BRITISH HYDROPOWER ASSOCIATION

# Legislating towards, Functional, Healthy Waterways

## Contents

**Executive Summary**

England's rivers are governed by one of the most extensive regulatory frameworks in the world, yet according to the Environment Agency's own assessments, just 14% of rivers currently meet good ecological status : a figure that has remained largely static for fifteen years.[1] The Rivers Trust's State of Our Rivers 2024 report found no single stretch of river in England to be in good overall health.[2]

The current framework has evolved incrementally over decades, producing a fragmented system in which individual pressures are governed through separate regimes that do not operate coherently, do not deliver consistent environmental outcomes, and do not apply equivalent scrutiny across comparable activities. This is not a failure of regulatory ambition; it is a failure of regulatory design. See appendix A for an example of regulatory asymmetry which highlights this point.

The Government's recent White Paper, *A New Vision for Water*, recognises the need for a more integrated, outcomes-focused approach to water management, including the creation of a single, integrated water regulator and a more coherent legislative framework. These reforms represent a significant and welcome shift away from the fragmented and piecemeal approach that has characterised the system to date.

This paper supports that direction of travel but argues that institutional reform alone will not be sufficient to deliver the outcomes the Government has identified. Without legislative realignment, a new regulator will inherit the same fragmented statutory duties, structural inconsistencies and misaligned incentives that currently limit system-wide effectiveness. To fully realise the ambition set out in the White Paper, reform must therefore operate at both institutional and legislative levels, ensuring that governance, regulation and statutory duties are aligned around a single, coherent set of environmental and system outcomes.

We propose the introduction of an umbrella statutory framework for waterway health, a single overarching duty under which existing legislation would operate within a coordinated structure designed to deliver clean water, ecological function and resilient river systems. Critically, this framework would embed proportionality within statute itself, replacing the current reliance on discretionary, guidance-based mechanisms such as Regulatory Position Statements with clear and consistently applied legal requirements.

International experience supports this approach. Switzerland's reforms to its Federal Act [3] on the Protection of Waters, and the Netherlands' integrated Water Act [4], demonstrate that coherent, legislation-led frameworks can improve river condition while reducing regulatory complexity, achieving proportionality through statutory design rather than discretionary non-enforcement.

England's hydropower sector is not seeking deregulation, nor does it object to rigorous environmental oversight. Its operators depend on healthy rivers and have a long-term commercial and ecological interest in maintaining them. What the sector is seeking is a regulatory framework

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[1] *Environment Agency, Water Framework Directive: Updating the Standards, 2024.* https://www.gov.uk/government/collections/water-framework-directive

[2] Rivers Trust, *State of Our Rivers 2024*, 2024. https://theriverstrust.org/key-issues/state-of-our-rivers

[3] Federal Office for the Environment (FOEN), *Restoration of Swiss Waters*, Switzerland, 2024. https://www.bafu.admin.ch/bafu/en/home/topics/water/info-specialists/state-of-waterbodies/restoration-of-swiss-waters.html

[4] Dutch Water Act (Waterwet), 2009; Government of the Netherlands, *Water Management in the Netherlands*. https://www.government.nl/topics/water-management

that is fair, evidence-based and consistently applied, one that holds all actors to equivalent standards of environmental accountability, recognises the contribution of sustainable water users to both decarbonisation and catchment management, and does not impose disproportionate burdens on activities that demonstrably support the environmental outcomes regulation is designed to achieve.

This approach is consistent with the Government's emerging emphasis on more flexible, outcome-based regulation, including the principle of "constrained discretion", but goes further by embedding proportionality within statute itself. This ensures that regulatory flexibility is applied consistently and transparently across all sectors, rather than relying on discretionary or guidance-based mechanisms that may be applied unevenly.

To support delivery of this approach through the Water Reform Bill, this paper sets out a number of practical priorities for Government, including: establishing a clear statutory framework for waterway health; embedding proportionality within that framework; aligning regulatory regimes and institutional responsibilities; strengthening transparency and accountability; and recognising the role of sustainable water users in catchment management.

*Figure 1: Windermere suffering from eutrophication after sewage discharges*

## 1. Purpose

This paper sets out the case for a more proportionate, consistent and evidence-based approach to abstraction regulation in England, aligned with recent government recommendations, including the Independent Water Commission chaired by Sir Jon Cunliffe and the review of regulatory policy led by Dan Corry, and with the objectives set out in *A New Vision for Water*.

Clean, well-functioning waterways are not incidental to hydropower operations; they are fundamental to them. The sector therefore supports robust environmental regulation and shares the government's ambition to restore and maintain healthy river systems. What this paper challenges is the structural inconsistency with which regulation is currently applied across different activities affecting those systems.

The paper examines how the current regulatory framework operates in practice across the full range of activities that affect river systems and identifies areas where a lack of coherence and parity is undermining both environmental outcomes and regulatory confidence. It considers, in particular, the increasing use of Regulatory Position Statements (RPS) as a mechanism for managing low risk activities, and whether this reflects a wider misalignment within the statutory framework. Where certain activities are consistently identified as low risk, the paper argues that transparent and durable reform requires those activities to be recognised directly within the statutory regime, rather than managed through discretionary, guidance-based mechanisms that introduce uncertainty for operators and regulators alike.

The paper argues that more durable and transparent reform would be achieved through legislative realignment of the abstraction and discharge regimes, ensuring that regulatory requirements are applied consistently and proportionately across all water users, in a manner that reflects actual environmental risk rather than the type of activity or sector involved.

## 2. The Regulatory Paradox

England’s waterways are governed by an extensive and layered regulatory framework addressing abstraction, discharge impoundment, water quality, ecology, flood risk, fisheries and recreation. While this framework provides a high degree of oversight, it has produced a system in which individual pressures are regulated through separate regimes that do not operate in a coordinated or consistent way. The result is a structural paradox: the more extensively England's rivers are regulated, the further environmental outcomes appear, from where they should be.

This paradox is not simply a matter of regulatory volume. It reflects a deeper problem of coherence. Responsibilities are distributed across multiple institutions and statutory regimes, each **addressing a specific pressure on river systems**, but none operating within a single framework designed around clearly defined environmental outcomes. As illustrated in Figure 2, primary legislation, retained environmental duties, regulatory regimes and delivery bodies operate across multiple interfaces without a unifying statutory purpose. The cumulative effect is a system that is complex to administer and does not translate consistently into improved river condition across catchments.

The consequences of this fragmentation are most visible in the inconsistent way regulation is applied across different activities affecting river systems. At present, similar interactions with watercourses are subject to materially different regulatory approaches. Some activities benefit from lighter-touch, guidance-based mechanisms, while others remain subject to detailed licensing requirements, operational constraints and enforcement scrutiny. In many cases, this disparity does not appear to be

grounded in a consistent application of environmental risk or evidence across sectors. As set out in Appendix A, the contrast between the regulatory treatment of hydropower operators and that of water companies responsible for sewage discharges illustrates this asymmetry in its starkest form. A framework in which comparable environmental pressures are subject to materially different regulatory approaches risks undermining both environmental outcomes and regulatory confidence.

The BHA therefore considers that there is a clear and immediate need for change. Regulatory frameworks must be applied on a consistent, evidence-based basis, with requirements proportionate to actual environmental risk rather than determined by the type of activity or sector involved. Embedding proportionality within the statutory framework itself, rather than managing it through continual policy amendments or discretionary guidance, would provide greater clarity for all water users while supporting the shared objective of improving river health.

The Government's White Paper, "*A New Vision for Water*" provides not only an opportunity to adopt a more integrated approach but also to simplify institutional arrangements. It proposes not only a more integrated approach to water governance but also a simplification of institutional arrangements through the creation of a single water regulator. This is a welcome and necessary step.


### 3. Current fragmented legislative system regulating individual pressures

Figure 2 illustrates the structural complexity of the current legislative and regulatory framework. At the top of the system, river management is shaped by two parallel sources of legal obligation: primary domestic legislation and retained EU-derived environmental law. These frameworks establish a wide range of duties relating to water quality, abstraction, biodiversity, planning and environmental protection. However, they have developed incrementally over time and do not operate within a single, unified statutory purpose. This layered legal foundation feeds into a series of overlapping regulatory regimes, including abstraction licensing, environmental permitting, fisheries regulation, river basin planning and planning controls. These regimes are administered through different mechanisms and apply varying standards and levels of scrutiny depending on the activity in question.

Alongside these regulatory frameworks sit economic regulation and delivery structures. Ofwat governs investment decisions by water companies through periodic price reviews, while operational delivery is distributed across multiple bodies including the Environment Agency, local authorities, internal drainage boards and catchment partnerships. These institutions operate within their own statutory and policy frameworks, often without full alignment to a shared set of environmental outcomes. The diagram highlights how this fragmented system results in disjointed and inconsistent outcomes. Despite extensive regulation, rivers remain polluted, ecological recovery is slow, sewage discharges persist and public confidence continues to decline. This leads to the central paradox identified in this paper: England's rivers are subject to one of the most comprehensive regulatory systems in the world, yet that system is not delivering the environmental outcomes it is intended to achieve. The issue is therefore not the absence of regulation, but the lack of coherence in how that regulation is structured and applied.

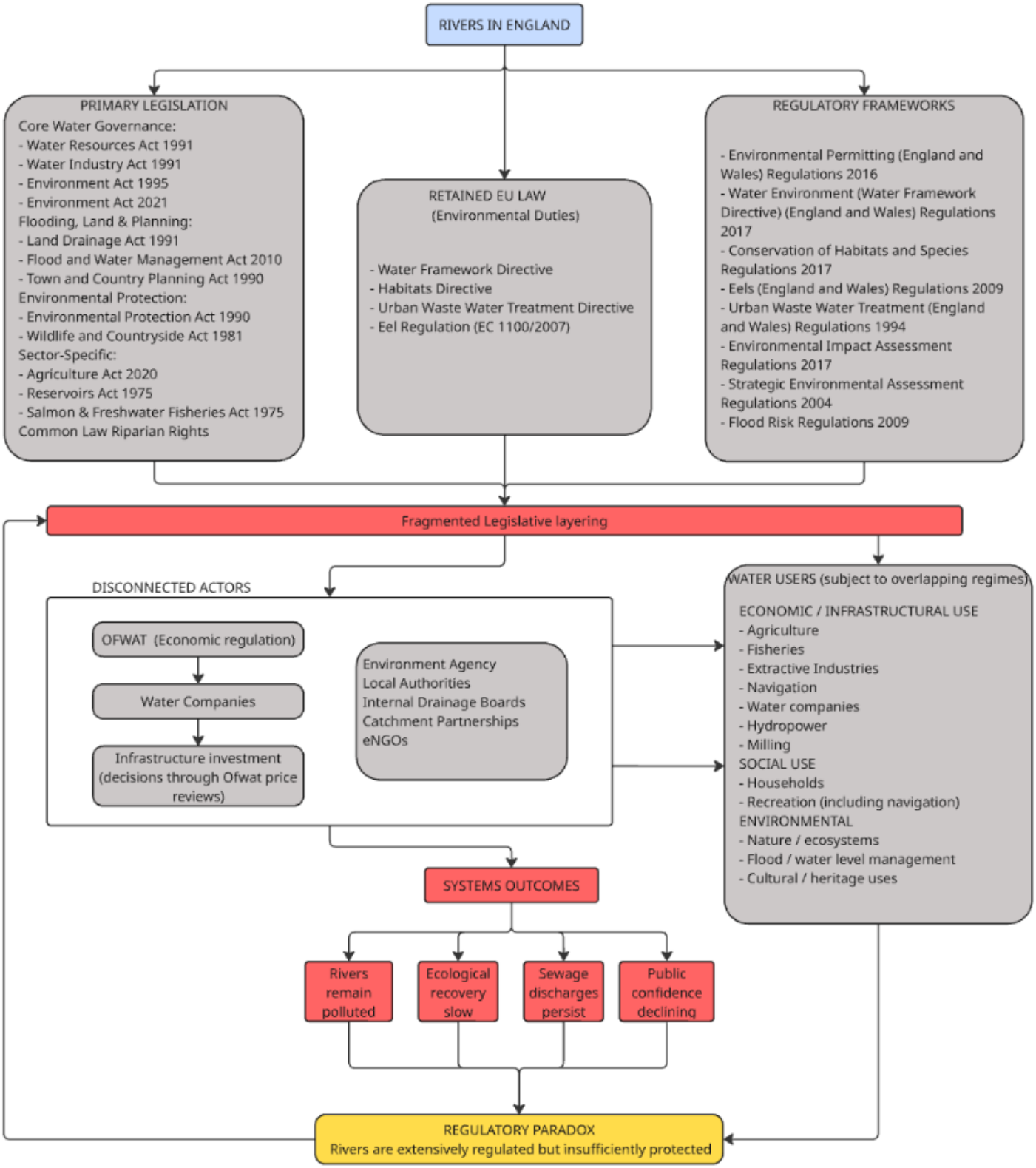


*Figure 2: Current fragmented legislative system regulating individual pressures*

## 4. Returning to First Principles

The persistence of pressures on England's waterways, despite extensive regulatory controls, suggests that while the system has evolved to address a wide range of pressures on river systems, it has developed incrementally over time rather than as a single coherent framework designed around clearly defined outcomes. In this context, it is useful to consider the framework from first principles and how we can achieve the outcomes we want. What is a well-functioning waterway and how can a regulatory management system achieve this outcome? A well-functioning waterway system should be designed around a small number of clear and consistent objectives, against which both regulatory effectiveness and future reform can be assessed. These principles are illustrated in Figure 3.


*Figure 3: Returning to First Principles – What should a functioning waterway system deliver?*

A functioning waterway system should be designed around a small number of clear objectives.

1. Waterways must deliver **clean water**, ensuring that rivers are not used as routine conduits for untreated or poorly treated pollution.
2. **Maintaining ecological function within river systems**, including supporting biodiversity, enabling fish migration and sustaining connected aquatic habitats.
3. **Strengthening operational stewardship of river systems and accountability**, combining regulatory oversight with catchment-level knowledge and management, ensuring that responsibility for pollution and ecological damage can be clearly attributed and addressed.
4. **Fair and sustainable water use management**
5. **Supporting long-term infrastructure resilience**, including sustained investment in wastewater systems and related assets.
6. **Safeguarding the long-term public interest in river systems**, recognising their ecological, social and economic value.

These principles are also consistent with the Government's proposed move towards more integrated regional water planning frameworks, which aim to better align water supply, environmental protection and development planning. Embedding these principles within a statutory framework

would help ensure that national objectives are translated more effectively into regional and catchment-level delivery.

## 5. An Umbrella Legislative Framework for Healthy Waterways

The Government's proposal to establish a single integrated water regulator, bringing together the functions of Ofwat, the Environment Agency, Natural England and the Drinking Water Inspectorate, is the most significant reform to water governance in a generation. It is a necessary and welcome step. However, institutional consolidation alone will not resolve the structural problems this paper identifies. A new regulator operating within the same fragmented statutory framework will inherit the same inconsistencies, the same gaps in accountability and the same absence of a unifying purpose that has produced the regulatory paradox described in Section 2. The opportunity presented by this reform must therefore be taken in full, and that requires legislative change alongside institutional change.

This paper argues that the solution is the introduction of an umbrella statutory framework for delivering **'functioning and healthy waterways'**. This would establish a clear and enforceable duty, placed on regulators, infrastructure operators and relevant public authorities, to secure clean, ecologically functioning and resilient river systems. Rather than replacing existing environmental legislation, the umbrella framework would sit above it, aligning the operation of existing regimes within a common statutory purpose, as illustrated in Figure 4.

Critically, this framework must embed proportionality within statute itself. The current system leaves proportionality to regulatory discretion, producing the asymmetries this paper has documented: detailed licensing and operational constraints applied to low impact activities such as hydropower, while significantly more damaging activities operate under guidance-based mechanisms or permitted discharges. Where proportionality depends on the discretion of the regulator rather than the requirements of the law, outcomes will always be inconsistent. Embedding proportionality within the statutory framework removes that discretion and replaces it with a clear legal standard, applied equally across all activities affecting river systems.

Under this model, river basin planning, discharge permitting, sewerage duties, abstraction licensing, infrastructure investment decisions and catchment management would all operate within a shared statutory purpose. The role of the new integrated regulator would be to coordinate these mechanisms so that environmental outcomes, economic regulation and infrastructure planning support the same objective, and so that no sector is subject to regulatory requirements that bear no proportionate relationship to its actual environmental impact.

This is not a proposal to weaken environmental protection. It is a proposal to make it work.

## 6. How an Umbrella Legislative Framework Would Operate in Practice

The proposed umbrella legislative framework would not replace existing environmental legislation but would sit above it, providing a unifying statutory purpose and aligning how existing regimes are applied in practice. At its core would be a single overarching duty to secure clean, functioning, healthy and resilient water systems. This duty would apply across regulators, infrastructure operators and relevant public authorities.

In practical terms, the framework would operate through three key mechanisms:

1. **Statutory Alignment of Objectives**
   Existing regimes governing abstraction, discharge, water quality, ecological protection and

planning would be required to operate within a shared set of statutory outcomes. This would ensure that decision-making across different regulatory domains supports the same environmental objectives.

2. **Proportionality Embedded in Law**
   Regulatory requirements would be explicitly linked to demonstrated environmental risk. This would ensure that similar activities are subject to equivalent levels of scrutiny, removing reliance on discretionary mechanisms such as Regulatory Position Statements and improving consistency across sectors.
3. **Integrated Regulatory Application**
   The role of the proposed single water regulator would be to coordinate the application of these aligned regimes, ensuring that economic regulation, environmental protection and infrastructure planning operate coherently and deliver mutually reinforcing outcomes.

This model supports the Government's objective of a more integrated and outcome-focused system, while providing the legal clarity and consistency required to translate that ambition into effective delivery.

## 7. Creating an umbrella legislative framework that coalesces existing legislation

Figure 4 below illustrates how the current fragmented system described in Figure 2 can be restructured into a coherent, outcome-driven framework through legislative alignment and institutional integration.

At the top of the model is a clear and unified statutory objective: the delivery of healthy waterways. This objective is defined through a small number of core outcomes, including clean water, ecological function, resilient infrastructure and effective catchment stewardship. These outcomes provide a consistent reference point for all regulatory and policy decisions across the system.

Beneath this sits the proposed integrated water regulator, as set out in the Government's White Paper. In contrast to the current system, where economic, environmental and planning functions operate with limited coordination, the integrated regulator aligns water system planning, economic regulation and environmental regulation within a single institutional framework. This ensures that investment decisions, regulatory controls and environmental objectives are pursued in a coordinated and mutually reinforcing way.

Crucially, this institutional integration is supported by legislative alignment. Existing primary legislation and retained environmental law are not replaced, but are brought into a coherent structure through an overarching statutory framework. This ensures that all regulatory regimes operate within a shared legal purpose, rather than as parallel and sometimes conflicting systems.

The result is a coordinated regulatory system in which economic regulation, environmental permitting, abstraction licensing, planning controls and delivery structures are aligned with the same set of statutory objectives. Infrastructure investment is explicitly linked to river basin outcomes, and delivery bodies operate within a framework that supports consistent implementation across catchments.

This structural alignment translates directly into improved system outcomes. Instead of fragmented and inconsistent results, the system is designed to deliver clean rivers, healthier ecosystems, reduced sewage discharges and restored public confidence.

The diagram therefore illustrates a transition from the current regulatory paradox, in which rivers are extensively regulated but insufficiently protected, to a state of regulatory coherence, in which regulation is both effective and proportionate, and environmental outcomes are consistently delivered.

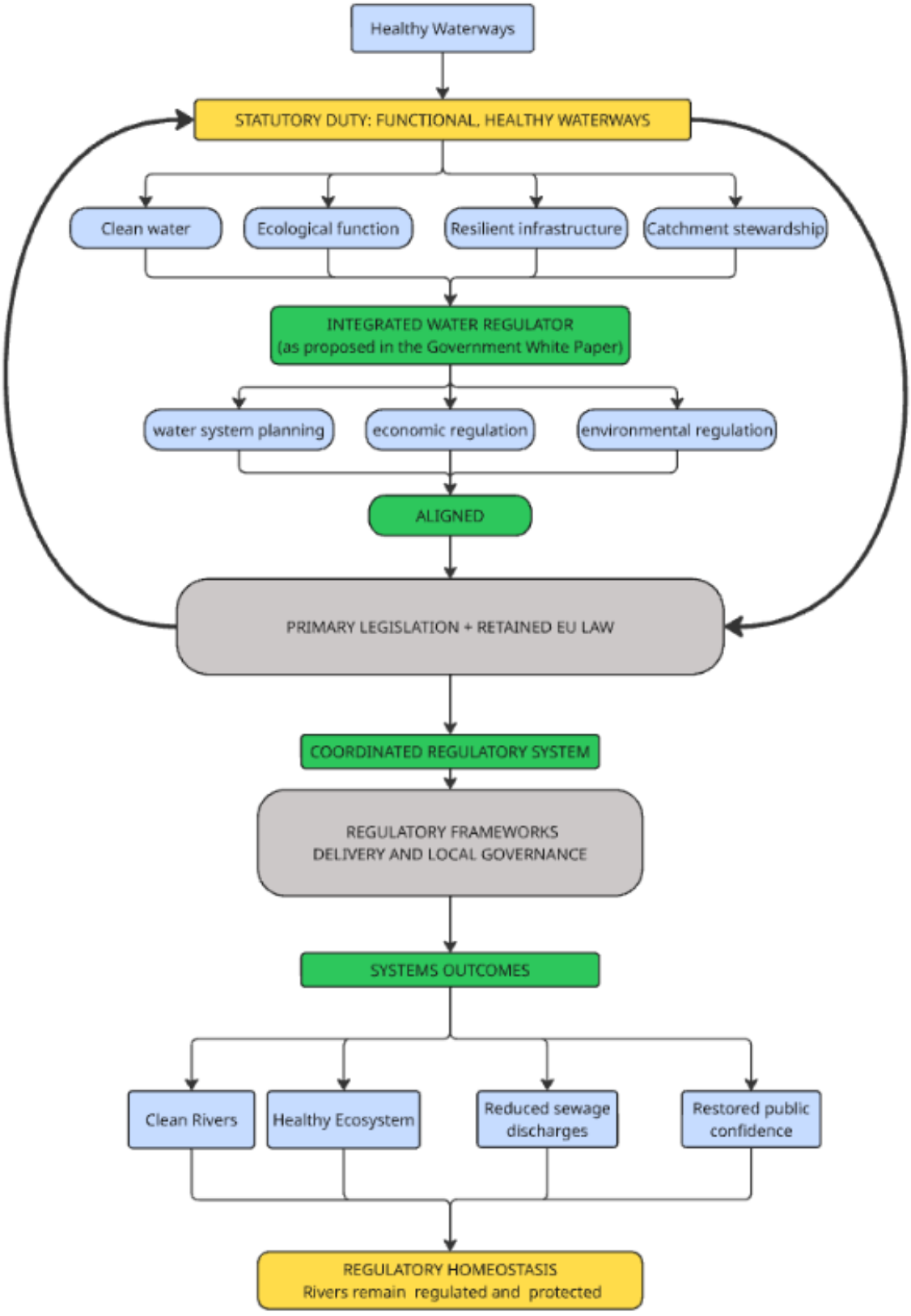


*Figure 4: Creating an umbrella legislative framework that coalesces existing legislation*

## 8. Delivering Reform: Aligning with the Government's Vision for Water

The principles developed in this paper provide a practical framework through which that ambition can be translated into legislative and institutional change. The priorities below are the conditions necessary to unlock investment, restore regulatory coherence and deliver healthy waterways.

1. Fair and proportionate regulation across all water users. This is the foundational requirement. Regulatory requirements must be applied on an equivalent basis across all activities affecting river systems, with scrutiny proportionate to demonstrated environmental risk. A framework that imposes detailed licensing and operational constraints on low-impact activities while permitting demonstrably harmful discharges elsewhere is not functioning as intended. Correcting this asymmetry is the prerequisite for everything else.

2. Recognition of sustainable water users as partners in delivery. The hydropower sector currently operates 1,657 schemes across the UK, generating 5,496 GWh of clean electricity annually, with a further 1 to 3 GW of undeveloped potential waiting to be unlocked.[5] This is reliable, low-carbon, baseload generation that complements wind and solar, produces two thirds of its output in winter when demand is highest, and depends entirely on clean, well-functioning rivers. The framework should formally recognise the sector's contribution to both clean energy and catchment stewardship, and design regulation accordingly.

3. Catchment-level stewardship embedded in governance. Effective river management depends on operational knowledge and local presence. Hydropower and mill operators monitor flow rates, track fish populations, manage silt accumulation and clear debris from watercourses continuously, at no cost to the public. Governance structures should formally embed this contribution, recognising long-established river users as active participants in catchment management alongside national regulators, not as subjects of regulation to be managed.

4. Statutory outcomes with transparent accountability. Legislation should define clear, measurable objectives for waterways, clean water, ecological function and resilient river systems, and align regulatory duties across all institutions to deliver them. Where institutions fail to meet those duties, as the Office for Environmental Protection found in relation to sewage overflow regulation, accountability must follow. Transparency of this kind applies equally to all sectors, including hydropower, and the industry welcomes it.

5. Alignment of economic and environmental regulation. Infrastructure investment decisions cannot be separated from the environmental duties they affect. The new integrated regulator must operate within a framework that aligns economic oversight with environmental outcomes, ensuring that investment flows to where it delivers the greatest benefit for both river health and energy security.

Taken together, these priorities provide a coherent basis for the Water Reform Bill. Figure 4 illustrates how the Government's vision can be translated into a coordinated legislative and regulatory framework. The role of hydropower and mill operators as active custodians of river systems is explored further in Appendix B.

[5] British Hydropower Association, *Hydropower in the UK*, 2024. https://british-hydro.org/hydropower-in-the-uk/


*Figure 5: Translating the Government's vision into a coordinated legislative and regulatory framework. Source: BHA analysis*

## 9. Delivering Legislative Reform in Practice

The Government's White Paper, "*A New Vision for Water*" recognises that reform of this scale requires a structured transition, supported by a clear roadmap and phased implementation. The introduction of an umbrella legislative framework should therefore be aligned with the proposed Transition Plan and the development of the Water Reform Bill.

In practice, this could be achieved through:

- Initial statutory duties introduced through primary legislation, establishing the overarching framework and core objectives
- Progressive alignment of existing regulatory regimes through secondary legislation and guidance
- Integration with regional water planning frameworks to ensure alignment between national objectives and local delivery
- Ongoing refinement through the new regulator's supervisory approach, ensuring that implementation remains adaptive and evidence-based

This phased approach would ensure continuity of service while enabling the system to transition towards a more coherent and effective legislative structure.

## 10. International Lessons: How Legislative Reform Has Restored Rivers

The challenges facing England's waterways are not unique. Across Europe, rivers devastated by industrial pollution and regulatory failure have been restored to health, not through incremental adjustment of existing rules, but through decisive legislative reform and coordinated governance. The following examples are particularly instructive, including one that offers a direct parallel to England's treatment of its hydropower sector.

### *10.1. The Rhine: from the sewer of Europe to a model of recovery*

By the mid-twentieth century, the Rhine had become one of the most polluted rivers in the world. Described as the sewer of Western Europe, it had been reduced by industrial discharge, agricultural runoff and untreated sewage to a river where fish populations had collapsed and drinking water supplies were at risk. The pollution culminated in a degradation of the river basin's ecological value that spurred the formation of the International Commission for the Protection of the Rhine as early as 1963.[6]

The turning point came not from tightening individual permits but from a fundamental redesign of the governance framework. Following the Sandoz chemical spill of 1986, which killed millions of fish and other wildlife, the Rhine Action Programme was established in 1987 with the goal of reducing

[6] International Commission for the Protection of the Rhine, *History of the ICPR*, ICPR, 2024. https://www.iksr.org/en/icpr

pollution levels by 50% within a decade, reinstating salmon populations that had vanished since the 1930s, and improving natural habitats along the riverbanks.[7]

The results were transformative. Between 1985 and 2000, point source inputs of most pollutants classified as priority substances fell by 70 to 100%, the degree to which municipalities and industries were connected to wastewater treatment plants increased from 85 to 95%, and water-related accidents were considerably reduced. [8]

Today, over 60 species of fish thrive in the Rhine. The lesson is not that more regulation was applied. It is that regulation was redesigned around a coherent statutory purpose, applied consistently across all sources of harm.

### *10.2. Switzerland: statutory reform and infrastructure investment*

Switzerland's experience mirrors the Rhine story at a national level. The Federal Water Protection Act led to the rapid expansion of sewage treatment across Switzerland, with subsequent legislation institutionalising the integral protection principle over the entire aquatic system.[9] Rather than adjusting individual regulatory controls, Swiss policymakers established a comprehensive legislative framework requiring municipalities to collect and treat sewage before discharge, supported by substantial federal funding for wastewater infrastructure. As new pressures emerged, including phosphorus pollution and micropollutants from pharmaceuticals and household chemicals, the statutory framework was updated to require additional treatment technologies. Swiss water protection is widely regarded as a success story, with wastewater treatment described as a particular achievement, though challenges remain regarding river structure, water quality and biodiversity.[10]

The Swiss legislative framework is also directly relevant to hydropower. Switzerland's water protection policy includes specific measures to restore rivers affected by hydropower, including the remediation of fish migration barriers, restoration of bedload regimes and river revitalisation programmes.[11] Critically, these requirements were introduced within a coherent statutory framework applying *proportionate* obligations across all water users, not selectively to one sector while others operated under lighter-touch arrangements. The Swiss legislative pathway is illustrated in Figure 5, which traces the relationship between statutory reform, infrastructure investment and measurable improvement in river water quality. Improvement did not follow from the adjustment of individual regulatory controls. It followed from a deliberate decision to redesign the framework itself, align investment behind clear statutory objectives and apply requirements consistently across all water users. The parallel with England's current position is direct.


*Figure 5: Switzerland's legislative and infrastructure pathway to improved river water quality*

[7] International Commission for the Protection of the Rhine, *Rhine Action Programme*, ICPR. https://www.iksr.org/en/icpr/predecessor-programmes/rhine-action-programme

[8] International Commission for the Protection of the Rhine, Rhine Action Programme: Results, ICPR, 2001

[9] Eawag, *Water Timeline: The History of Swiss Water Protection*, 2024. https://www.eawag.ch/en/info/portal/news/news-detail/water-timeline-the-history-of-swiss-water-protection/

[10] Federal Office for the Environment (FOEN), *Topic: Water*, Switzerland, 2024. https://www.bafu.admin.ch/en/water

[11] Federal Office for the Environment (FOEN), *Water: In Brief*, Switzerland, 2024. https://www.bafu.admin.ch/en/state-water

### *10.3. The Netherlands: integrated statutory governance*

The Netherlands reorganised its entire approach to water management through the Water Act of 2009, consolidating responsibilities for water quantity, water quality and flood risk within a single legislative structure. The main features of the Dutch water governance system are its regional water authorities based on hydrological scales with powers to regulate, decide and raise taxes for their water tasks. Their functional approach and decentralised character make the regional water authorities efficient and effective, and EU institutions and other member states consider the Dutch system a potential source of inspiration for other jurisdictions.[12]

The Dutch experience also offers an honest cautionary note. Empirical research from the Netherlands shows that cross-sectoral approaches to water quality improvement are only limitedly supported by legislation alone, and that a tendency to stick to current practices has created a lock-in situation that hampers delivery.[13] This reinforces the argument made in this paper: a strong statutory framework is necessary but not sufficient. It must be accompanied by clear accountability, consistent enforcement and genuine proportionality in how regulatory requirements are applied across all sectors.

### *10.4. Sweden: a direct parallel for England's hydropower sector*

Sweden's experience is the most directly relevant to England's position. Faced with the challenge of aligning its hydropower sector with the EU Water Framework Directive, Sweden undertook a comprehensive legislative overhaul rather than relying on discretionary, guidance-based mechanisms. Sweden's 2019 legal reform introduced a statutory duty on water authorities to declare water bodies as heavily modified where appropriate conditions were met, and formalised strategic guidelines for each river basin through a national plan that determined clear timetables for permit reviews.[14]

The National Plan for Modern Environmental Conditions for Hydropower requires all Swedish hydropower owners to apply for new permits that include modern environmental provisions over a twenty-year period[15]. The overall aim is to provide the maximum possible benefit to the aquatic environment while maintaining a nationally effective supply of hydropower electricity. This approach provided hydropower operators with regulatory certainty while ensuring environmental requirements were met through a transparent, evidence-based statutory process rather than through inconsistent discretionary decisions.

Sweden's experience is not without its difficulties. The European Commission has initiated infringement proceedings against Sweden on the basis that national law does not provide for sufficiently frequent periodic reviews of relevant controls, noting that the majority of Sweden's

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[12] Keessen et al., *Strengths and Weaknesses of the Dutch Implementation of the Water Framework Directive*, Journal for European Environmental and Planning Law, Brill, 2017. https://brill.com/view/journals/jeep/14/3-4/article-p269_269.xml

[13] Lintsen et al., *Moving forward to achieve the ambitions of the European Water Framework Directive: Lessons from the Netherlands*, ScienceDirect, 2023. https://www.sciencedirect.com/science/article/pii/S0301479723002128

[14] Soininen and Platjouw, *Adapting Hydropower to European Union Water Law: Flexible Governance versus Legal Effectiveness in Sweden and Finland*, Transnational Environmental Law, Cambridge Core, 2024. https://www.cambridge.org/core/journals/transnational-environmental-law/article/adapting-hydropower-to-european-union-water-law-flexible-governance-versus-legal-effectiveness-in-sweden-and-finland/7786EBCB28D02704C31C4021C4C6BF7F

[15] *KTH Water Blog, How do we make the most of Swedish rivers for hydropower and ecosystems?, 2024.* *https://www.kth.se/blogs/water/2022/03/how-do-we-make-the-most-of-swedish-rivers-for-hydropower-and-ecosystems/*

hydropower dams operate on permits dating back to between 1918 and 1978.[16] This reinforces rather than undermines the central argument: where regulation is not embedded clearly within a coherent statutory framework with defined timetables and consistent application, neither operators nor regulators have the certainty they need to deliver environmental outcomes efficiently.

### *10.5. The lessons for England*

Across all four cases, the common thread is not the volume of regulation but its coherence. Rivers recovered when governance was redesigned around clear statutory outcomes, backed by adequate investment and applied consistently across all sources of harm. Critically, none of these countries achieved this by treating their hydropower sectors as obstacles. In each case operators were given clarity, consistency and in some instances direct financial support to meet environmental requirements. The approach was collaborative, not adversarial. Rivers improved. Clean energy generation continued.

None of these countries have fully resolved the pressures facing their waterways. Nutrient pollution, habitat degradation and the legacy of historic infrastructure remain live challenges across Europe. What these examples demonstrate is not perfection but progress: each country made deliberate structural decisions to redesign its legislative framework around coherent statutory outcomes and achieved measurable improvements as a result. The Dutch experience adds an important warning that legislation well designed but inconsistently enforced will fall short of its objectives.
The lesson for England is not that these countries have solved the problem. It is **that they have built the framework within which the problem can be solved.** England faces the same underlying pressures and now has the same legislative opportunity. The Water Reform Bill is the moment to seize it.

| CURRENT SYSTEM | REFORMED SYSTEM |
|---|---|
| fragmented | aligned |
| inconsistent | outcome-driven |
| reactive | proportionate |
| sector-based | system-based |

## 11. Conclusion: The Need for Legislative alignment

England's rivers remain in poor condition despite an extensive regulatory framework. This reflects not a lack of regulatory effort, but a lack of coherence in how that effort is structured and applied. The Government's White Paper, "*A New Vision for Water*" has recognised this challenge and set out a clear direction towards a more integrated, outcome-focused system. This paper supports that direction and argues that legislative alignment is the critical next step required to ensure that institutional reform delivers meaningful and lasting environmental outcomes.

The regulatory paradox identified in this paper is not a matter of opinion. It is documented by the Environment Agency's own data, confirmed by the Cunliffe Review's finding that the current legislative framework has generated an overly cautious approach to regulation. The hydropower

[16] Smart Water Magazine, *The European Commission calls on Sweden to comply with the Water Framework Directive*, 2024. https://smartwatermagazine.com/news/european-commission/european-commission-calls-sweden-comply-water-framework-directive

sector is not asking for special treatment. It is asking for the same thing that good environmental governance requires of any regulatory system: that requirements be proportionate to risk, that scrutiny be applied consistently across all sectors, and that the framework be designed around outcomes rather than processes. A sector that monitors river flows, tracks fish populations, clears debris from watercourses and has managed England's rivers continuously since medieval times should be recognised as part of the solution to England's water crisis, not treated as a source of risk to be managed. The international evidence is unambiguous. Rivers recover when governance is redesigned around coherent statutory outcomes, applied consistently and backed by genuine accountability. Switzerland did it. The Rhine states did it. Sweden is doing it. In each case the decisive factor was not the volume of regulatory effort but its coherence, and the willingness of governments to apply requirements proportionately across all actors rather than selectively across some.

The Water Reform Bill represents a generational opportunity to do the same for England. The BHA calls on Government to use that Bill to introduce an umbrella statutory framework for waterway health, embedding proportionality within statute, aligning regulatory duties consistently across all sectors and formally recognising the role of sustainable water users in the management and restoration of England's rivers.

To that end, the BHA invites Government to consider the following priorities in the development of the Water Reform Bill and associated reforms:

1. **Establishing a clear statutory framework for waterway health.**
   This should introduce an overarching duty to secure clean water, ecological function and resilient river systems, ensuring that all existing regulatory regimes operate within a coherent and outcome-focused legislative structure.
2. **Embedding proportionality within the statutory framework.**
   Regulatory requirements should be explicitly linked to demonstrated environmental risk, ensuring that similar activities are subject to equivalent levels of scrutiny and that regulatory effort is directed towards the most significant sources of environmental harm.
3. **Aligning regulatory regimes and institutional responsibilities.**
   Abstraction, discharge, planning and environmental protection regimes should be coordinated within a unified framework, supported by the proposed integrated regulator, so that decision-making across sectors contributes consistently to shared environmental outcomes.
4. **Strengthening transparency and accountability in delivery.**
   The framework should establish clear, measurable objectives for waterway health and ensure that all relevant institutions are accountable for delivering them, with consistent application across all sectors and activities affecting river systems.
5. **Recognising the role of sustainable water users in catchment management.**
   The framework should support collaborative, catchment-based approaches that incorporate the knowledge and stewardship of those who actively manage and depend on river systems, alongside the role of regulators and infrastructure providers.

The BHA stands ready to work constructively with Government, the new integrated regulator and other stakeholders to deliver these reforms. England's rivers deserve a framework that is coherent, fair and designed around their recovery. So does the industry that has depended on and cared for those rivers for centuries.

## 12. Appendix A

The regulatory asymmetry is most starkly illustrated by the treatment of eels for example. Hydropower operators are subject to mandatory obligations under the Eels (England and Wales) Regulations 2009, including the installation of eel screens, eel passes and by-wash systems, on the basis that their infrastructure may affect eel populations. These requirements apply regardless of the scale of the scheme or the demonstrated level of risk. Yet peer reviewed research has found that sewage effluent plumes actively block eel migration, with 59% of tracked eels displaying avoidance behaviour when encountering wastewater discharge points during downstream migration.[17] In 2024, 54% of English waterbodies failed their ecological targets because of sewage and wastewater discharged by water companies,[18] and research by the University of Oxford has demonstrated that sewage discharge causes mass fish mortality through oxygen depletion.[19] The hydropower industry does not object to eel screening requirements in principle. Where infrastructure poses a genuine risk to eel passage, proportionate mitigation is entirely reasonable. The difficulty is that screening eels away from a turbine becomes a largely futile exercise when the watercourse those eels inhabit is subject to repeated discharges of untreated sewage, pharmaceuticals, microplastics and antibiotic-resistant bacteria, all under permits issued by the same regulator. You cannot protect a species at one point in a river while licensing its poisoning upstream. The precautionary principle is not being applied consistently. It is being applied selectively, and the selection bears no relationship to the scale or source of harm.

## 13. Appendix B: Hydropower, Custodians of the waterways

At its core, an effective framework should ensure high standards of water quality, preventing rivers from functioning as routine conduits for untreated pollution. It should maintain ecological function within river systems, supporting biodiversity, enabling fish migration and sustaining connected aquatic habitats. It should also support long-term infrastructure resilience, including sustained investment in the assets and institutions needed to meet current and future needs.

It should also strengthen stewardship of river systems by recognising the role of those who depend on and actively manage waterways. This stewardship role is often overlooked in regulatory design, yet it represents a significant and largely unrecognised contribution to the health of England's rivers.

Hydropower and mill operators are among the most active custodians of England's waterways. Many of these sites have medieval origins, representing centuries of continuous river management and an intimate, site-specific knowledge of how individual watercourses behave across seasons and conditions. That knowledge is not replicated by any regulatory body.

In practical terms, hydropower operators routinely monitor flow rates and water levels, track fish populations and observe silt accumulation as part of their day to day operations. They clear debris, remove litter and manage rubbish from their weirs and intakes, not only to protect their equipment but in doing so providing an active environmental service that benefits the entire catchment. This is

[17] Westerberg et al., *Wastewater plumes can act as non-physical barriers for migrating silver eel*, PLOS ONE, 2023. https://pmc.ncbi.nlm.nih.gov/articles/PMC10298781/

[18] Environment Agency, *Water and Sewerage Companies in England: Environmental Performance Report 2024*, 2024. https://www.gov.uk/government/publications/water-and-sewerage-companies-in-england-environmental-performance-report-2024

[19] University of Oxford, *New study finds that sewage release is worse for rivers than agriculture*, 2023. https://www.ox.ac.uk/news/2023-09-22-new-study-finds-sewage-release-worse-rivers-agriculture

river stewardship in its most direct form, carried out consistently, at no cost to the public and largely without recognition within the current regulatory framework.

Weirs and mill structures associated with hydropower sites also provide wider public benefits that are rarely acknowledged in regulatory assessments. These structures serve as points of access to rivers for recreational users, supporting fishing, canoeing and kayaking, and maintaining public rights of way along riverbanks that have been in continuous use for generations. The communities and landscapes these sites sustain are part of England's cultural and natural heritage.

A regulatory framework designed around first principles would recognise this contribution explicitly. It would understand that those with the greatest operational stake in the health of a river are among its most reliable guardians, and that effective waterway governance requires their active participation rather than their treatment as a source of risk to be managed. Taken together, these principles provide a clear basis against which the effectiveness of the current legislative framework can be assessed, and against which future reform should be designed.