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What Would the GPI Show Today?

A Data-Based Assessment of the Gross Planetary Health Index Using Current Scientific Evidence

Sources: NOAA, UN SDG Report 2024, WWF Living Planet Report 2024, IPCC, European Environment Agency

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The Question

The Gross Planetary Health Index (GPHI) is the proposed monetary base of the Gaia economy. Its six pillars — atmospheric health, biodiversity, soil and water, forest and ocean, human health, and social cohesion — are continuously measured and aggregated into a single index that determines the Gaia money supply.

A natural question follows: if the GPHI existed today, using current verified scientific data, would it be growing or shrinking? And by how much?

This paper answers that question using data from NOAA, the United Nations, the WWF Living Planet Report 2024, the European Environment Agency, and the IPCC. The answer is not theoretical. It is derived directly from measurements that already exist.

Conclusion in one sentence: Based on current verified data, a GPHI calculated today would be contracting at approximately 1.5% to 3% per year — meaning the Gaia money supply would be shrinking by that amount annually, making each existing unit of Gaia more valuable and making restoration work progressively more profitable.

Part One: Pillar-by-Pillar Assessment

The GPI is composed of six pillars with defined weightings. Each is assessed below using the most recent verified data available as of 2025–2026.

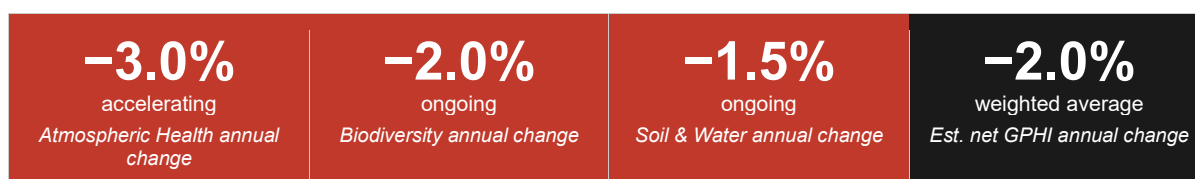
Pillar	Weight	Current Data (2024–2025)	Est. Annual Change	GPI Direction
Atmospheric Health	20%	CO ₂ at 424.61 ppm — largest one-year increase on record (3.75 ppm in 2024). Methane 166% above pre-industrial levels.	–2.5% to –3.5% per year	Strongly Negative
Biodiversity	20%	73% average decline in wildlife populations since 1970 (WWF 2024). Extinctions 10–100x above natural baseline.	–1.5% to –2.5% per year	Strongly Negative
Soil & Water	20%	Degraded land rose from 11.3% to 15.5% globally (2015–2019). Ocean pH fallen from 8.11 to 8.04 since 1985 — 30% more acidic.	–1.0% to –2.0% per year	Strongly Negative
Forest & Ocean	15%	100 million hectares of forest lost 2000–2020. ~10 million hectares per year ongoing. Coral reefs declining globally.	–1.0% to –1.5% per year	Negative
Human Health	15%	Life expectancy improving in most regions. But obesity, mental health, air pollution disease and antibiotic resistance rising. 800M still undernourished.	–0.2% to +0.3% per year	Slightly Negative to Neutral
Social Cohesion	10%	Global inequality rising in most major economies. Democratic backsliding in 35+ countries. Institutional trust at historic lows.	–0.5% to –1.0% per year	Negative

Part Two: The Aggregate Picture

Estimated Net GPHI Change Per Year: **−1.5% to −3.0%**

Weighting each pillar's estimated annual change by its GPHI allocation and aggregating across the six pillars produces an estimated net GPHI contraction of between 1.5% and 3.0% per year under current conditions.

This is a conservative estimate. It does not fully account for the compounding interactions between pillars — for example, biodiversity loss reduces the effectiveness of forest carbon sinks, which accelerates atmospheric CO₂ accumulation, which accelerates ocean acidification, which reduces marine biodiversity. These feedback loops are real and likely mean the actual GPHI trajectory is worse than a simple pillar-by-pillar average suggests.



What This Means in Gaia Monetary Terms

If Gaia were operational today, a 2% annual GPHI contraction would mean the following:

- The total Gaia money supply contracts by approximately 2% per year
- Each existing unit of Gaia appreciates in purchasing power relative to fiat currencies (which are simultaneously inflating at 2–5% per year)
- The financial return from verified ecological restoration increases — each unit of newly created Gaia is worth more than the year before
- The homeostatic loop activates: destruction outside the network raises the price of Gaia, making restoration more profitable, attracting more restoration activity
- The combined effect of Gaia appreciation and fiat inflation means a Gaia holder outperforms a fiat holder by approximately 4–7% per year under current conditions — without the restoration premium

The most important implication: today is the moment of maximum Gaia price appreciation potential. The worse the planetary health data, the more valuable each unit of Gaia becomes, and the stronger the financial incentive to restore. The current ecological crisis is, paradoxically, the strongest possible argument for holding Gaia — and the strongest possible financial incentive to begin restoration work immediately.

Part Three: A Worked Example

The Amazon Drought of 2024 — A Real Event Through the Gaia Lens

To make these numbers concrete, consider a real event from 2024 — the severe Amazon drought, which caused massive forest fires, significant biodiversity loss, and record CO₂ release from burning biomass. This was a verified, satellite-measured ecological destruction event of major scale.

What happened in conventional terms:

- GDP impact: small positive (timber extracted, some economic activity from emergency response)
- Media coverage: significant but short-lived
- Policy response: statements of concern, no structural change
- Financial market impact: essentially zero

What would have happened under Gaia:

Step 1 — Detection: GPHI satellite monitoring detects the deforestation and fire damage within 24–48 hours. Biomass loss, CO₂ release, and biodiversity impact are measured continuously.

Step 2 — Attribution: The GPHI Science Council applies climate attribution methodology. The drought is determined to be approximately 30 times more likely due to human-caused climate change. Attribution: 97% human-caused (via climate change from historical emissions), 3% natural variability.

Step 3 — Monetary consequence: Gaia is destroyed from the total supply proportional to the verified ecological damage. Estimated damage from the 2024 Amazon drought: equivalent to several million hectares of forest loss, significant biodiversity impact, and massive carbon release. Conservative estimate: 500 million to 2 billion Gaia destroyed from total supply (depending on the GPHI coefficient applied).

Step 4 — Price effect: With 500M–2B Gaia removed from a total supply of 7.8 billion, the price appreciates by 6–25% from this event alone. Existing Gaia holders see their holdings appreciate significantly within days.

Step 5 — Restoration incentive: The higher price makes Amazon restoration dramatically more profitable. Reforestation projects that were marginally viable before the drought event are now highly profitable. Capital flows toward Amazon restoration. New validators join the PoR network specifically because the Amazon destruction made their restoration work more valuable.

Step 6 — Attribution cost distribution: The 97% human-caused attribution is distributed across all Gaia holders proportional to their Ecological Footprint Score. Industrial nations with high historical emissions bear more of the cost. Low-income populations with minimal historical footprint bear almost none.

The Gaia version of the Amazon drought: The destruction immediately makes existing Gaia holders wealthier in the short term. It immediately makes Amazon restoration more profitable. It immediately charges historical emitters proportionally. Capital flows toward restoration within days, not decades. The current version of the Amazon drought: GDP rises slightly (timber). Markets don't notice. A strongly-worded statement is issued. Nothing changes.

Part Four: Current System vs. Gaia — Reading the Same Data

The same satellite data, the same UN reports, the same NOAA measurements — two completely different monetary responses:

Data Point	Current System Response	Gaia Response
CO ₂ reaches record 424.61 ppm in 2024	No monetary consequence. Markets unaffected. GDP unaffected.	Atmospheric health pillar falls. Gaia supply contracts. Price rises. Restoration more profitable.
73% wildlife population decline since 1970	No monetary consequence. Biodiversity has no balance sheet entry.	Biodiversity pillar falls continuously. Gaia contracts. Ecosystem restoration becomes increasingly profitable.
10M hectares deforested per year	Timber generates GDP. No cost recorded.	Forest pillar falls. Gaia destroyed proportional to damage. Reforestation immediately more profitable.
Ocean pH falls from 8.11 to 8.04 (1985–2024)	No monetary consequence. Ocean has no market value.	Soil & water pillar falls. Gaia contracts. Marine restoration earns Gaia.
800 million people undernourished	No automatic monetary consequence for food system causing this.	Human health pillar suppressed. System incentivises food system reform through restoration earnings.
Amazon drought 2024 — massive biomass loss	GDP slightly positive (timber). No financial consequence for emitters.	Billions of Gaia destroyed. Price rises. Amazon restoration immediately profitable. Historical emitters charged proportionally.

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Conclusion: The Planet Is Already Sending the Signal. Nobody Is Listening.

The data exists. The measurements are being taken. NOAA measures atmospheric CO₂ continuously. The UN tracks deforestation annually. The WWF publishes wildlife population data every two years. The European Environment Agency monitors ocean pH. The IPCC synthesises it all into reports that grow more alarming with every edition.

The current monetary system cannot hear any of it. The data flows into scientific papers, into policy reports, into strongly-worded communiqués from climate summits. And then nothing changes — because nothing in the price changes. The market is deaf to the signal the planet is sending.

Gaia is the monetary architecture that would make the market listen. Not through regulation that forces companies to read the reports. Not through carbon taxes that politicians reduce when fuel prices rise. By building the planet's health signal directly into the architecture of money — so that every actor who participates in the economy, whether they care about the climate or not, automatically responds to the same data the scientists are measuring.

The GPI today, based on current verified data, would be contracting at 1.5–3.0% per year. That signal exists in reality. It is simply invisible to the monetary system.

Gaia makes it visible. That is the entire idea.

*The planet is already sending the signal. The current monetary system cannot hear it.
Gaia is the receiver.*