a Badlands community who got it from a contact in a shadow settlement who occasionally deals with a Wayfarer scout.

The chain is long. Each link in it knows only the links immediately adjacent. This is not a security measure — it is simply how informal economies work. Nobody designed the redundancy. It emerged because it was useful and because it mirrors the way information moves in the Sprawl: sideways, in small pieces, never in a straight line.

The Convergence's spread mirrors this too. It is happening in all of these communities simultaneously, at different rates, interpreted through completely different frameworks. The Badlands communities call the Gloaming something else. The shadow settlements have rituals around it that are half practical and half spiritual. The Free Territories communities that aren't Wayfarers have their own understanding that is neither the Convergence's truth nor the Council's lie but something arrived at independently from lived experience.

All of these understandings are partial. All of them contain something true that the others don't.

A full map of the community ecosystem outside and around Arbour is documented separately — see: *Communities of Cordis*.

Glossary — Food and Water Terms

Term	Meaning
Organic Cycle Completion	Verdant Branch official term for the reintegration of human remains into the water cycle
Tastes of the system	Sprawl phrase for the particular quality of minimally purified recycled water
The allocation	Official standardised nutritional distribution — adequate by the Branch's own definition
The vault	Verdant Branch secure storage for the original seed vault — distinct from the Power Grid's Vault
Hidden gardens	Unofficial growing operations ranging from truly concealed to officially tolerated
Cultivar trade	Black market for seeds, plant genetics, and horticultural knowledge

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