



The state of Balkan rivers 2025: Hydromorphological assessment and 13-year trends

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SUMMARY

A decade of decline

The 2025 State of Balkan Rivers assessment confirms a troubling and steady erosion of the Balkan river network's ecological integrity. Since 2012, an increasing number of rivers have been physically altered, driven primarily by a surge in hydropower development, intensive river regulation for infrastructure and land reclamation, and the destructive impacts of excessive sediment extraction.

The 2025 assessment utilises high-resolution satellite imagery and updated dam inventories to evaluate the three critical pillars of river health: the channel, the banks, and the floodplain. Our analysis tracks the cumulative impact of:

- **Fragmentation:** Dams and barriers that break the natural river continuum.
- **Structural damage:** Artificial reinforcement of riverbanks and the straightening of natural meanders.
- **Habitat loss:** The degradation or total disconnection of vital floodplain ecosystems.

To accurately trace the development over time, we compared current findings with two previous benchmarks: the 2012 [Hydromorphology and Dam Projects](#) assessment (Schwarz 2012) and the 2018 [Eco-Masterplan for Balkan Rivers](#) (RiverWatch & EuroNatur) (**Figure Summary 1**). Because the 2012 study focused exclusively on larger rivers, our comparative analysis focuses on that specific subset of 35,530 river kilometres (rkm), finding:

- The **percentage of the most pristine rivers has dropped by 7% since 2012.** Conversely, the degraded classes increased, with moderately modified rivers rising by 5% and extremely and severely modified rivers each increasing by 1%.
- The **total length of reservoirs** (impoundments) for larger rivers grew from 2,224 rkm in 2012 to 2,626 rkm in 2025—an **18% increase** (402 rkm) that underscores the relentless pressure of hydropower expansion.

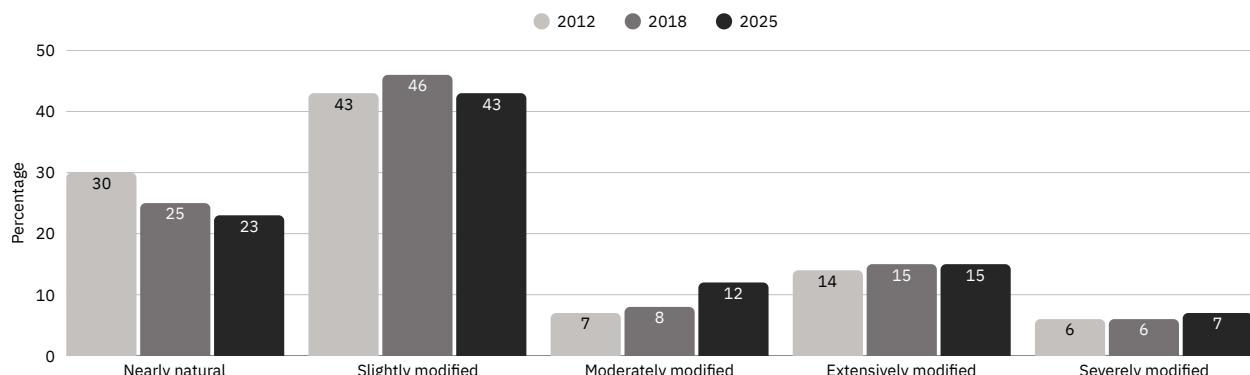


Figure Summary 1: Comparison of the percentage of HYMO classes for larger rivers 2012, 2018 and 2025.

National crises: Albania and Bosnia & Herzegovina

This 2025 analysis finds particularly severe degradation in countries heavily targeted by hydropower development. By calculating precise shifts in rkm, the data reveals a startling loss of integrity:

- **Albania:** Nearly natural river stretches plummeted from 68% in 2012 to just 40% in 2025—a massive 28% reduction. In absolute terms, the length of nearly natural rivers dropped from 3,812 rkm to 2,668 rkm in just seven years (2018–2025).
- **Bosnia & Herzegovina:** The share of pristine rivers fell from 1,170 rkm to 904 rkm, representing a 23% decrease in high-value ecological stretches (2012 - 2025).

The regional snapshot: Despite these persistent pressures, the Balkans remain unique in Europe. Across the 83,824 rkm evaluated, now including all small rivers as well:

The good news: Approximately 33% of Balkan rivers remain in a nearly natural state, with another 39% categorised as slightly modified (**Figure Summary 2**). This ensures the region remains a global ecological stronghold, far surpassing the river health status of Central and Southern Europe.



Photo: Aoos River, Greece © Joshua D. Lim

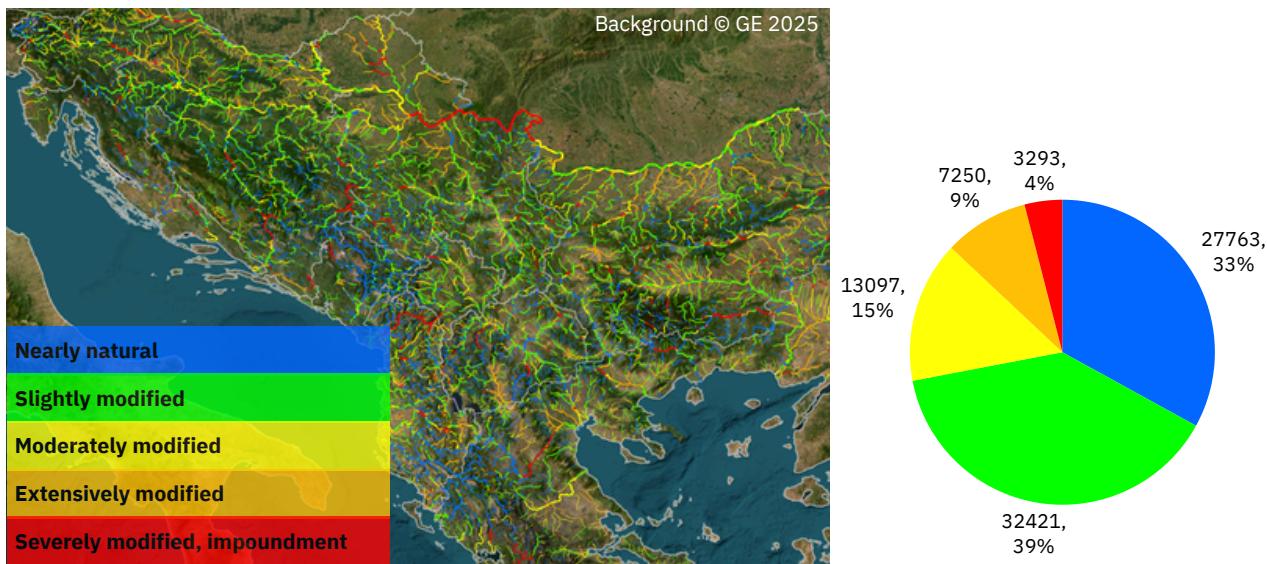


Figure Summary 2: Hydromorphological assessment and distribution in rkm for the entire Balkan area.

Signs of hope: Amidst the decline, significant river protections have been achieved. Most notably, the Vjosa in Albania was designated Europe's first Wild River National Park, successfully blocking nearly 40 planned dams. In Bosnia and Herzegovina, while high-value ecological stretches decreased by 23%, a landmark legal victory was achieved in 2022. Amendments to the Law on Electricity in the Federation of Bosnia and Herzegovina banned the approval of new small hydropower plants (under 10 MW), effectively halting approximately 116 planned projects. In total, some 200 km of large rivers and 700 km of small rivers have been preserved across the Balkans.

The bad news: Despite such achievements, the trend is moving rapidly in the wrong direction. The "Blue Heart of Europe" is being systematically compromised by short-sighted development. While hydropower remains a dominant threat, the transition from wild rivers to infrastructure corridors is the result of cumulative human impacts:

- **Hydropower & diversions:** Large-scale dams and small hydropower plants divert water, leaving long residual stretches dry and fragmenting the river continuum.
- **Extractive industries:** Excessive gravel and sand mining are depleting sediment reserves, causing riverbeds to incise and habitats to collapse.
- **Infrastructure & regulation:** Road construction along river valleys and aggressive flood-defense works have led to extensive channel straightening and floodplain disconnection.