

HERITAGE RESILIENCE PLAN (HRP) FOR LOUGH NEAGH



DATE: MARCH 2026



Acknowledgements: -

Without the contributions and support of the following organisations and individuals, this document would not have been possible. First and foremost, we extend our sincere gratitude to The National Lottery Heritage Fund (Northern Ireland) for its full support in the development of the *Lough Neagh 10-Year Heritage Resilience Plan*.

We also wish to acknowledge HTE Consultants for producing this outstanding and highly significant document, which will play a vital role in safeguarding the unique heritage of Lough Neagh for future generations.

Our thanks are further extended to the Board and staff of the Lough Neagh Partnership for their continued support and commitment throughout the development of the *Lough Neagh Heritage Resilience Plan*.

Finally, we are deeply grateful to the many consultees and stakeholders whose valuable contributions, insights, and shared expertise helped to shape and strengthen the Plan and especially the members of the 'Forever Lough Neagh Board' & the National Trust.

Contents

Foreword from Gary McErlain Chairman, Lough Neagh Partnership.....	iv
Heritage Resilience for Lough Neagh: Towards a Living Strategy of Renewal.....	1
Embedding a Just Transition into the Heritage Resilience Strategy and Plan for Lough Neagh .	3
METHODOLOGY	6
Section 1	10
Heritage Resilience Plan for Lough Neagh: Part 1a	10
A review of existing Heritage Policies, Conservation Strategies, Governance Models, and Environmental Legislation relevant to Lough Neagh.....	10
INTRODUCTION	11
BIODIVERSITY, ECOLOGY AND WATER MANAGEMENT	13
CULTURAL AND BUILT HERITAGE POLICIES - LEGAL PROTECTION AND COMMUNITY INTEGRATION.....	17
GOVERNANCE, ENVIRONMENTAL LAW, AND CLIMATE RESILIENCE IN THE LOUGH NEAGH REGION	19
THE INTEGRATED HERITAGE RESILIENCE FRAMEWORK FOR LOUGH NEAGH – THE ‘FOREVER LOUGH NEAGH’ APPROACH	23
Heritage as a Framework for Resilience and Identity	26
Governance, Policy Integration, and Sustainable Futures	26
Legacy, Learning, and Long-Term Impact	27
Proposing a Vision and Core Principles for the Heritage Resilience Plan.....	27
Alignment with Strategic and Legislative Frameworks.....	28
CONCLUSION AND POLICY RECOMMENDATIONS	29
Final Reflections.....	33
REFERENCE SOURCES.....	34
Section 1	49
Heritage Resilience Plan for Lough Neagh: Part 1b.....	49
Enhancing the Heritage Resilience Plan for Lough Neagh through international benchmarking and strategic alignment.	49
INTRODUCTION	50
COMPARATIVE BENCHMARKING FRAMEWORK	51
GOVERNANCE INTEGRATION: LESSONS IN INSTITUTIONAL COHESION AND AUTHORITY ..	53
CULTURAL AND NATURAL HERITAGE INTEGRATION: HARMONISING LANDSCAPE IDENTITIES	55

COMMUNITY PARTICIPATION: EMBEDDING LOCAL AGENCY IN RESILIENCE PLANNING	57
CLIMATE ADAPTATION: EMBEDDING RESILIENCE WITHIN HERITAGE FRAMEWORKS.....	59
TOWARDS A COHERENT STRATEGIC FRAMEWORK FOR LOUGH NEAGH.....	61
CONCLUSION AND RECOMMENDATIONS	62
BIBLIOGRAPHY AND REFERNECE SOURCES	63
APPENDICES.....	65
Section 1	69
Heritage Resilience Plan for Lough Neagh: Part 1c	69
Risk and Vulnerability Analysis of Lough Neagh	69
INTRODUCTION	70
THE NEED FOR A HERITAGE RISK AND VULNERABILITY ANALYSIS	71
SUMMARY BACKGROUND TO LOUGH NEAGH	72
CHANGES IN THE LAST 20 YEARS.....	75
PHYSICAL AND ENVIRONMENTAL THREATS AND ASSETS AT GREATEST RISK.....	79
Socio-Economic and Community Impacts	88
Cultural Heritage (Built and Intangible)	89
EMERGING AND CUMULATIVE THREATS	95
MITIGATION AND ADAPTATION STRATEGIES	98
CONCLUSION: TOWARD A RESILIENT FUTURE FOR LOUGH NEAGH	103
A Call to Action.....	104
Section 2	105
Heritage Resilience Plan for Lough Neagh: Part 2a	105
Business Stakeholder Engagement	105
BUSINESS STAKEHOLDER ENGAGEMENT SURVEY REPORT	106
Section 2	112
Heritage Resilience Plan for Lough Neagh: Part 2b.....	112
NGOs, Academia, and Community Group Stakeholder Engagement	112
NGOS, ACADEMIA, AND COMMUNITY GROUP STAKEHOLDER ENGAGEMENT SURVEY REPORT	113
Section 2	127
Heritage Resilience Plan for Lough Neagh: Part 2c.....	127
Decision Maker Stakeholder Engagement	127
STATUTORY, COUNCIL AND DECISION MAKER STAKEHOLDER ENGAGEMENT SURVEY REPORT	128
Section 3	137
Heritage Resilience Plan for Lough Neagh: Part 3a	137

Development of Strategic Objectives and Action Plan	137
Heritage Resilience Plan for Lough Neagh: A 10-Year Framework for Ecological Recovery, Cultural Renewal, and Community Stewardship	138
INTRODUCTION	138
WHAT HERITAGE RESILIENCE MEANS	139
HERITAGE RESILIENCE PLAN VISION FOR LOUGH NEAGH.....	139
HERITAGE RESILIENCE PLAN MISSION FOR LOUGH NEAGH	140
HERITAGE RESILIENCE GOALS.....	141
IDENTIFICATION OF GOALS, OBJECTIVES AND ACTIONS	142
STRATEGIC GOALS, OBJECTIVES AND ACTIONS	143
GOVERNANCE AND MANAGEMENT FRAMEWORK.....	160
IMPLEMENTATION PLAN	163
MONITORING AND EVALUATION	177
RISK AND MITIGATION FRAMEWORK.....	182
CONCLUSION	186

Foreword from Gary McErlain

Chairman, Lough Neagh Partnership

I am pleased to present the Lough Neagh 10-Year Heritage Resilience Plan, the culmination of two years of careful research, collaboration and strategic planning.

This plan comes at a pivotal time for Lough Neagh. The Lough is currently facing unprecedented environmental pressures, most visibly through the widespread outbreak of blue-green algae. This crisis has highlighted both the fragility of this unique ecosystem and the urgent need for coordinated, long-term action to protect and restore it.

Lough Neagh is far more than a body of water. It is a place of immense natural beauty, rich biodiversity, deep cultural heritage and economic importance for the communities who live and work around its shores. It supports livelihoods, sustains wildlife, and shapes the identity of the region. Protecting its heritage — natural, built and cultural — is therefore not only an environmental responsibility, but a social and economic necessity.

This 10-Year Heritage Resilience Plan sets out a clear and ambitious framework to strengthen the Lough's resilience in the face of environmental change. It recognises the interconnected challenges we face and provides a roadmap for partnership working community engagement, conservation action and sustainable development.

The Lough Neagh Partnership is committed to working collaboratively with local communities, statutory agencies, landowners, environmental organisations and all stakeholders to deliver the actions outlined in this plan. Together, we can safeguard Lough Neagh for future generations and ensure that it remains a thriving, living landscape.

I would like to thank everyone who contributed their time, expertise and passion to the development of this plan. Its success will depend on our shared commitment to turning vision into action.

Gary McErlain
Chairman
Lough Neagh Partnership

March 2026

Heritage Resilience for Lough Neagh: Towards a Living Strategy of Renewal

Lough Neagh, the vast inland sea at the heart of Northern Ireland, is more than a body of water. It is a cradle of myth and memory, a source of sustenance and sanctuary, and a cultural landscape that has shaped, and been shaped by the people who live along its shores. Spanning over 150 square miles, it is the largest freshwater lake in the United Kingdom and Ireland and sustains 40% of Northern Ireland's drinking water. Yet beneath its tranquil surface, Lough Neagh is in crisis. Decades of environmental degradation and socio-cultural change have converged to place the Lough at a critical threshold. Rampant eutrophication, driven by runoff, untreated sewage, and sediment disturbance, has rendered the Lough hyper-eutrophic. Algal blooms now stretch across summer months, choking oxygen, stifling biodiversity, and creating public health risks. Iconic species such as the European eel, once the cornerstone of a thriving fishing tradition, have dwindled, and habitats from wet woodlands and wet grasslands to peatlands have been diminished or fragmented. Simultaneously, intangible cultural heritage including fishing customs, songs, boat-building, and religious traditions, has begun to fade, displaced by economic restructuring and a sense of lost stewardship. It is against this backdrop that the need for a Heritage Resilience Plan becomes urgent, not as a document of preservation alone, but as a bold reimagining of how Lough Neagh's natural, cultural, and built heritage can actively shape a more adaptive, inclusive, and sustainable future.

The concept of heritage resilience as highlighted by The National Lottery Heritage Fund and explored in global frameworks and critically examined by scholars like Neel Kamal Chapagain, offers a lens through which to understand this transformation. Resilience, in this context, is not merely the capacity to recover or 'bounce back' from disruption. It is the ability of heritage systems - human and ecological, tangible and intangible - to learn, adapt, and evolve in response to change. It demands that we see heritage not as static or sacred, but as living, porous, and entangled with contemporary life. In the case of Lough Neagh, this means looking beyond monuments and landscapes as objects of conservation. Instead, we must frame the Lough as a complex socio-ecological system in which communities, species, habitats, infrastructures, and memories co-exist. The resilience of this system depends not on freezing it in time, but on enabling its capacity to regenerate ecologically, economically, and culturally.

Environmental threats present both the starkest challenges and the clearest indicators of urgency. The Lough's declining water quality is not an isolated phenomenon; it is the product of land-use decisions, regulatory failures, invasive species and climate-driven shifts in rainfall and temperature. Addressing eutrophication, for example, cannot be achieved through environmental engineering alone. It requires the revitalisation of traditional land management practices - rotational grazing, wet meadow preservation, riparian buffers – at a catchment scale, that once safeguarded the Lough's margins. It requires community-led water monitoring that pairs scientific

data with local knowledge, and it demands the reintegration of ecological values into farming systems through policies like the Water Framework Directive, the Nitrates Directive, and DAERA's agri-environment schemes.

Equally vital is the restoration of biodiversity. The collapse of aquatic invertebrate populations, the spread of invasive zebra mussels, and the vanishing of native birds like the curlew are symptoms of a system out of balance. Yet resilience lies not only in technical solutions but in community-led stewardship. In recent years, local volunteers have safeguarded curlew chicks, built barn owl boxes, and undertaken butterfly surveys, quiet acts of ecological recovery deeply tied to a sense of place. The previous Lough Neagh Landscape Partnership projects funded by The National Lottery Heritage Fund have contributed to initiating conservation and protection actions across hundreds of hectares of wetland and woodland, showing how natural and cultural regeneration can go hand in hand.

The Lough is not only a biological asset. It is a repository of stories, rituals, and practices. The eel fishing tradition, for example, is a cultural system as much as an economic one, bound up with craft, kinship, and identity. As eel populations decline, so too do the skills of net-making, the songs sung on the water, and the knowledge of lunar cycles that guided harvests. The significance of this species is demonstrated through its Protected Geographical Indication (PGI) status, awarded by the EU in 2011, recognising its unique quality, flavour, and heritage. Rebuilding resilience here means investing in living heritage: training in boatbuilding and eel long-line making; community festivals that honour old traditions; oral history projects that record and retell the voices of the past. Built heritage, too, holds untapped potential. The Lough's historic canal network, disused quays, and ecclesiastical ruins such as those on Ram's Island and Church Island can be reconnected to local life through sensitive reuse, heritage trails, and interpretive storytelling. Projects to conserve the built heritage or revitalise navigation systems are not simply about aesthetics; they are about anchoring a shared identity in the landscape. These physical anchors can become hubs of cultural programming, ecological education, and heritage tourism, generate economic value while reinforce a sense of belonging.

Yet any vision for resilience must also reckon with governance. Lough Neagh suffers from a legacy of fragmented responsibility and contested ownership. While much of the bed is still held in private hands, dozens of agencies, councils, and community groups operate around its shores, often in silos. This institutional complexity undermines coordinated action and erodes public trust. As calls grow for the creation of a statutory Lough Neagh management body, the new Heritage Resilience Plan will reflect on new heritage governance models: examples that are inclusive, transparent, and rooted in shared stewardship. Legislation and policy already provide a scaffolding for action. The UK Planning Act (Northern Ireland), the Historic Environment Record, the Environmental Farming Scheme, the EU Habitats Directive, and the Water Framework Directive each offer tools to integrate heritage resilience into statutory processes. Potential funding streams from The National Lottery Heritage Fund to the Shared Island Fund can be harnessed to pilot innovative projects. Crucially, these mechanisms must be coordinated, not compartmentalised, within an integrated resilience strategy.

This Heritage Resilience Plan, therefore, is not a static document. It is a living strategy phased, participatory, and place based. It aims to build on over two decades of ecological and cultural investment, from site designations to the Lough Neagh Landscape Partnership. It hopes to synthesize community voices, academic research, policy frameworks, and pilot projects. Its ambition is to set out a ten-year roadmap in which heritage becomes both the medium and the message of renewal. At its core, the plan will seek to answer a simple but profound question: how can Lough Neagh's heritage - its waters, habitats and species, people and its stories - become not just a record of what has been lost, but a resource for what might be reclaimed? As we move into an era of increasing ecological volatility and cultural dislocation, the need for this kind of adaptive thinking has never been greater. Lough Neagh stands at a crossroads. This plan offers not just a way forward but a way home.

Embedding a Just Transition into the Heritage Resilience Strategy and Plan for Lough Neagh

In designing a heritage resilience strategy for Lough Neagh, it is imperative to recognise that resilience is not only about ecological restoration or infrastructure adaptation. It must also encompass the social, economic, and cultural fabric of the communities that live around and depend upon the lake. A Just Transition provides the ethical and strategic framework to ensure that heritage resilience efforts do not reproduce inequalities or deepen the marginalisation of local people, but instead offer a pathway to inclusive, sustainable futures rooted in fairness and community empowerment.

Lough Neagh, the largest freshwater lake in the British Isles, is a living landscape of immense environmental, cultural, and spiritual importance. For centuries, it has been the lifeblood of surrounding communities, supporting fishing, agriculture, peat extraction, tourism, and intangible cultural practices. However, like many landscapes facing intersecting pressures from climate change, pollution, biodiversity loss, and economic transition, the lake is undergoing profound transformation. This calls for urgent resilience planning that not only protects the heritage of Lough Neagh but ensures that those most affected by change are placed at the heart of decision-making and benefit from any gains that emerge.

A Just Transition approach to heritage resilience begins with a recognition of the full and multidimensional value of Lough Neagh. The lake is not merely an ecological asset or a site of economic potential; it is a cultural touchstone, a place imbued with memory, identity, and meaning. Eel fishing, for instance, is not only a livelihood but a tradition that embodies centuries of knowledge and practice, passed through generations. The reed beds and boglands, often seen only through the lens of conservation or carbon storage, are also sites of storytelling, spirituality, and local belonging. Understanding this broader heritage value compels a shift in how we design interventions—from imposing top-down conservation or development agendas, to fostering processes that sustain the lake's living heritage and the people who steward it.

Central to this is the principle of participatory governance. A Just Transition cannot occur without the inclusion of those who have historically shaped and been shaped by the landscape. Resilience planning for Lough Neagh must be co-created with fishers, farmers, indigenous knowledge holders, local councils, cultural groups, environmental NGOs, and especially young people who will inherit the future of the lake. Rather than tokenistic consultations, what is required are deep, sustained dialogues and collaborative forums where communities are partners in shaping priorities, identifying trade-offs, and crafting solutions. This includes creating accessible decision-making structures, supporting community representation, and embedding local knowledge into scientific and policy frameworks. Where historical grievances exist, these must be acknowledged openly and addressed constructively to rebuild trust.

One of the most pressing challenges in aligning heritage protection with Just Transition principles is ensuring that those whose livelihoods are disrupted by necessary ecological recovery are not abandoned. For Lough Neagh, this may include fishers impacted by declining water quality or quotas, or peat cutters affected by carbon sequestration targets. A heritage resilience strategy must include clear and adequately resourced pathways for livelihood transition. This could involve investing in training, reskilling, and support for local people to move into new roles connected to lake restoration, peatland and other habitat management, innovative use of dredging material, water monitoring, heritage interpretation, or ecotourism. These roles should not be extractive or short-term, but part of a long-term green economy strategy that aligns with the lake's cultural landscape.

Sustainable enterprise development will be key. Small-scale, community-led enterprises, such as traditional boat building, eel interpretation centres, heritage trails, and wetland tourism initiatives, should be nurtured and supported with micro-grants, mentorship, and access to markets. Importantly, these activities should reflect and celebrate the authentic heritage of the region rather than commodifying or erasing it. Equally, where landowners are being asked to shift toward nature-based solutions, such as catchment scale habitat restoration, wetland conservation, or regenerative farming, there must be equitable incentive schemes in place. Beyond that used by DAERA and central government, public and philanthropic funding from local industry, should be used to reward practices that support both ecological integrity and cultural continuity.

Ecological restoration itself must be carried out in ways that are socially equitable. Large-scale clean-up operations, habitat restoration projects, and biodiversity interventions should be designed to offer local employment, skill-building, and community ownership. Engaging local workers in these efforts not only ensures economic benefits remain within the region but helps ground restoration in local context and values. Traditional ecological knowledge, such as eel migration patterns, seasonal water changes, or plant harvesting techniques, should be seen not as quaint relics, but as sophisticated, place-based knowledge systems that can meaningfully inform modern scientific approaches.

Education and cultural revitalisation are also vital to a Just Transition. A resilience plan should include provisions for intergenerational learning, where elders and tradition-

bearers share stories, songs, crafts, and environmental practices with younger generations. Schools and community centres can become hubs for environmental education that links science with local heritage. Heritage trails, digital archives, and oral history projects can help reconnect people, especially youth, to the lake and its deeper meanings. In doing so, resilience becomes not only about surviving external threats but about nurturing internal bonds of identity, place, and continuity.

To ensure that these processes are effective, measurable, and accountable, a heritage resilience plan must include a robust set of indicators that go beyond ecological health. Social justice indicators, such as the number of sustainable local jobs created, levels of community participation in governance, perceptions of fairness, and access to cultural resources, should be monitored alongside water quality, biodiversity, and infrastructure resilience. Transparent evaluation frameworks, regular reporting, and accessible grievance mechanisms are all essential to ensuring that the transition remains genuinely just and not simply rhetorical.

Finally, the Lough Neagh heritage resilience strategy must be aligned with wider regional and national policies on climate adaptation, biodiversity recovery, cultural heritage, and rural development. There is growing recognition across the UK and Ireland of the importance of Just Transition principles in environmental planning. Tapping into existing frameworks and funding mechanisms such as the UK Shared Prosperity Fund, the Heritage Lottery Fund, EU cross-border environmental programmes, and Just Transition funds can provide crucial financial and policy support. Moreover, by positioning Lough Neagh as a model of integrated, community-led resilience, Northern Ireland can contribute to global best practices in landscape-scale heritage regeneration.

In conclusion, a Just Transition approach to heritage resilience at Lough Neagh is not an optional add-on; it is the foundation of a sustainable and ethical response to the ecological and social crises facing the lake. By centring the voices, rights, and wisdom of those who call the lake home, and by ensuring that the benefits of change are shared fairly, we can protect the rich tapestry of heritage that Lough Neagh represents. This is not simply about preserving the past but about forging a future in which ecological health, cultural integrity, and social justice are mutually reinforcing. In this way, Lough Neagh can stand not only as a site of natural beauty and historical depth but as a beacon of resilient, inclusive, and just transformation.

Section	Summary
Holistic Heritage Values	Heritage includes natural ecosystems, cultural practices, and social memory. A Just Transition recognises the interconnectedness of ecology, culture, and community.
Participatory Governance	Community-led decision-making is essential. Local voices—especially marginalised groups—must help shape restoration strategies through co-production and real governance power.
Sustainable Livelihoods	Transitioning away from declining industries requires job creation, training, and support for new roles in restoration, tourism, heritage, and sustainable enterprise.

Inclusive Ecosystem Restoration	Restoration should provide paid local work, integrate traditional knowledge, and support landowners in nature-positive practices to foster both ecological and community resilience.
Education and Youth Engagement	Intergenerational learning and youth leadership programmes can deepen stewardship of Lough Neagh. Community education hubs and heritage interpretation strengthen identity and awareness.
Monitoring and Accountability	Justice-focused indicators, citizen science, and clear grievance mechanisms ensure that progress is fair, inclusive, and transparent.
Policy and Funding Alignment	The strategy should align with broader policy frameworks and tap into funding sources. Multi-sector collaboration enhances effectiveness and longevity.

METHODOLOGY

The development of the Lough Neagh 10-Year Heritage Resilience Plan is guided by a structured and participatory methodology that emphasises evidence-based research, inclusive consultation, and phased planning. The approach is designed to ensure that conservation efforts are both sustainable and resilient, while also being responsive to the needs of local communities and aligned with national and international best practice. To achieve this, the methodology unfolds across five interconnected phases: research and situational analysis; stakeholder engagement and data collection; the development of strategic objectives and an action plan; review, finalisation and approval; and, finally, presentation and dissemination. Each of these stages builds upon the preceding work and is supported by defined outputs, ensuring clarity, transparency, and accountability throughout the process (Table 1).

Phase 1: Research and Situational Analysis

The first phase focuses on establishing a strong foundation of knowledge about the heritage landscape of Lough Neagh. It begins with a comprehensive review of existing heritage policies, governance models, and environmental legislation, which are then benchmarked against case studies from across the UK, Ireland, and further afield. This allows for the identification of best practices and an assessment of how well current strategies align with broader frameworks. Alongside this policy review, a detailed risk and vulnerability analysis is carried out to identify the range of pressures affecting Lough Neagh's heritage. These include climate change, habitat loss, cultural erosion, and development pressures. As part of this phase, stakeholders are mapped and categorised to clarify their roles and levels of influence. Early engagement with representatives of government agencies, local councils, conservation organisations, and community groups ensures that their concerns and expectations inform the research process. The findings from this phase are consolidated into a situational analysis report, which provides a baseline assessment of Lough Neagh's heritage status, risks, and opportunities.

Phase 2: Stakeholder Engagement and Data Collection

Building upon the situational analysis, the second phase is dedicated to gathering insights directly from the diverse communities and stakeholders connected to Lough Neagh. A programme of workshops and focus groups was organised in several locations around the lough, creating spaces for residents, conservationists, heritage experts, and local historians to discuss priorities and share knowledge. Participatory mapping techniques were used to identify areas of cultural and ecological significance. At the same time, structured surveys were distributed to business owners and conservation groups, while semi-structured interviews with policymakers and landowners, allowed for deeper exploration of strategic and financial challenges. Intangible heritage, such as oral histories, traditions, and folklore, was documented in collaboration with local artists, musicians, and storytellers, ensuring that cultural narratives were preserved alongside physical assets. The data gathered was analysed thematically to identify recurring concerns, community priorities, and gaps in existing conservation efforts. These findings are captured in a stakeholder consultation report, which provides an essential link between the knowledge generated in Phase 1 and the planning work of the subsequent phase.

Phase 3: Development of Strategic Objectives and Action Plan

The third phase translates the research and consultation findings into a structured plan of action. Strategic goals for conservation are defined in alignment with evidence collected in Phase 1 and 2 and are organised into short, medium, and long-term horizons, providing a framework for action over the full ten-year period. A governance and management framework was developed to clarify the roles and responsibilities of stakeholders and to establish a multi-stakeholder structure capable of overseeing implementation, funding, and monitoring. At the same time, risk mitigation and sustainability strategies were devised to address environmental, social, and financial vulnerabilities, while also proposing models for long-term funding, such as partnerships and grant schemes. The phase culminates in the drafting of a comprehensive implementation roadmap that sets out a detailed timeline with milestones, actions, and responsibilities, supported by a monitoring and evaluation framework. These elements are drawn together into the draft 10-Year Heritage Resilience Plan, which is the principal output of this stage.

Once the draft plan has been prepared, it enters a period of refinement and validation. A series of roundtable discussions and expert reviews was convened to assess the robustness of the strategies and sustainability measures. Feedback from stakeholders was carefully integrated, and revisions made to strengthen both the technical and policy dimensions of the plan. The revised document was then submitted to the Lough Neagh Partnership and other key decision-making bodies for formal approval. By the close of this phase, the plan has evolved into a fully reviewed and endorsed strategic document that commands broad support across stakeholder groups.

Phase 4: Presentation and Dissemination

The final phase of the methodology was concerned with ensuring accessibility and public awareness of the plan. A programme of briefings will be scheduled to be delivered to government agencies, conservation organisations, community leaders,

and local residents, accompanied by the publication of digital versions on the Lough Neagh Partnership's website and social media platforms.

Throughout all phases, the methodology was underpinned by stakeholder engagement and communication strategy designed to ensure transparency, inclusivity, and responsiveness. Taken together, this methodology provides a clear and structured pathway for the development of the Lough Neagh 10-Year Heritage Resilience Plan. It combines research with inclusive consultation, ensuring that the final plan is not only technically sound but also reflective of the values and priorities of those who live and work around the lough. By embedding resilience, sustainability, and collaboration at its core, the methodology lays the groundwork for safeguarding the heritage of Lough Neagh for future generations.

Table 1: Table: Logic Model supporting methodology for developing the Lough Neagh Heritage Resilience Plan

Components	Details
Inputs	a) Existing heritage policies, governance models, environmental legislation b) Expertise from government agencies, conservation organisations, councils, academics, community groups c) Research tools (participatory mapping, surveys, interviews, focus groups) d) Documentation of oral histories, folklore, traditions e) Funding and institutional support from the Lough Neagh Partnership and stakeholders
Activities	Phase 1: Research & Situational Analysis • Review policies, governance frameworks, legislation • Benchmark against UK, Irish, and international best practice • Conduct environmental, cultural, socio-economic risk and vulnerability analysis • Map and categorise stakeholders and engage them in consultations Phase 2: Stakeholder Engagement & Data Collection • Organise workshops and focus groups • Conduct participatory mapping of cultural/ecological assets • Distribute surveys to businesses and conservation groups • Conduct semi-structured interviews with policymakers and landowners • Collect and document intangible heritage • Thematic analysis to identify priorities and gaps Phase 3: Strategic Objectives & Action Plan • Translate findings into short, medium, and long-term goals • Develop governance and management frameworks

	• Devise risk mitigation and sustainability strategies • Draft implementation roadmap (milestones, responsibilities, monitoring) • Produce Draft 10-Year Heritage Resilience Plan Phase 4: Review, Finalisation & Dissemination • Conduct expert reviews, roundtables, stakeholder validation • Revise draft plan • Secure formal approval • Disseminate via briefings, digital platforms, public engagement
Outputs	✓ Situational Analysis Report ✓ Stakeholder Consultation Report ✓ Draft 10-Year Heritage Resilience Plan ✓ Final endorsed Heritage Resilience Plan ✓ Public presentations, briefings, digital dissemination materials
Short- to Medium-Term Outcomes	1. Strong evidence base for heritage resilience planning 2. Inclusive stakeholder participation 3. Clear governance structures and responsibilities 4. Increased awareness of tangible and intangible heritage 5. Strengthened relationships between government, conservationists, and communities
Long-Term Impacts	1. Resilient, sustainable framework for heritage conservation and management 2. Enhanced protection of cultural, historical, ecological assets 3. Improved adaptability to risks (climate change, development, cultural erosion) 4. Stronger community ownership of heritage and identity 5. Alignment with national/international heritage management standards

Section 1

Heritage Resilience Plan for Lough Neagh:

Part 1a

A review of existing Heritage Policies, Conservation Strategies, Governance Models, and Environmental Legislation relevant to Lough Neagh.

INTRODUCTION

Context and Rationale

Lough Neagh, the largest freshwater lake in the British Isles, occupies a unique ecological, cultural, and socio-political space within Northern Ireland's landscape. Extending over approximately 392 Km², and bordered by five local council areas, it sustains a mosaic of aquatic, wetland, and riparian habitats of European and global significance. The Lough is designated as a Ramsar Site, a Special Protection Area (SPA) under the EU Birds Directive, and includes numerous Areas of Special Scientific Interest (ASSIs), reflecting its irreplaceable biodiversity value (Appendix 1). Its archaeological landscapes, vernacular architecture, traditional fishing cultures, and spiritual and mythological associations collectively constitute a heritage resource of both tangible and intangible significance.

Despite this recognised importance, Lough Neagh currently faces a convergence of acute challenges. These include diffuse and point source pollution, blue-green algal blooms, loss of wetland habitats, and insufficient governance integration across policy domains. Simultaneously, climate change threatens to exacerbate existing pressures through altered hydrological regimes, increased eutrophication risk, and damage to vulnerable heritage assets. These compounding threats, combined with fragmented management frameworks and historic underinvestment in heritage-led approaches, make a compelling case for the development of a holistic and integrated Heritage Resilience Plan for Lough Neagh.

Aims and Objectives

This study undertakes a comprehensive review of the policies, strategies, governance structures, and legislative instruments that shape heritage and environmental protection across the Lough Neagh region. It assesses their coherence, integration, and operational effectiveness in conserving the Lough's ecological and cultural values, before proposing a policy-aligned Heritage Resilience Framework. This Framework is designed to address structural gaps in governance, adapt to climate risks, restore landscape-scale connectivity, and embed heritage resilience within wider water and land-use management.

Key objectives include:

- To critically evaluate existing heritage and environmental governance instruments as they pertain to Lough Neagh, drawing upon UK, EU, council-level, and NGO-based strategies.
- To identify synergies, conflicts, and omissions across biodiversity, water, cultural, and climate policies.
- To integrate international frameworks such as the European Landscape Convention and the Convention on Biological Diversity into regional and local contexts.

- To assess the value of a Heritage Resilience Plan against the DAERA's 37-point Lough Neagh Report and Action Plan alongside alignment with the development of 'Forever Lough Neagh'.
- To propose a Heritage Resilience Plan aligned with current and emerging legal, strategic, and policy instruments that can deliver climate-adaptive, socially inclusive, and culturally anchored environmental stewardship.

This report serves as a policy-facing document for informing decision-makers, heritage professionals, conservation NGOs, and community stakeholders engaged in safeguarding the future of Lough Neagh.

BIODIVERSITY, ECOLOGY AND WATER MANAGEMENT

Ecological Significance of Lough Neagh

Lough Neagh holds national and international ecological significance due to its rich and varied habitats, high biodiversity, and critical function within the hydrological cycle of Northern Ireland. The Lough and adjacent Lough Beg together constitute a Ramsar Site of international importance, designated for their extensive wetlands and exceptional waterfowl populations, including migratory species such as the whooper swan (*Cygnus cygnus*), tufted duck (*Aythya fuligula*), and pochard (*Aythya ferina*). The site is also recognised as a Special Protection Area (SPA) under the EU Birds Directive and as an Area of Special Scientific Interest (ASSI), which provides the highest level of domestic legal protection in Northern Ireland.

The Lough supports a diverse range of flora and fauna, including several Schedule 8 protected plant species under the Wildlife (NI) Order 1985, such as marsh pea (*Lathyrus palustris*) and the rare eight-stemmed waterwort (*Elatine hydropiper*). It is also one of the last strongholds of the endemic Irish pollan (*Coregonus autumnalis*), and a critical site for the European Eel (*Anguilla anguilla*), a species listed as critically endangered by the IUCN and holding PGI status.

These features have resulted in a landscape subject to multiple, overlapping legal designations and conservation programmes. However, the effectiveness of these instruments has been tested by escalating threats, most prominently from eutrophication driven by nutrient pollution, and compounded by the absence of a centralised statutory or interdepartmental management body for the Lough.

Policy Instruments for Biodiversity and Water Protection

Water Framework Directive and River Basin Management Planning

The EU Water Framework Directive (2000/60/EC) remains a foundational pillar of freshwater management in Northern Ireland, having been retained post-Brexit through domestic transposition via the Water Environment (Water Framework Directive) Regulations (NI) 2017 (the 2017 Regulations). The 2017 Regulations set out environmental objectives to prevent deterioration of surface water status and achieve “good ecological status” and “good water chemical status” for all surface waters through integrated river basin planning.

For Lough Neagh, the 3rd cycle River Basin Management Plan (RBMP) for the Neagh–Bann catchment, applies. The RBMP, updated for the 2022–2027 cycle, identifies key ecological pressures including nutrient loading, habitat fragmentation, and point-source and diffuse pollution. It outlines a cross-sectoral programme of measures targeting reductions in agricultural runoff, enhancements in wastewater treatment, and habitat restoration. Notably, it also highlights the importance of stakeholder participation and transboundary governance with the Republic of Ireland.

While the RBMP sets robust objectives, implementation has been constrained by enforcement gaps, underfunded remediation schemes, and the structural absence of a catchment-wide statutory or an interdepartmental management body for the Lough.

Thus, the ambitions of the WFD, while comprehensive on paper, have not always translated into tangible improvements on the ground.

Environmental Improvement Plan for Northern Ireland (EIPNI)

The Environmental Improvement Plan for Northern Ireland (2023), published by DAERA, represents a strategic consolidation of various environmental commitments, including biodiversity, climate resilience, and water quality. Drawing from global frameworks such as the UN Sustainable Development Goals (SDGs) and the Convention on Biological Diversity (CBD), the EIPNI articulates outcomes aligned with the UK's net-zero carbon trajectory and ecosystem recovery targets.

Strategic Environmental Outcome 1, focused on air, water, and land quality, identifies water quality restoration in lakes and rivers as a critical goal. Within this framework, Lough Neagh is specifically prioritised due to its deteriorating ecological condition and socio-political salience. The Plan commits to enhanced monitoring of nutrient inputs, stricter controls on agricultural runoff, and more rigorous enforcement of wastewater discharge consents.

The EIPNI also emphasises nature-based solutions (NBS), aligning with the objectives of the Northern Ireland Biodiversity Strategy (2022). In the Lough Neagh context, this may include wetland re-creation, buffer zone establishment, and the deployment of ecological modelling frameworks that integrate hydrological, agricultural, and biodiversity considerations. It is therefore important that this gap between environmental strategy and practical conservation on the ground is addressed in this document.

Lough Neagh Action Plan (July 2024)

Responding to a critical algal bloom crisis in the summer of 2023, DAERA launched the Lough Neagh Report and Action Plan in July 2024. The Action Plan comprises 37 actions under four pillars - education, investment, regulation, and enforcement - and increased regulatory interventions via the Nutrients Action Programme Regulations (NI). It identifies the principal sources of eutrophication, namely agricultural nutrient loading and wastewater discharge, and outlines coordinated measures to mitigate them.

These include the rollout of a Soil Nutrient Health Scheme to assist farmers in sustainable fertilisation practices, expanded monitoring networks, targeted habitat restoration efforts, and increased regulatory interventions via the Nutrient Action Programme Regulations (NI) 2019. Importantly, the Plan has been endorsed by a broad coalition of stakeholders, including local councils, NGOs, and the Lough Neagh Partnership, suggesting a window of political and civic alignment that could underpin the success of future heritage planning efforts. It is important to note however that the majority of funding within this plan has been through the use of NIEA staff and there is a need to create more integration with NGO bodies like the Lough Neagh Partnership on the ground.

NGO and Community-Based Biodiversity Strategies

Non-governmental organisations have played a critical role in conservation and ecological restoration around Lough Neagh. Lough Neagh Partnership, for example,

has implemented wetland conservation projects and contributed to peatland restoration efforts that simultaneously benefit carbon sequestration and biodiversity.

Similarly, the RSPB has actively managed the Portmore Lough Reserve, a key satellite wetland adjacent to the south-east shore of Lough Neagh, supporting breeding lapwings and common tern and breeding/wintering waterfowl, while serving as a model for best practice in wet grassland management for breeding lapwings in particular. These NGO-led efforts complement statutory approaches by focusing on place-based action, public engagement, and demonstration projects, often supported by The National Lottery Heritage Fund (Heritage Fund).

[The National Lottery Heritage Fund and Biodiversity Integration](#)

The National Lottery Heritage Fund has been instrumental in financing heritage and biodiversity hybrid initiatives across the Lough Neagh region. Between 2016 and 2021, a major The National Lottery Heritage Fund funded initiative, the Lough Neagh Landscape Partnership Scheme, delivered a programme of natural, built and cultural heritage projects across the region. These projects illustrated the potential for multi-thematic interventions that bridge ecological, historical, and community goals, an approach that the proposed Heritage Resilience Plan will formally institutionalise. The Lough Neagh Landscape Partnership Legacy Plan (2021) also highlight future long term legacy themes to be included in any future strategy. These included:

- a) Conserving the landscape – “The primary aim of many of the partners involved with the Lough Neagh Landscape Partnership Programme is to conserve the heritage of the partnership area, whether it is built or natural. This theme is the fundamental building block of the partnership’s work both now and in the future”.
- b) Understanding, valuing and engaging with the landscape – “The conservation of the landscape can only be sustainable if it is supported by the communities that live and work around them. Understanding the landscape includes learning about how people value where they live, how they want to see it utilised and protected and how their own views about heritage in their local communities can be best appreciated and recorded”.
- c) Climate change, Green Recovery and the Economy – “Our natural and built heritage make a significant contribution to local economies but there is so much potential to improve the way that this is done. We will develop projects that build on the link between our heritage and the economy”.

The National Lottery Heritage Fund’s new strategic direction prioritises landscape-scale and climate-aligned projects, together with organisational sustainability and improving access and removing barriers, making it a suitable co-funding mechanism for the integrated delivery of biodiversity, conservation and cultural heritage projects under a unified resilience banner. New actions and projects would also be minded considering the new Heritage Fund investment principles up to 2033.

The National Lottery Heritage Fund

investment principles:

Saving heritage: Improve condition and understanding of heritage; Reduce amount of 'heritage at risk'; Deliver transformational long-term projects; Make digital heritage more accessible.

Protecting the environment: Put landscapes and habitats into recovery; Increase understanding of and connection to nature; Reduce the negative environmental impact of our funding portfolio; Improve heritage's ability to adapt to climate change.

Organisational Sustainability: Increase commercial and governance capabilities; Develop skills and capacity across heritage Inclusion, access and participation; Increase diversity of heritage workforces and audiences; Reduce barriers for people under-served by heritage; Embed resilience in projects we fund; Strengthen heritage's contribution to local economies.

Inclusion, access and participation: Increase diversity of heritage workforces and audiences; Reduce barriers for people under-served by heritage; Open programmes for all types of heritage projects with the majority of decisions made at local level; Strategic interventions to tackle issues at large and cross-territory scale; Enable more people's heritage to be recognised; Champion digital technology to improve access.

Forever Lough Neagh Roadmap to Recovery

The Forever Lough Neagh – Roadmap to Recovery will set out an ambitious and long-term vision to restore Lough Neagh as a thriving environmental, economic, and social hub for future generations. Emerging from recommendations produced by the Strategic Insight Lab (2025), organised by DAERA in early 2025, the Forever Lough Neagh initiative establishes a 30-year pathway for transformation through improved governance, sustainable management, and inclusive community engagement. A working steering group has been set up to drive the proposal and ensure there is strong integration with the Heritage Resilience Plan and the conservation work of the Lough Neagh Partnership. There has already been strong discussion regarding the need for integration with this heritage resilience strategy however its focus will be on other non-heritage mainstream Lough issues also such as setting up a new management structure for the Lough, the economic development of the Lough and addressing the wider river catchment water quality issues associated with Lough Neagh

Critical Evaluation

Despite the presence of a dense and well-developed regulatory ecosystem around Lough Neagh, implementation fragmentation and limited integration across biodiversity, water quality, and cultural heritage persist. Regulatory compliance under the WFD and Nitrates Directive has been uneven, especially in agricultural sectors, and the continued proliferation of blue-green algal blooms suggests that critical ecological thresholds are being crossed. Furthermore, while the EIPNI and Lough Neagh Action Plan represent strategic progress, they do not yet fully incorporate cultural heritage or landscape-scale community engagement which are key pillars of

the European Landscape Convention. The Heritage Resilience Plan proposed herein should therefore seek to bridge these divides by aligning ecological recovery with cultural stewardship and participatory governance.

CULTURAL AND BUILT HERITAGE POLICIES - LEGAL PROTECTION AND COMMUNITY INTEGRATION

The Historic Landscape of Lough Neagh

The cultural and built heritage of Lough Neagh forms a vital layer of the region's identity, encompassing millennia of human-environment interaction. From Neolithic ritual landscapes and early Christian monastic sites to Gaelic late medieval ritual sites and vernacular fishing settlements, the Lough and its hinterland represent a microcosm of Northern Ireland's wider cultural evolution. Equally important are the intangible elements of heritage embedded in the local communities including oral traditions, fishing practices, local folklore, and religious narratives, all of which contribute to the distinctiveness and cultural integrity of the Lough's landscape.

The protection and management of this multifaceted heritage asset base are governed by a variety of legislative instruments, planning policies, and grant schemes, albeit with varying degrees of integration and coherence.

Legislative and Planning Frameworks

Historic Monuments and Archaeological Objects (NI) Order 1995

The cornerstone of statutory protection for archaeological sites in Northern Ireland is the Historic Monuments and Archaeological Objects (NI) Order 1995. This legislation enables the scheduling of historic monuments and regulates excavations, alterations, and discoveries. Article 3 of the Order makes it a criminal offence to carry out works on a scheduled monument without formal consent from the Department for Communities (DfC), via its Historic Environment Division (HED).

In the Lough Neagh area, several early ecclesiastical sites, promontory forts, and crannógs (lake dwellings) are protected under this framework. However, protection is limited in scope and often spatially discontinuous, which weakens its capacity to sustain landscape-scale heritage values in the face of environmental change or development pressure.

Planning (NI) Act 2011 and Local Development Plans

The broader statutory context is provided by the Planning (NI) Act 2011, which mandates the integration of heritage conservation within land-use planning. Under this Act, each of the five local authorities bordering Lough Neagh - Mid Ulster, Antrim & Newtownabbey, Armagh City, Banbridge & Craigavon, Lisburn & Castlereagh, and Mid & East Antrim - is required to prepare Local Development Plans (LDPs), incorporating policies for the protection of listed buildings, Conservation Areas, Areas of Townscape Character, and Sites of Local Nature Conservation Importance (SLNCIs).

In practice, these LDPs vary in their degree of specificity and ambition regarding heritage. For instance, Mid Ulster District Council's plan acknowledges the value of built heritage but lacks a clear operational strategy for climate adaptation or integrated

cultural-natural landscape protection. This variability has contributed to uneven levels of heritage preservation and a lack of cross-boundary coherence.

Listed Buildings and Conservation Areas

Built heritage assets such as traditional cottages, mills, churches, and manor houses around Lough Neagh are protected under the listed building framework regulated by HED. Listing confers legal protection against demolition or unauthorised alteration and requires that any planning application affecting a listed structure demonstrate appropriate consideration of its character and setting.

However, only a limited number of such assets are actively monitored or maintained. Conservation Areas (designated zones of special architectural or historic interest) are rare in the rural periphery of the Lough, and where they exist, they are seldom accompanied by conservation management plans or enforcement capacity. This creates a structural vulnerability, particularly as climate change accelerates the deterioration of historic materials and increases the risk of storm damage, flooding, or abandonment.

Community-Led Heritage Initiatives and NGO Programmes

The Lough Neagh Partnership, established as a non-statutory board to coordinate community, environmental, and economic interests around the lake, has been a significant vehicle for promoting integrated cultural heritage. In 2014, it published a Cultural Heritage Audit and Action Plan, funded by the Heritage Lottery Fund. This document catalogued archaeological features, oral traditions, and folkloric narratives, providing the evidentiary basis for interpretive trails, signage installations, and community archaeological excavations.

The Partnership's subsequent Landscape Programme (2016–2021) delivered a broad suite of projects that cut across heritage domains, installing signage, restoring wetland habitats, delivering oral history projects, and enhancing visitor access. While such initiatives have demonstrated the feasibility and value of integrated cultural-natural heritage programming, their sustainability is often challenged by short funding cycles and the absence of statutory institutionalisation.

NGOs such as the National Trust, though not formally custodians of sites around Lough Neagh, (apart from Coney Island) have articulated broader policy frameworks that advocate for “landscape stewardship” and the use of heritage as a vehicle for environmental sustainability. These approaches resonate strongly with the principles of the European Landscape Convention (ELC), which is explored below.

The European Landscape Convention (ELC)

Ratified by the United Kingdom in 2006, the European Landscape Convention advances a paradigm shift from the preservation of individual heritage assets toward the conservation and enhancement of entire landscapes, whether urban, rural, protected, or degraded. The ELC's holistic conception of landscape as both cultural and ecological space has particular relevance to Lough Neagh, where built, natural, and intangible heritage values are spatially and historically intertwined.

The ELC obliges public authorities to recognise landscapes in law, establish landscape policies, and develop participatory planning approaches. While implementation has varied across the UK, its ethos has influenced planning frameworks in Northern Ireland, particularly through Landscape Character Assessments (LCAs) commissioned by local councils. For example, the Antrim and Newtownabbey LCA identifies the unique “shoreline” and “peatland” landscape types around Lough Neagh, describing their aesthetic, ecological, and historical attributes.

However, despite this analytical progress, the practical application of ELC principles remains limited. Most local development plans do not yet operationalise landscape-scale stewardship or interlink ecological and cultural designations within a unified management strategy. This represents a key gap which the proposed Heritage Resilience Plan will seek to address.

Cultural Ecosystem Services and Heritage Tourism

The concept of cultural ecosystem services (CES) provides an important theoretical bridge between ecological resilience and cultural heritage. CES refers to the non-material benefits that people derive from ecosystems, including spiritual enrichment, cognitive development, recreation, and aesthetic experience. In the Lough Neagh context, CES is particularly evident in traditional angling practices, local myths (such as the legend of Fionn mac Cumhaill), and community rituals associated with place.

Several tourism initiatives have sought to capitalise on these intangible heritage values, but concerns about cultural commodification, inadequate infrastructure, and environmental carrying capacity have limited their sustainability. Moreover, these initiatives have rarely been embedded within conservation-led or community-governed frameworks, and as such, they have not always contributed to long-term resilience.

Critical Evaluation

While Northern Ireland has a robust legislative base for protecting individual heritage assets, it lacks a cohesive strategy for managing cultural and built heritage at a landscape scale, especially in environmentally sensitive areas like Lough Neagh. Planning frameworks often separate environmental and cultural considerations, and legal protections for intangible heritage remain weak or non-existent.

The integration of ELC principles, the activation of community-led heritage planning, and the formal recognition of CES in policy and funding mechanisms are essential for advancing cultural resilience. The Heritage Resilience Plan proposed in this report will work toward these goals by institutionalising heritage stewardship as an integral part of landscape and catchment governance.

GOVERNANCE, ENVIRONMENTAL LAW, AND CLIMATE RESILIENCE IN THE LOUGH NEAGH REGION

Multi-Layered Governance and Fragmentation

Lough Neagh represents a paradigmatic case of complex environmental governance. Despite its status as the largest freshwater body in the UK and Ireland, no single statutory body has responsibility for its integrated management. Instead, a diffuse

array of agencies, departments, councils, and non-statutory partnerships share overlapping mandates that often lead to policy duplication, administrative inertia, and implementation gaps.

The Department of Agriculture, Environment and Rural Affairs (DAERA), through the Northern Ireland Environment Agency (NIEA), is the primary actor in water quality monitoring, pollution control, and species protection. DAERA also leads on climate policy and agri-environmental regulation, which are critical for managing nutrient inputs and supporting biodiversity. However, DAERA's remit is primarily ecological and regulatory; it does not address heritage, tourism, or built environment concerns in a systematic way.

The Department for Infrastructure (DfI) holds statutory powers for drainage and flood risk management under the Drainage (NI) Order 1973, as well as responsibilities for water level regulation under the Lough Neagh and Lower Bann Drainage and Navigation Act 1955. These functions are essential for adapting to climate-induced hydrological changes but are largely technocratic and insufficiently integrated with biodiversity or cultural values.

Local government plays an increasingly significant role following the 2015 reform of local councils, which conferred responsibility for spatial planning, local development plans, and community planning. The five councils bordering the Lough have each adopted strategies with varying degrees of environmental and heritage content. However, cross-council collaboration remains informal and ad hoc, with no overarching basin-wide authority to coordinate strategic direction.

Non-statutory entities such as the Lough Neagh Partnership have partially filled this void by convening stakeholder platforms and coordinating funding bids. Nonetheless, the absence of legal powers, permanent funding, or regulatory authority limits the Partnership's capacity to drive systemic change.

The development of a new Lough Neagh Roadmap to Recovery is an attempt by DAERA to examine the need for a new interdepartmental management structure for Lough Neagh. The National Trust has taken the lead in this process and will attempt to replicate the success of the Forever Mourne Recovery Road Map.

Ownership and Legal Complexity

One of the most distinctive and contentious features of Lough Neagh governance is the private ownership of its bed and soil by the Shaftesbury Estate, a legacy of seventeenth-century land grants. This ownership structure has long been a source of political tension. The Lough Neagh Fishermen's Cooperative leases fishing rights as opposed to owning eel fishing rights and leases the scale rights. Recreational rights retained by the Honorable the Irish Society (three rods in the north-west area) is also noted. The ownership status of the Lough complicates development control, infrastructure planning, and conservation interventions. For instance, any project requiring anchoring, cabling, or dredging may need both statutory consent and landowner permission.

Recent discussions by the Lough Neagh Partnership with Shaftesbury Estates have explored the potential for community ownership or co-management models, yet legal, financial, and political barriers remain significant. A new ownership options and way forward paper, funded by The National Lottery Heritage Fund, will be published by the Lough Neagh Partnership and will act as a tool kit for anyone wishing to take the project forward. Any Heritage Resilience Plan for Lough Neagh must therefore navigate this ownership landscape carefully, use the published documents as a tool, aligning action with community aspirations and Shaftesbury Estates goals while avoiding jurisdictional conflicts and financial liabilities.

Environmental Law and Regulatory Instruments

Key Legal Instruments

A dense legal architecture underpins environmental management at Lough Neagh, largely derived from EU directives and retained through domestic regulations post-Brexit. These include:

- The Water Environment (Water Framework Directive) Regulations (NI) 2017, which require River Basin Management Plans and ecological status assessments.
- The Conservation (Natural Habitats, etc.) Regulations (NI) 1995, implementing the EU Habitats Directive.
- The Wildlife (NI) Order 1985, as amended, which protects species and regulates wildlife trade.
- The Urban Waste Water Treatment Regulations (NI) 2007, enforcing standards on municipal and industrial effluent.
- The Nitrates Directive, targeting nutrient loading from various sources.
- The Environmental Impact Assessment (EIA) Regulations, which subject large-scale projects to pre-development scrutiny.

Each of these instruments operates under its own regulatory logic, enforced by different agencies with variable resources and mandates. While individually robust, they are not systematically aligned, particularly where cultural, landscape, or heritage considerations intersect with ecological protection.

Enforcement and Compliance

Enforcement of environmental law around Lough Neagh remains uneven. The NIEA is tasked with monitoring compliance and prosecuting violations, but budget constraints and limited staffing have weakened capacity. Meanwhile, breaches of water quality standards, especially nutrient over-enrichment, have persisted. The 2023 blue-green algae crisis, which rendered much of the Lough unusable for recreation and raised drinking water safety concerns, starkly illustrated the consequences of under-enforcement and policy fragmentation. The Lough Neagh Action Plan (2024) has sought to rectify these deficiencies through enhanced regulation, stricter effluent controls, and a renewed focus on cross-sector accountability. However, enforcement

alone is insufficient without systemic coordination and shared stewardship responsibilities.

Climate Change Policy and Resilience Frameworks

The Lough Neagh region is particularly vulnerable to the impacts of climate change, including altered precipitation patterns, increased flooding, higher water temperatures, and changes in species composition. The Northern Ireland Climate Change Act (2022) provides a legal framework for responding to these threats, including binding targets for net-zero emissions by 2050 and provisions for climate adaptation planning.

DAERA's Draft Climate Action Plan and the Environmental Improvement Plan (EIPNI) both emphasise ecosystem-based adaptation and nature-based solutions (NBS), which are directly applicable to Lough Neagh. Potential interventions include wetland restoration, peatland rewetting, reforestation of catchment slopes, and shoreline buffer establishment. These measures simultaneously enhance biodiversity, regulate hydrological flows, and mitigate flood risks, offering co-benefits for heritage protection.

However, neither the Climate Change Act nor the associated policies explicitly address cultural heritage vulnerabilities, such as increased erosion of archaeological sites, climate-related structural decay of built heritage, or the loss of traditional land-use practices. This omission reflects a wider blind spot in climate policy: the failure to treat heritage as both a climate risk factor and an asset for resilience.

The Climate Change Impact and Carbon Storage Study For Lough Neagh 2022 carried out by Professor Jim Mc Adam identified the risks to Lough Neagh from Climate change and mapped the peatland resources around the Lough. The report identified climate trends in Northern Ireland.

- Average annual temperature - Increase of 0.7°C from mid-1970s to mid-2010s
- Annual mean rainfall - Increase of 6.4% from mid-1970s to mid-2010s
- Weather extremes - UK-wide increase in extreme heat events
- Little evidence yet on changes in extreme rainfall

This was followed up with the latest set of projected changes in climate for Northern Ireland come from the 2018 UK Climate Projections¹ as shown in the table below.

	2050's RCP2.6 (50th %tile)	2050's RCP6.0 (50th %tile)	2080's RCP2.6 (50th %tile)	2080's RCP6.0 (50th %tile)
Annual Temperature	+1.1 °C	+1.2 °C	+1.2 °C	+2.1 °C
Summer Rainfall	-11%	-11%	-10%	-15%
Winter Rainfall	+3%	+3%	+7%	+10%

¹ Third UK Climate Change Risk Assessment Technical Report - These values are taken from the UKCP18 probabilistic projections and represent a central (median) estimate of 30-year average change in each variable from a 1981-2000 baseline. Two emissions scenarios are used; RCP2.6 (roughly equivalent to a global warming +2°C above preindustrial scenario by 2100) and RCP6.0 (roughly equivalent to a global warming +4°C above preindustrial levels by 2100).

The key climate change risks to Lough Neagh's designating features include:

- Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity and flooding).
- Risks to terrestrial species and habitats from pests and invasive species.
- Risks to soils from changing climatic conditions.
- Risks to natural carbon stores and sequestration from changing climatic conditions, including temperature change and water scarcity.
- Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts

In response, the Heritage Resilience Plan proposed here will seek to operationalise climate resilience not only for ecosystems but also for cultural landscapes, integrating the guidance of bodies such as Historic England, which has pioneered frameworks for climate adaptation in the historic environment.

Critical Evaluation

The governance and legal environment surrounding Lough Neagh is simultaneously rich in institutional presence and poor in strategic coherence and coordinated action. Fragmentation across agencies, the absence of a statutory or interdepartmental basin authority, and unresolved issues around ownership and community rights inhibit the emergence of a unified response to environmental and heritage challenges.

Moreover, while environmental legislation is extensive, it remains largely sectoral in scope and is not yet aligned with cultural or heritage-based management objectives. Climate policy, though ambitious in its carbon and adaptation targets, has yet to fully integrate heritage into its risk and resilience calculations.

A key objective of the proposed Heritage Resilience Plan will be to address these gaps through a cross-cutting governance model that links ecological and cultural stewardship, leverages legal instruments across sectors, and aligns with climate adaptation imperatives.

THE INTEGRATED HERITAGE RESILIENCE FRAMEWORK FOR LOUGH NEAGH – THE 'FOREVER LOUGH NEAGH' APPROACH

A Catalyst for the Forever Lough Neagh Roadmap to Recovery

The Forever Lough Neagh – Roadmap to Recovery sets out an ambitious, long-term vision for restoring the lake's ecological balance, strengthening its economic vitality, and enhancing the social well-being of surrounding communities through a process of strong strategic partnership. Emerging from DAERA's Strategic Insight Lab (2025),

and led by the National Trust the initiative will define a 30-year vision of Lough Neagh as a well-balanced environmental, economic, and social hub for a thriving society. Working strongly with the Lough Neagh Partnership, it will identify critical challenges concerning ownership, governance, policy integration, community engagement, and behavioural change. Complementing this, the Heritage Resilience Plan for Lough Neagh serves as a foundational mechanism to ensure that the lake's recovery is not only environmental but also cultural and social. By embedding heritage-led approaches into the recovery framework, the plan seeks to safeguard the stories, identities, landscapes, and traditions that define Lough Neagh, ensuring they are integral to the region's long-term regeneration. While the Roadmap to Recovery focuses on governance reform, and policy frameworks, the Heritage Resilience Plan provides the social and cultural scaffolding required to sustain these transformations. It would deliver a holistic framework that unites natural, built, and intangible heritage within a coherent strategy for resilience and recovery, ensuring that environmental restoration is matched by the protection and revitalisation of local identity and community cohesion.

Integrating Heritage into the Roadmap Framework

The Roadmap to Recovery outlines three primary phases - Partnership Development, Strategy Development, and Implementation. The Heritage Resilience Plan must complement and strengthen each of these. During the Partnership Development phase of the Forever Lough Neagh Roadmap to Recovery, the Heritage Plan would deepen stakeholder participation by connecting with community heritage groups, cultural organisations, and custodians of local traditions. This process would go beyond consultation to co-creation, ensuring that local narratives, values, and collective memories shape recovery priorities. This approach not only aligns with the roadmap's community engagement framework but enriches it, transforming engagement into cultural stewardship. The mapping of historic landscapes, traditional land-use practices, and cultural sites would form part of the scoping exercise, ensuring that heritage assets are recognised as integral to the recovery process.

Within the Forever Lough Neagh Roadmap to Recovery Strategy Development phase, the Heritage Resilience Plan would provide evidence-based insights on the interconnections between heritage, landscape, and ecological integrity. Heritage data, ranging from archaeological surveys to assessments of vernacular architecture and oral history, would feed directly into the strategy's recommendations. This ensures that policy development and resource allocation recognise the economic and social value of heritage-led regeneration. Integrating natural and cultural capital assessments would help quantify the contribution of heritage assets to environmental recovery and community well-being, enabling a more comprehensive valuation of Lough Neagh's resources.

During the Forever Lough Neagh Roadmap to Recovery Implementation phase, the Heritage Resilience Plan becomes an active tool for delivering sustainable heritage outcomes. It would support projects that restore and repurpose heritage buildings, promote traditional crafts and sustainable land management practices, and create educational and interpretive programmes that connect communities and visitors to the

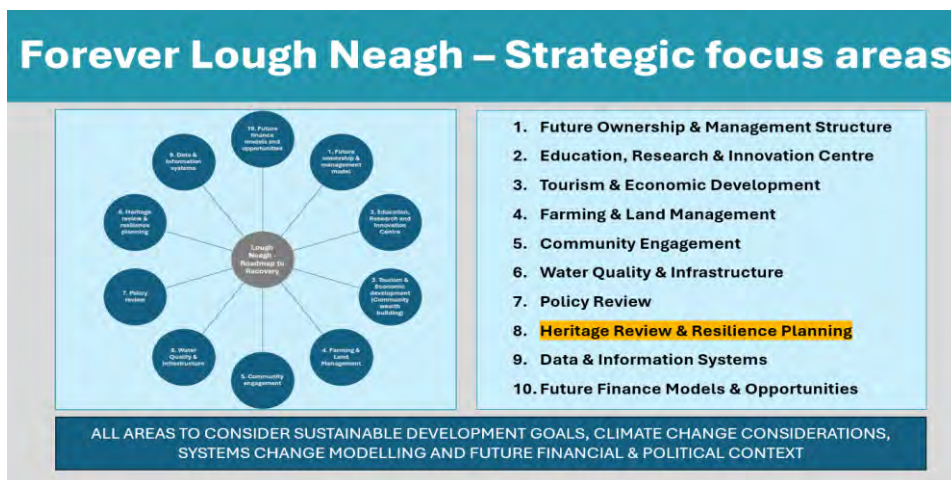
evolving story of Lough Neagh. This phase also provides opportunities for innovative finance mechanisms, such as blended funding or heritage-based community trusts, to underpin long-term stewardship and self-sustaining governance structures.

Timeline for Forever Lough Neagh Roadmap Timeline

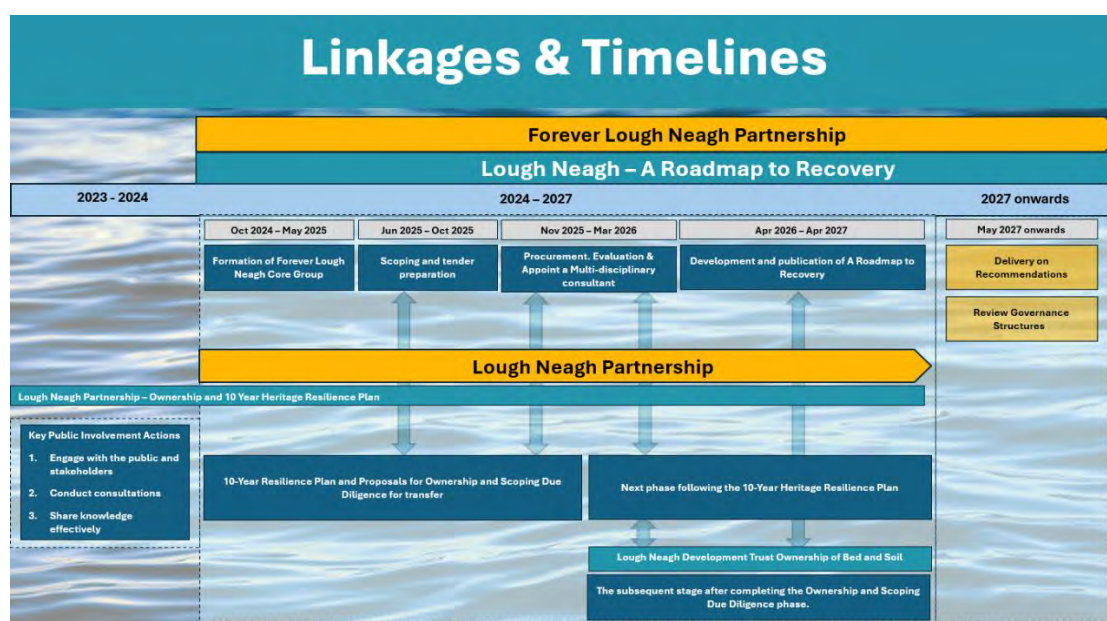


There are ten priority themes identified within the potential Forever Lough Neagh Roadmap To Recovery Plan. These cover a wide range of areas and not all of themes would relate directly to the potential Lough Neagh Heritage Resilience Plan. Strong emphasis will be placed on minimising any duplication of themes a, outputs and outcomes. A geographic prioritising will also be considered with the Heritage Resilience Plan focussing on the Landscape Character Area as identified by DAERA and the wider river catchment.

Strategic Themes of Forever Lough Neagh



Timelines and Linkages



Heritage as a Framework for Resilience and Identity

The heritage of Lough Neagh, its ancient settlements, fishing traditions, myths, industrial relics, and cultural expressions, represents a powerful resource for regeneration. By framing heritage as a dynamic, living system rather than a static record, the Heritage Resilience Plan would cultivate a sense of belonging and shared responsibility that underpins ecological and social recovery alike. This approach aligns closely with the Forever Lough Neagh vision by promoting place-based identity and collective resilience. It acknowledges that recovery is not solely about restoring water quality or biodiversity, but also about revitalising the human and cultural ecosystems that depend on and define the lake. For example, community-led storytelling, creative arts, and heritage education could be woven into awareness campaigns, helping residents and visitors understand how everyday actions affect the health and legacy of Lough Neagh. Moreover, heritage interpretation, through trails, digital platforms, and community exhibitions, would transform public understanding of the lake from a site of crisis to a landscape of continuity and renewal. In doing so, the Heritage Resilience Plan strengthens the social fabric required to sustain behavioural change and long-term stewardship.

Governance, Policy Integration, and Sustainable Futures

Both the Roadmap to Recovery and the Heritage Resilience Plan recognise that governance reform and policy coherence are essential to achieving sustainable outcomes. Whilst the responsibility for developing a new management structure will be for the new Forever Lough Neagh Group led by the National Trust, the heritage perspective introduces additional layers of value, particularly regarding planning, conservation, and community ownership models. The Heritage Resilience Plan would contribute practical frameworks for integrating heritage within the Recovery Plan roadmap's governance structure, including guidance on conservation management, adaptive reuse, and participatory governance. Such integration would reinforce the roadmap's objectives by creating a more inclusive, transparent decision-making

system that values cultural as well as environmental assets. It would also facilitate interdepartmental collaboration, linking environmental, cultural, tourism, and education sectors under a shared vision for Lough Neagh's recovery.

Legacy, Learning, and Long-Term Impact

A key contribution of the Heritage Resilience Plan lies in its potential to create enduring legacies. Beyond safeguarding physical heritage, it would cultivate intergenerational learning and resilience—ensuring that local communities, schools, and cultural organisations remain active stewards of the lake's recovery. Collaborative initiatives with universities, conservation bodies, and creative industries could produce new models of heritage education, digital storytelling, and citizen science, turning Lough Neagh into a living classroom for sustainability and cultural renewal. By complementing the scientific and policy-driven focus of the Forever Lough Neagh roadmap, the Heritage Resilience Plan anchors recovery in local identity and shared meaning. Together, the two frameworks offer a comprehensive vision—one that balances environmental restoration with cultural continuity, social inclusion, and economic regeneration. In essence, the Heritage Resilience Plan would ensure that the recovery of Lough Neagh is not just about repairing an ecosystem, but about reweaving the fabric of place, binding its people, landscapes, and heritage into a resilient and thriving future.

Proposing a Vision and Core Principles for the Heritage Resilience Plan

The proposed Heritage Resilience Framework for Lough Neagh envisions “a future where the region's ecological richness, cultural depth, and socio-economic vitality are secured through integrated, adaptive, and participatory stewardship”. The central premise is that heritage resilience must be ecosystemic, not merely protecting discrete artefacts or species, but sustaining the dynamic, interdependent systems that give rise to environmental and cultural value.

This vision is grounded in five core principles:

1. **Ecological Integrity:** Protecting and restoring ecosystem functions essential for biodiversity, water quality, and climate regulation.
2. **Cultural Continuity:** Safeguarding tangible and intangible heritage as living expressions of community identity and historical continuity.
3. **Integrated Governance:** Bridging institutional silos through a coordinated, cross-sectoral governance model.
4. **Climate Adaptation:** Embedding climate resilience into heritage management, infrastructure planning, and community development.
5. **Participatory Stewardship:** Empowering local communities, landowners, and NGOs through inclusive planning and capacity-building.

Alignment with Strategic and Legislative Frameworks

To be operationally viable, the Heritage Resilience Framework must align with existing legal obligations and strategic plans. Table 2 outlines key areas of alignment across thematic domains.

Table 2: Strategic and Legal Alignment Matrix

Domain	Existing Framework	Heritage Resilience Integration
Water Quality	Water Framework Directive; RBMPs	Wetland and riparian restoration as cultural-natural assets
Biodiversity	EIPNI; NI Biodiversity Strategy	Habitat protection linked with heritage trails and CES mapping
Cultural Heritage	Planning (NI) Act 2011; HED guidance	LDP overlays for cultural landscapes; adaptive reuse
Landscape Governance	European Landscape Convention (ELC)	Character-based landscape units; integrated stewardship
Site Designation	Lough Neagh ASSI, SPA AND RAMSR	Combined Nature Network Recoveries
Climate Change	NI Climate Change Act; EIPNI, Lough Neagh Climate Change report.	Ecosystem-based and heritage-based adaptation actions
Community Development	Local Development Plans (5 councils) Forever Lough Neagh Recovery Road Map	Community co-design of resilience and interpretive strategies
Funding and Delivery	Heritage Lottery Fund; LIFE, Interreg, DAERA grants	Blended funding across biodiversity, heritage, and climate
Tourism and Navigation	Waterways Ireland, Tourism NI, DFI, Forever Lough Neagh Recovery Road Map	Linkage of tourism heritage potential in Lough Neagh and statutory bodies
Governance and Structures	National Trust, Forever Lough Neagh,	New integrated Road map to Recovery

This matrix allows planners and implementers to systematically map proposed actions onto statutory and strategic mandates, reducing duplication and maximising compliance. Much of this can be accommodated through the Forever Lough Neagh Roadmap. Through this mechanism, the Heritage Resilience Plan will contribute robust evidence and analysis to support policy formation. It will align heritage and environmental data, linking archaeological surveys, historic landscape assessments, and intangible heritage studies with ecological and natural capital evaluations. This integrated evidence base will provide a richer understanding of the interconnections between environment, culture, and society. It will enable decision-makers to quantify the social and economic value of heritage-led regeneration, supporting investment in projects that strengthen both ecological health and cultural identity. The inclusion of

heritage perspectives will ensure that recovery strategies respect the historical character of the landscape while encouraging adaptive reuse and sustainable development. The Plan will also provide policy guidance on conservation management, cultural tourism, and education as mechanisms for long-term resilience.

CONCLUSION AND POLICY RECOMMENDATIONS

Synthesis of Findings

The preceding analysis has demonstrated that Lough Neagh occupies a singular position at the intersection of ecological importance, cultural depth, and environmental risk. Its designation as a Ramsar site, Special Protection Area, and Area of Special Scientific Interest confirms its global biodiversity significance. At the same time, the Lough's rich archaeological heritage, vernacular architecture, and deep reservoir of intangible culture represent one of Northern Ireland's most profound and layered cultural landscapes.

However, the institutional response to these overlapping values remains fragmented. Biodiversity and water policy have evolved through the frameworks of the Water Framework Directive, the Environmental Improvement Plan, and DAERA's regulatory regime. Cultural heritage protection operates within a different governance sphere, grounded in the Planning (NI) Act 2011, the Historic Monuments Order, and the practices of the Historic Environment Division. Climate adaptation is beginning to emerge as a cross-cutting concern, but it has yet to be meaningfully integrated into heritage management or local development planning.

The absence of an interdepartmental basin-wide management body, the ambiguous status of the lakebed's private ownership, and the disjointed policy environment all act as structural barriers to holistic stewardship. Moreover, climate change introduces new layers of urgency, as heritage assets and ecosystems alike are exposed to increasing environmental volatility.

Against this backdrop, the proposed Heritage Resilience Plan must offer a transformative framework that binds ecological integrity, cultural continuity, participatory governance, and climate adaptation into a coherent strategy. It aligns with existing statutory mandates, leverages established funding sources, and introduces a landscape-scale, interdisciplinary approach to heritage and environmental governance.

Policy Recommendations

To realise this vision, the following policy recommendations are proposed:

1. Establish a Heritage and Environment Partnership for Lough Neagh

The creation of a LNP Lough Neagh Heritage and Environment Subgroup linked to the wider proposed Forever Lough Neagh interdepartmental structure. This would link the two bodies and improve communication, reduce duplication and improve integrated

management of the Lough, encompass natural and cultural heritage, sustainable water management, climate adaptation, and community engagement.

2. Integrate Heritage Resilience into Climate Adaptation Planning

The Northern Ireland Executive, through DAERA and DfI, should explicitly incorporate cultural and built heritage into regional climate adaptation strategies. This includes applying the principles of ecosystem-based adaptation to archaeological and vernacular sites and developing guidance for climate-proofing heritage infrastructure.

3. Operationalise the European Landscape Convention at the Local Level

Local councils should embed ELC principles into their Local Development Plans, including character-based zoning, cross-boundary landscape corridors, and participatory planning processes. This should be accompanied by training for planners, conservation officers, and community organisations.

4. Harmonise Funding Streams for Integrated Projects

The Heritage Lottery Funding, DAERA, and Interreg Europe should be encouraged to co-finance projects that deliver biodiversity, heritage, and climate outcomes concurrently. A ring-fenced “Heritage Resilience Fund” could be established under the Lough Neagh Partnership to support demonstration projects and knowledge exchange.

5. Support Community Led Cultural Mapping and Oral History Projects

Councils and NGOs should be funded to deliver cultural mapping initiatives that document oral histories, place names, traditions, and community memory. These should feed into heritage trails, planning databases, and interpretive infrastructure, building local ownership and resilience.

6. Develop a Catchment Data Observatory and Heritage Dashboard

DAERA and NIEA, in collaboration with academic partners and community groups, should establish a shared geospatial data platform that integrates ecological monitoring with heritage asset condition, climate risk profiles, and community activity metrics. This would allow for transparent reporting, adaptive management, and evidence-based policy revision.

7. Clarify and Reform Lakebed Ownership Governance

Establish a working group to continue to examine the implications of private lakebed ownership for public access, development rights, and conservation management. Options should include enhanced regulatory oversight, community co-ownership models, or negotiated stewardship agreements.

8. Living Heritage Register

The creation of a Living Heritage Register for the Lough Neagh region would address the chronic under-recognition of intangible and vernacular heritage. This dynamic, publicly accessible database would include not only listed buildings and scheduled monuments, but also non-statutory heritage elements such as traditional basket-

weaving, eel fishing techniques, canal lore, boatbuilding crafts, and local religious or seasonal festivals. Regularly updated by communities, heritage organisations, and local historians, the Register would underpin participatory mapping, inform planning assessments, and serve as a resource for educational and interpretive programmes. It would also help ensure that overlooked or marginalised narratives are embedded within the heritage discourse, aligning with the inclusive ethos of the European Landscape Convention.

9. Heritage Resilience Scorecard

A Heritage Resilience Scorecard would provide local authorities, planning departments, and funding agencies with a tool to assess the contribution of heritage to resilience—environmental, social, and economic—within any proposed plan or project. Drawing on indicators such as ecosystem service value, social cohesion outcomes, climate adaptation performance, and cultural continuity, the Scorecard would promote more evidence-based and impact-oriented investment in heritage initiatives. This tool would be especially valuable in evaluating the outcomes of green infrastructure, adaptive reuse schemes, and community-led conservation work, ensuring that heritage is no longer treated as a peripheral concern but as a core dimension of resilient placemaking.

10. Statutory Navigation Lough Neagh Authority (Exploratory Phase)

Recognising the long-standing navigation vacuum at the heart of Lough Neagh management, it is recommended that a stakeholder-led Exploratory Phase be initiated to assess the feasibility of Waterways Ireland taking over responsibility for the development of inland waterways recreational development and This process would involve structured consultation across all relevant agencies (DAERA, DfI, NIEA, HED), local authorities, NGOs, and community representatives. If Waterways Ireland was not deemed acceptable then other simpler navigation models could be investigated.

11. Rights of Nature

The Lough Neagh Partnership has worked with Queens University Belfast and the Earth Law Centre to examine the theme of species and habitats and even landscapes having their own intrinsic rights. This new innovative idea recognises Nature as a subject of the law with the right to have its interests represented. Present legal systems are mainly based on human separation from Nature and there would be a strong opportunity to examine new possible legal systems and structures that recognise the “Rights of Nature” in some way and the idea merits further research and policy development.

12. The Good Friday Agreement

Lough Neagh was not included within the navigational remit of Waterways Ireland as part of the wider Good Friday agreement. The reasons for this decision, 26 years after the Good Friday agreement, have still never been made clear. Furthermore, the effect of the troubles and the historic significance of the Lough on recent Irish history has been somewhat overlooked and there is definitely a story to be told here. This area could be part of a new research or peace and reconciliation project.

Table 2: Summary of policy recommendations based on strategic review

	Recommendation	Key Actions / Description
1	Establish a Heritage and Environment Partnership for Lough Neagh	Create an inter-departmental partnership to provide strategic leadership. Remit to include natural & cultural heritage, water management, climate adaptation, and community engagement.
2	Integrate Heritage Resilience into Climate Adaptation Planning	NI Executive (via DAERA & DfI) to embed cultural and built heritage in climate adaptation. Apply ecosystem-based adaptation to sites, provide guidance for climate-proofing heritage infrastructure.
3	Operationalise the European Landscape Convention (ELC) Locally	Local councils to integrate ELC principles in Local Development Plans (zoning, landscape corridors, participatory planning). Provide training for planners, conservation officers, and community groups.
4	Harmonise Funding Streams for Integrated Projects	Encourage Heritage Lottery, DAERA, and others to co-finance biodiversity, heritage and climate projects. Establish a ring-fenced “Heritage Resilience Fund” under the Lough Neagh Partnership.
5	Support Community-Led Cultural Mapping & Oral History Projects	Collect oral histories, traditions, place names, and community memory. Outputs to inform heritage trails, planning databases, and interpretive infrastructure.
6	Develop a Catchment Data Observatory & Heritage Dashboard	DAERA, NIEA, academics, and communities to create a shared geospatial data platform integrating ecology, heritage asset condition, climate risk, and community metrics. Enables transparent reporting & adaptive management.
7	Clarify & Reform Lakebed Ownership Governance	Establish working group to examine impacts of private lakebed ownership on access, development, and conservation. Explore regulatory oversight, community co-ownership, or stewardship agreements.
8	Living Heritage Register	Create a dynamic public register for both statutory and non-statutory heritage (e.g., crafts, traditions, festivals). Updated by communities & historians; supports planning, education, and inclusive heritage recognition.
9	Heritage Resilience Scorecard	Develop a tool for assessing heritage contributions to resilience (environmental, social, economic). Indicators include ecosystem services, cohesion, climate adaptation, and cultural continuity. Guides evidence-based investment.
10	Statutory Navigation Lough Neagh	The exploration of the expansion of waterways Ireland remit. Initiate stakeholder-led feasibility study for a possible expansion of remit. Consult across

	Authority (Exploratory Phase)	agencies, councils, NGOs, and communities. Modelled on Loughs Agency; mandate to unify governance, manage data, zoning, and funding coordination.
11	Rights of Nature	There is a strong opportunity to examine new innovative models of protecting nature and the analysis of legal conventions of ownership and rights would be worth taking forward in the long term
12	Good Friday Agreement	Lough Neagh is one of the main lost opportunities of the Good Friday Agreement. The relationship between the Lough and the cross communities who live around it, have never really be examined and there is a strong argument to use the Lough as a cross community development tool.

Final Reflections

The resilience of Lough Neagh - ecologically, culturally, and socially - depends on a paradigm shift in how we understand and govern heritage. No longer can nature and culture be treated as separate domains, nor can heritage be reduced to monument lists and ecological status reports. Instead, a systemic, landscape-scale approach is needed, one that treats resilience as a function of integration, participation, and long-term stewardship. The challenges facing Lough Neagh are not primarily technical; they are structural, cultural, and institutional. The ecological decline of the Lough and the erosion of its cultural integrity are symptoms of a broader failure to conceive of the landscape as a living, interconnected system. Without a fundamental realignment of governance, planning, and community engagement, reactive interventions will continue to fall short.

This strategic review has proposed a shift toward systemic, resilient, and heritage-centred environmental governance. The Heritage Resilience Plan should not be an additional strategy to sit alongside existing frameworks instead it should act as a blueprint for integration. It creates space for new governance forms, it proposes practical tools, like the Scorecard and Living Heritage Register; it is an opportunity to reassess the political sidelining of the Lough within the Good Friday Agreement, and it points toward the institutional transformation required to achieve long-term resilience.

If implemented, the recommendations proposed in this section of the Plan would position Lough Neagh not only as a regional heritage and biodiversity asset but as a global model for landscape-scale, cross-sector, community-driven resilience planning. The Heritage Resilience Plan will not add new burdens to already stretched institutions. Rather, it offers a method for harmonising existing mandates, unlocking co-benefits, and empowering communities as co-authors of the Lough's future. In an era of climate change, biodiversity collapse, and cultural disconnection, such integration is not merely desirable - it is imperative.

REFERENCE SOURCES

Department for Infrastructure (n.d.) “DfI Rivers – an overview”. Available at: <https://www.infrastructure-ni.gov.uk/articles/dfi-rivers-overview> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Lough Neagh ASSI”. Available at: <https://www.daera-ni.gov.uk/protected-areas/lough-neagh-assi> (Accessed: 26 August 2025).

Lough Neagh Partnership (2017) “Lough Neagh Landscape Conservation Action Plan”. Available at: <https://www.loughneaghpартnership.org/wp-content/uploads/2017/10/LOUGH-NEAGH-LANDSCAPE-CONSERVATION-ACTION-PLAN.pdf> (Accessed: 26 August 2025).

Department for Communities (n.d.) “Scheduled Historic Monuments”. Available at: <https://www.communities-ni.gov.uk/articles/scheduled-historic-monuments> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Lough Neagh Islands Nature Reserve”. Available at: <https://www.daera-ni.gov.uk/articles/lough-neagh-islands-nature-reserve> (Accessed: 26 August 2025).

Lough Neagh Partnership (2024) “Update on the Lough Neagh Partnership’s 10-Year Heritage Resilience Plan: Advancing a community-centred approach to protecting a cultural treasure”. Available at: <https://loughneaghpартnership.org/lough-neagh-heritage-resilience-plan-update/> (Accessed: 26 August 2025).

Lough Neagh Partnership (n.d.) “Lough Neagh Partnership Board”. Available at: <https://loughneaghpартnership.org/lough-neagh-partnership-board/> (Accessed: 26 August 2025).

Environmental Justice Network Ireland (2025) “Lough Neagh: A case study in environmental injustice”. Available at: <https://ejni.net/wp-content/uploads/2025/02/Lough-Neagh-A-case-study-in-environmental-injustice-31.01.25-1.pdf> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Regulating water discharges”. Available at: <https://www.daera-ni.gov.uk/articles/regulating-water-discharges> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Water Framework Directive”. Available at: <https://www.daera-ni.gov.uk/articles/water-framework-directive> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Review of Sensitive Areas”. Available at: <https://www.daera-ni.gov.uk/articles/review-sensitive-areas> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Nutrients Action Programme”. Available at: <https://www.daera-ni.gov.uk/articles/nutrients-action-programme> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “About bathing water quality”. Available at: <https://www.daera-ni.gov.uk/articles/about-bathing-water-quality> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (2024) “Muir meets key stakeholders following launch of 37-point action plan”. Available at: <https://www.daera-ni.gov.uk/news/muir-meets-key-stakeholders-following-launch-37-point-action-plan> (Accessed: 26 August 2025).

Ulster Wildlife (2024) “Lough Neagh statements, July 2024”. Available at: https://www.ulsterwildlife.org/sites/default/files/2024-07/Lough%20Neagh%20statements_July%2024_0.pdf (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “Lough Neagh and Lough Beg SPA”. Available at: <https://www.daera-ni.gov.uk/protected-areas/lough-neagh-and-lough-beg-spa> (Accessed: 26 August 2025).

Antrim and Newtownabbey Borough Council (n.d.) “Special Protection Areas and scientific interest at Lough Neagh”. Available at: <https://www.antrimandnewtownabbey.gov.uk> (Accessed: 26 August 2025).

BBC News (n.d.) “Lough Neagh: fishing industry 'victim' of environmental damage”. Available at: <https://www.bbc.com> (Accessed: 26 August 2025).

BBC News (n.d.) “Curlew: Endangered bird thriving after programme”. Available at: <https://www.bbc.com> (Accessed: 26 August 2025).

BBC News (n.d.) “Nature and environment in decline across Northern Ireland – report”. Available at: <https://www.bbc.com> (Accessed: 26 August 2025).

Berghahn Journals (2008) “Curating Intangible Cultural Heritage”. *Anthropological Journal of European Cultures*, 17(1). Available at: <https://www.berghahnjournals.com> (Accessed: 26 August 2025).

Carbon Brief (2023) “Lough Neagh: How climate change intensified toxic algae on the UK’s largest lake”. Available at: <https://www.carbonbrief.org> (Accessed: 26 August 2025).

Climate Northern Ireland (2016) “Flooding in the Lough Neagh and Lough Erne catchments”. Available at: <https://www.climateinthenorthernireland.org.uk> (Accessed: 26 August 2025).

CommunityNI (n.d.) “New Lough Neagh Partnership Strategy aims to sustainably develop Lough Neagh”. Available at: <https://www.communityni.org> (Accessed: 26 August 2025).

Department of Agriculture, Environment and Rural Affairs (n.d.) “The Lough Neagh Report”. Available at: <https://www.daera-ni.gov.uk> (Accessed: 26 August 2025).

Irish Times (2023) “Flies converge over Lough Neagh to find a mate within a week before they die”. *The Irish Times*. Available at: <https://www.irishtimes.com> (Accessed: 26 August 2025).

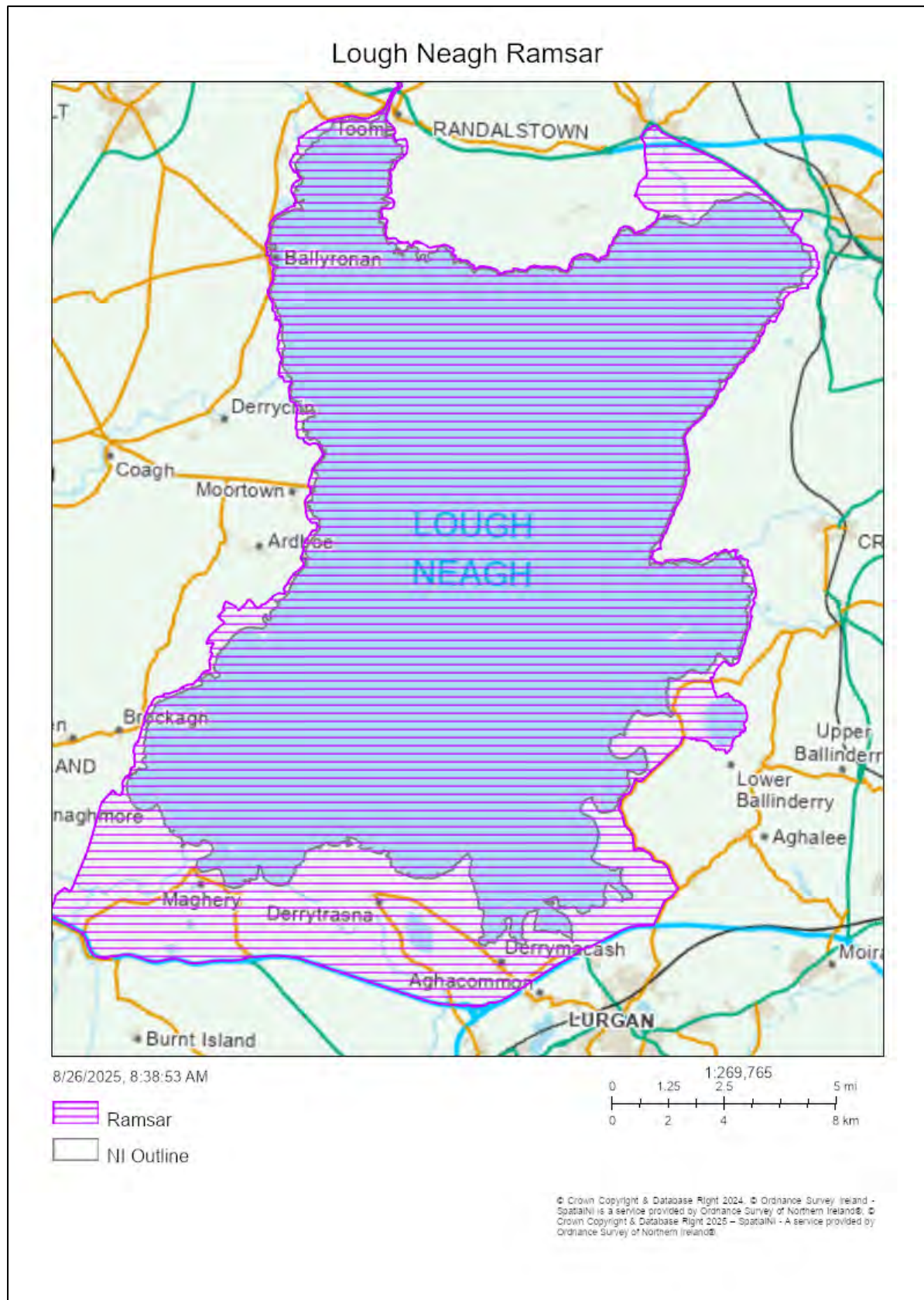
Lough Neagh Landscape Partnership (n.d.) “Latest news”. Available at: <https://loughneaghlp.com> (Accessed: 26 August 2025).

Ramsar Sites Information Service (2005) “Lough Neagh and Lough Beg”. Available at: <https://rsis.ramsar.org> (Accessed: 26 August 2025).

S3 Amazonaws (n.d.) “Lough Neagh briefing report”. Available at: <https://s3.eu-west-2.amazonaws.com> (Accessed: 26 August 2025).

New Harmonica (2015) “Neagh–Bann International River Basin (UK, Ireland)”. Available at: <https://newharmonica.eu> (Accessed: 26 August 2025).

APPENDIX 1: MAPS

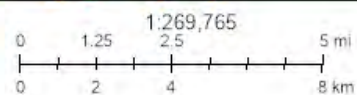


Lough Neagh Special Protection Area



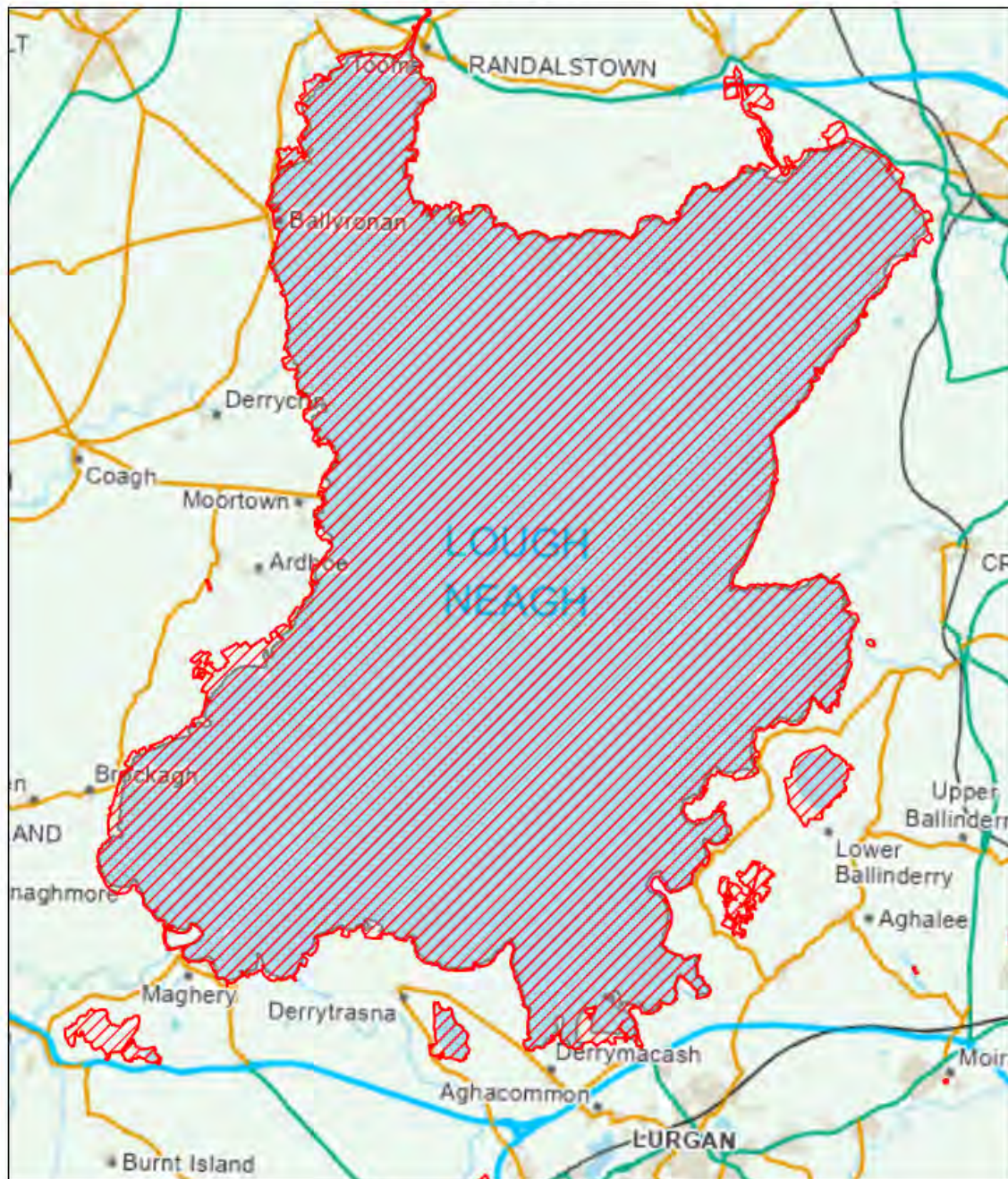
8/26/2025, 8:46:00 AM

-  National Site Network - Special Protection Area
-  NI Outline



© Crown Copyright & Database Right 2024. © Ordnance Survey Ireland - SpatialNI is a service provided by Ordnance Survey of Northern Ireland. © Crown Copyright & Database Right 2025 - SpatialNI - A service provided by Ordnance Survey of Northern Ireland.

Lough Neagh ASSI



8/26/2025, 8:48:47 AM

 Area of Special Scientific Interest
 NI Outline

1:269,765
 0 1.25 2.5 5 mi
 0 2 4 8 km

© Crown Copyright & Database Right 2024. © Ordnance Survey Ireland - SpatialNI is a service provided by Ordnance Survey of Northern Ireland. © Crown Copyright & Database Right 2025 - SpatialNI - A service provided by Ordnance Survey of Northern Ireland.

APPENDIX 2: STRATEGIC, POLICY AND LEGISLATIVE NOTES

1. Government

NI Executive: Draft Programme for Government 2024 – 2027

[Our Plan: Doing What Matters Most \(northernireland.gov.uk\)](https://www.northernireland.gov.uk/our-plan)

Priority: Protecting Lough Neagh and the Environment

Actions

- **Environmental Strategy:** Publish a new environment strategy which will be adopted as Northern Ireland's first Environmental Improvement Plan (EIP).
- **Climate Action:** Set carbon budgets and develop a Climate Action Plan, detailing cross-cutting steps to reduce carbon emissions, adapt to changing weather patterns, and work towards net zero.
- **Interagency Protocols:** Develop an Interagency Monitoring Protocol to clarify what monitoring will be carried out, and by whom, in response to future blooms of blue-green algae at any site.

Environmental Improvement Plan for Northern Ireland

[Environmental Improvement Plan for Northern Ireland \(daera-ni.gov.uk\)](https://www.daera-ni.gov.uk/environmental-improvement-plan-for-northern-ireland)

The Environmental Improvement Plan for Northern Ireland (EIPNI) draws from a variety of national, regional, and international plans and strategy documents that shape its priorities and actions. These documents reflect commitments to environmental protection, biodiversity, and climate change mitigation

Heritage and Cultural Conservation Policies

- **Historic environment protection:** Archaeological and built heritage around Lough Neagh are safeguarded by the Historic Monuments and Archaeological Objects (NI) Order 1995 (which allows scheduling of sites) and by planning laws (Planning (NI) Act 2011 and related policy). For example, Article 3 of the 1995 Order makes it an offence to alter scheduled monuments without consent. Local Sites of Local Nature Conservation Importance and listed buildings around the shore are also protected through planning.
- **National Nature Reserves (NNR):** Several areas near Neagh are NNRs. Notably, the ~80 islands on Lough Neagh are designated a single "Lough Neagh Islands" NNR, managed to provide safe nesting sites for tens of thousands of waterfowl. This reserve is a publicly recognized acknowledgement of the islands' biodiversity importance.
- **Cultural heritage initiatives:** While not statutory law, community-driven plans guide cultural conservation. In 2014 the Lough Neagh Partnership published a Cultural Heritage Audit & Action Plan (funded by Heritage Lottery) to document folklore, archaeology and traditional uses of the Lough. This plan has spurred

on projects like a heritage-signage trail and community archaeological program. A forthcoming 10-year Heritage Resilience Plan (2024) is engaging local communities to protect Neagh's folklore, historic sites and cultural assets in a sustainable way. Such initiatives stress balancing local heritage with environmental conservation, embedding the Lough in regional heritage tourism.

2. Biodiversity and Ecological Protection

- **Designations:** Lough Neagh and its environs carry multiple nature conservation designations. The entire Lough (with Lough Beg) is a Ramsar wetland of international importance and a Special Protection Area (SPA) under the EU Birds Directive. Together these cover ~39,500 ha (Ramsar) / ~41,188 ha (SPA) and qualify on waterfowl criteria (e.g. whooper swans, goldeneye, pochard). The SPA also notes breeding colonies of common terns. Moreover, in 1992 Lough Neagh/Beg was declared an Area of Special Scientific Interest (ASSI), the highest NI nature conservation status, reflecting its species-rich aquatic vegetation and wetlands. Several adjacent ASSIs protect peatlands and fen (e.g. Aghadrumsee, Montiagh's Moss). In total there are multiple ASSIs, three SACs (e.g. Rea's Wood, Farr's Bay with alluvial woodlands), and six NNRs in the catchment. All these designations underscore Neagh's role as a biodiversity hotspot.
- **Protected species and habitats:** Rare flora on Neagh's shores (e.g. eight-stemmed waterwort, marsh pea, orchids) are protected under Wildlife Order 1985 Schedule 8. The Lough also supports endangered fish (Irish pollan, lamprey) and the endangered European Eel. Its wetlands host exceptionally high waterfowl numbers: peak counts average ~66,800 birds in winter, including internationally important numbers of whooper swan, pochard, tufted duck and others. In summer it has globally important breeding colonies of black-headed gull and great crested grebe.
- **Policy for species/habitats:** These designations impose statutory controls: any development or activity that might damage habitats or disturb protected species requires planning scrutiny and often derogation licenses. The Wildlife (NI) Order 1985 (as amended) prohibits disturbance of listed species (e.g. amphibians, breeding birds) and regulates trade in wildlife. Planning Policy Statement 2 (Natural Heritage) and successor policies require that planning proposals preserve these protected areas. The ASSI status is backed by formal Management Statements (though in practice, engagement with stakeholders has been limited until recent years). Hunting and fishing are also regulated; DAERA (Agriculture/Environment) must license activities that affect protected habitats or fish stocks. LNFCS scale fish permit scheme protects above and beyond DAERAs fishing and habitats.
- **Local ecological strategies:** In 2014 the Lough Neagh Partnership led a Local Biodiversity Action Plan (LBAP) for the basin (which continued on from the previous LBAP launched by the partnership in 2008). These LBAPs focused on conserving priority species and habitats guiding on-the-ground measures.

Nearby, NGOs (e.g. RSPB, Ulster Wildlife) manage nature reserves (e.g. Portmore Lough Reserve) that benefit the Neagh ecosystem.

3. Governance and Management Structure

- **Government bodies:** Multiple agencies share authority over Lough Neagh. DAERA (NIEA) is the lead for environmental protection (water quality, habitats, pollution enforcement) and conservation. DfI Rivers (Department for Infrastructure) holds statutory drainage and flood responsibilities. Under the Drainage (NI) Order 1973 and the Lough Neagh Acts (1955, 1970), DfI Rivers must regulate water levels and maintain drainage infrastructure. For example, any works that affect the Lough's level (weirs, drains) require DfI consent, and the department coordinates flood risk management. Local Councils (5 around the Lough) (Mid Ulster; Mid & East Antrim; Antrim & Newtownabbey; Armagh/BT & Craigavon; Lisburn/CC) are responsible for planning and local development. Each council must integrate Neagh's conservation into its plans and community planning processes.
- **Co-ordination bodies:** Unlike other great lakes, Neagh has no single statutory management authority. A 2017 report noted that despite being "the largest ASSI and SPA in NI and Ireland," Neagh has "no formal statutory management body" covering all interests. To fill this gap, the Lough Neagh Partnership (a non-statutory board) brings together stakeholders: local councillors, fishing cooperatives, farmers, conservation NGOs (e.g. RSPB), tourism and angling representatives. The board is currently chaired by a local fisherman, and meets regularly with DAERA and other agencies. It coordinated the recent Heritage and Algae plans and acts as a voice for the community. In 2024 it has begun exploring new governance models (even community ownership) to empower locals.
- **Ownership and rights:** Uniquely, the bed and soil of Lough Neagh are owned by the English Shaftesbury Estate (the heirs of Lord Shaftesbury) – an arrangement dating from 17th-century grants. The Lough Neagh Fishermen's Cooperative leases fishing rights as opposed to owning eel fishing rights and lease the scale rights. Recreational rights retained by the Honorable The Irish Society (three rods in the north-west area) is also noted. This further complicates management. For example, new activities on the lakebed (e.g. laying cables) may require landowner permission as well as governmental licences. In practice, DAERA and DfI enforce environmental law (water pollution, conservation) regardless of land tenure, but the ownership adds a political dimension to governance.
- **Enforcement:** NIEA enforces habitat/species laws (issuing SSSI consents, prosecuting wildlife crimes), and monitors water quality under environmental legislation. DfI Rivers enforces drainage laws and flood defences. NI Water (a government-owned utility) operates the sewer network and treatment plants; its discharges are regulated under NI law. If pollution or water levels are mismanaged, DAERA and DfI have powers to require remediation or levy fines under statutes like the Water (NI) Order 1999.

4. Agriculture and Water Quality Regulation

- **Water Framework Directive (WFD) – River Basin Planning:** The EU WFD (2000/60/EC) creates an overarching, integrated system for protecting all waters. In NI it was transposed by the Water Environment (Water Framework Directive) Regulations (NI) 2017 (retained post-Brexit by an EU Exit amending instrument). The aims of the Neagh–Bann River Basin Management Plan (first published 2009) embodies this approach. Its aims include “improv[ing] the ecological health of our waters and prevent any further deterioration” and “support more sustainable use of water as a natural resource”. The Plan sets out “programmes of measures” (across agriculture, sewage, industry, hydropower, etc.) to achieve at least “Good” status in each waterbody by set deadlines. These measures guide actions in the Neagh catchment on a 6-year cycle. In practice, DAERA (in partnership with farmers, councils, NI Water, etc.) implements riparian buffers, pollution controls, and remediation to meet these targets.
- **Nitrates Directive:** To curb farm-derived nitrogen and phosphorus pollution, NI implements EU Nitrates Directive (91/676/EEC) via domestic regulations. Early NI law (1996 Protection of Water Against Agricultural Nitrate Pollution Regs) and NVZ Regulations (1999) have been superseded by successive Nitrates Action Programme (NAP) Regulations. NI adopted a “whole territory” approach (all farmland) rather than delineating specific vulnerable zones. The latest NAP Regulations (NI 2014, amended 2019) require farmers to keep fertilisation plans and nutrient accounts, use proper manure storage, and observe closed periods for spreading. These rules are enforced under cross-compliance: e.g. to receive farm payments, a farmer must comply with the NAP standards. Record-keeping is audited by NIEA. In addition, DAERA introduced a Soil Nutrient Health Scheme (2023) to train farmers on balanced fertiliser use (related to Nitrates directive goals).
- **Sewage and Urban Waste Water:** The Urban Wastewater Treatment Directive (91/271/EEC) protects waters from sewage. NI transposed it via the Urban Wastewater Regulations (NI) 1995 (as amended) and 2007. These require settlements above certain sizes to have sewers and secondary (or tertiary) sewage treatment. Northern Ireland Water (NIW) is responsible for collecting and treating domestic and industrial wastewater. If a proposed development cannot connect to mains sewers, the developer must obtain a **Discharge Consent** from NIEA under the Water (NI) Order 1999. In practice, any sewage effluent discharge to Neagh (outside NIW system) must meet strict quality limits. These rules have become a focal point: upgrades to NIW treatment works (e.g. removing nutrients) are part of the 2024 plan.
- **Other Water Quality Regulations:** NI also enforces the Drinking Water Directive (98/83/EC) via The Water Supply (Water Quality) Regulations (NI) 2017, ensuring Neagh-derived public water meets safety standards. The Quality of Bathing Water Directive (2006/7/EC) is implemented by Regulations (NI) 2008, requiring regular testing of designated bathing spots. (Lough Neagh has had informal bathing areas and at least one inland designated site – e.g.

Rea's Wood – monitored under these rules.) Industrial and farm processes also fall under Pollution Prevention & Control regulations (e.g. the Industrial Emissions Directive via NI laws) to limit discharges of hazardous substances.

- **Agricultural schemes:** In addition to regulatory sticks, NI uses incentives. Successive agri-environment schemes (e.g. Environmental Farming Scheme) have funded hedge restoration and buffer strips to reduce run-off. The “Farming with Nature” schemes (DAERA, 2025) explicitly aim to improve water quality in sensitive catchments like Neagh. All these agricultural policies feed into reducing nutrient loads to the lake.

5. Major Current Action Plans

- **DAERA's 37-Point Lough Neagh Action Plan (2024):** In July 2024 the Minister launched a targeted plan to tackle Neagh's blue-green algae crisis. This Lough Neagh Report sets 37 actions around four pillars: Education, Investment, Regulation, and Enforcement. It focuses on the root causes (primarily agricultural runoff and sewage pollution). Key measures include farmer training (nitrogen management), stricter effluent controls, scientific monitoring, and habitat restoration. The Executive approved the plan, and stakeholders (councils, farmers, NGOs) have committed to rapid implementation. For example, Ulster Wildlife supported the emphasis on investment in technology and enforcement. This plan is the centrepiece of current action.
- **River Basin Management Plan (RBMP):** Under the WFD, the Neagh–Bann RBMP (first 2009, updated 2015–21 and 2022–27) drives long-term measures. It involves “catchment stakeholders” in joint projects (e.g. riparian buffer grants, monitoring networks) and publishes reports on water status. The plan highlights the ecological challenges faced by Lough Neagh, particularly the blue-green algae crisis that emerged in the summer of 2023. This crisis prompted the publication of the Lough Neagh Report and Action Plan in July 2024, which aims to address water quality issues and build on the objectives of the RBMP. The strategic alignment of the Lough Neagh initiatives with other strategies, plans, and policies is evident in several areas. The RBMP's objectives for Lough Neagh are integrated with the broader goals of the Water Framework Directive (WFD), which aims to achieve good ecological status for all water bodies by 2027. The Lough Neagh Report and Action Plan complement these objectives by focusing on specific measures to improve water quality, such as reducing nutrient inputs and managing agricultural runoff. This alignment ensures that efforts to restore Lough Neagh contribute to the overall targets set by the WFD. The RBMP emphasizes the importance of cross-border cooperation with Ireland, particularly in managing shared water bodies like Lough Neagh. The plan outlines collaborative efforts through various working groups, such as the North West Water Forum and the North South Rivers and Lakes Group. These groups facilitate joint actions and information sharing, ensuring that strategies for Lough Neagh are coordinated with similar initiatives in Ireland. This cross-border approach is crucial for addressing transboundary water quality issues and achieving the shared environmental objectives of both regions. The RBMP also aligns with Northern Ireland's Green Growth Strategy, which promotes

sustainable development and environmental protection. The measures proposed for Lough Neagh, such as the Soil Nutrient Health Scheme and the Sustainable Catchment Programme, support the Green Growth Strategy by encouraging sustainable agricultural practices and reducing nutrient pollution. These initiatives not only improve water quality but also contribute to broader environmental and economic goals, such as enhancing biodiversity and supporting sustainable agriculture. The plan highlights the role of local communities, farmers, and other stakeholders in implementing measures to improve water quality. This participatory approach is essential for ensuring the success of the Lough Neagh Action Plan, as it fosters a sense of ownership and responsibility among those directly affected by the lake's ecological health.

The strategic alignment of the Lough Neagh initiatives with other policies is also evident in the integration of climate change adaptation measures. The RBMP recognises the impact of climate change on water quality and includes actions to enhance the resilience of water bodies like Lough Neagh. These measures are consistent with Northern Ireland's broader climate adaptation policies, ensuring that efforts to restore Lough Neagh also contribute to mitigating the effects of climate change.

- **Local Biodiversity Plan (2014):** The Lough Neagh Partnership's LBAP continues to influence management. It highlights conservation of wetlands and species (e.g. reedbeds, fens, pollan) and is used in local planning and by NGOs to prioritize projects. For instance, small-scale schemes to re-wet cut-over bogs or replant hedgerows on farms reflect LBAP priorities.
- **Heritage Lottery/Partnership Scheme (2016–21):** A major grant-funded initiative (the Lough Neagh Landscape Conservation Action Plan) ran from 2016–21. It delivered archaeological digs, interpretive signage, and nature-reserve improvements around the lake. Its blueprint and final reports (e.g. the Partnership Plan we used) identified gaps in management and fed into the 2024 action plan.
- **Freshwater Task Force Plans:** NI's Freshwater Task Force (a coalition of environment NGOs) is developing catchment-wide plans across NI. In 2023 Ulster Wildlife and partners began drafting a Lough Neagh Basin Plan to align farmer actions with water quality needs. These are voluntary collaborative plans to supplement regulation.

6. EU Directives and NI Transpositions

Because NI remains aligned with EU environmental rules under the Protocol, many EU directives still apply (now “retained EU law”). Key examples:

- **Birds Directive (2009/147/EC):** Requires SPAs for bird conservation. In NI this is implemented via the Wildlife (NI) Order 1985 (Part III) and the Birds and Habitats Regulations (NI). Lough Neagh & Beg SPA (declared 1998) is an outcome of this law. The SPA designation legally protects the site from developments harmful to its bird species.

- **Habitats Directive (92/43/EEC):** Requires SACs for habitats and species. Transposed by the Conservation (Natural Habitats, etc.) Regulations (NI) 1995. Within the Neagh landscape there are several SACs (e.g. Rea's Wood – Carrickabraghy and Farr's Bay) protecting alluvial woodland and swamp. NI's SAC network (Natura 2000) obliges the government to maintain favourable conservation status and assess plans via "Habitat Regulation Assessments."
- **Water Framework Directive (2000/60/EC):** As noted above, transposed by Water Environment (WFD) Regulations (NI) 2017. These regs establish the requirement to achieve "Good Status" for waters, categorize water bodies, and run RBMPs. The WFD's river-basin management is the legal basis for many Neagh measures (e.g. diffuse pollution controls). The WFD was retained after Brexit by specific Regulations (2019).
- **Nitrates Directive (91/676/EEC):** Transposed by a series of SI's, culminating in the Nitrates Action Programme (NI) Regulations 2014 (and amendments). This Directive underpins much of NI's farm-nutrient law.
- **Urban Wastewater Directive (91/271/EEC):** Transposed by the Urban Wastewater Treatment Regulations (NI) 2007. This ensures sewage treatment plants meet EU standards. Compliance is monitored by DAERA in conjunction with NI Water.
- **Bathing Water Directive (2006/7/EC):** Transposed by The Quality of Bathing Water Regulations (NI) 2008. These require DAERA to classify and report on formal bathing sites. In NI there are some inland and coastal bathing waters, and their inclusion raises awareness of microbiological pollution (though Neagh's beaches are generally low use).
- **Drinking Water Directive (98/83/EC):** Transposed by the Water Supply (Water Quality) Regulations (NI) 2017. Any public water supply abstraction (Lough Neagh provides ~40% of NI's drinking water) must meet strict chemical and microbiological limits. In practice this means NI Water's treatment of Neagh water is guided by these standards.
- **Environmental Impact Assessment (EIA) Directive:** Large developments (roads, landfills, agriculture schemes) must undergo EIA if above thresholds, under NI regs (e.g. EIA (Agriculture) NI 2017). So projects in the Neagh catchment (e.g. new poultry farms, drainage works) may need EU-style impact studies and public consultation.
- **Floods Directive (2007/60/EC):** NI transposed this via the Floods Directive (NI) 2011. It mandates flood mapping and management plans. The Lough and River Bann are covered by Area Flood Risk Management Plans, which consider climate change impacts on water levels.

These directives (and others like the Industrial Emissions Directive, Shellfish Waters Directive, etc.) are "part of the body of EU law" applying in NI. In 2019-2020 NI enacted EU Exit Regulations to preserve or adapt these laws post-Brexit (for example, the Water (Amendment) (NI) (EU Exit) Regs 2019 retains WFD rules). In short, much of

the Neagh regulatory framework is derived from EU environmental law, implemented through NI legislation and enforced by DAERA and DfI.

OTHER STRATEGIC INFLUENCES

UN Sustainable Development Goals (SDGs)

The UN SDGs, a globally recognized framework for sustainable development, form a foundational guide for the Loughs Agency. The Agency's core functions align particularly with SDG 14 (Life Below Water) and SDG 13 (Climate Action). SDG 14 emphasizes the sustainable management of marine ecosystems, a mandate central to the Agency's statutory obligations. This includes promoting biodiversity, addressing overfishing, and mitigating pollution. Meanwhile, SDG 13's call for resilience to climate change aligns with the Agency's integration of climate adaptation measures within its conservation strategies.

Through initiatives aimed at sustainable fisheries, habitat restoration, and the promotion of ecosystem services, the Loughs Agency directly advances these goals. The Agency's collaborative endeavours, which prioritize cross-border cooperation and community engagement, resonate with SDG 17 (Partnerships for the Goals). By embedding the SDGs into its strategic framework, the Agency ensures that its actions contribute to global sustainability objectives while reinforcing its local and regional relevance.

Convention on Biological Diversity (CBD)

The Loughs Agency's strategy aligns strongly with the CBD's goals of biodiversity conservation, sustainable use of biological resources, and equitable benefit-sharing. Its commitment to safeguarding aquatic ecosystems mirrors the CBD's Aichi Biodiversity Targets and the Kunming-Montreal Global Biodiversity Framework.

The Agency's specific actions, such as invasive species management, habitat restoration, and conservation research, embody the ecosystem-based approaches advocated by the CBD. Additionally, its role as a transboundary body enhances the implementation of integrated conservation efforts across jurisdictions, a key CBD objective. These initiatives position the Agency not only as a steward of local ecosystems but as a critical player in regional and international biodiversity preservation efforts.

Northern Ireland Climate Change Act (2022)

The Northern Ireland Climate Change Act mandates legally binding targets for greenhouse gas emissions reduction and climate resilience. The Loughs Agency's strategic emphasis on climate adaptation and mitigation reflects these legislative imperatives through its Climate Action Plan.

Key initiatives include the application of "Just Transition" principles to support equitable economic shifts, the promotion of renewable energy within marine industries, and the reduction of carbon footprints in fisheries operations. The Agency's focus on ecosystem-based solutions, such as wetland restoration and afforestation, further reinforces climate resilience. These actions not only align with the Act's provisions but

demonstrate the Agency's proactive commitment to fostering a low-carbon, climate-adaptive future.

Northern Ireland Biodiversity Strategy (2022)

The Northern Ireland Biodiversity Strategy outlines a vision for halting biodiversity loss and restoring ecological integrity. The Loughs Agency's conservation initiatives, including habitat restoration, species monitoring, and public education, are instrumental in advancing these objectives.

The Agency's focus on managing invasive species, enhancing aquatic habitats, and fostering biodiversity awareness among stakeholders aligns seamlessly with the strategy. Furthermore, its integration of local communities into conservation efforts amplifies its impact, ensuring that ecological restoration is both participatory and sustainable.

Section 1

Heritage Resilience Plan for Lough Neagh:

Part 1b

Enhancing the Heritage Resilience Plan for Lough Neagh through international benchmarking and strategic alignment.

INTRODUCTION

Lough Neagh, the largest freshwater lake in the British Isles, possesses significant ecological, cultural, and economic value. Yet, its heritage resilience is compromised by fragmented governance, environmental degradation, and limited statutory authority. This paper seeks to enhance the strategic logic and structural sophistication of the proposed Heritage Resilience Plan for Lough Neagh through comprehensive benchmarking against leading national and international heritage planning models. Drawing from case studies in the United Kingdom, Ireland, and internationally recognised landscapes such as Ramsar Sites and UNESCO World Heritage cultural landscapes, this analysis explores core dimensions of governance integration, cultural-natural linkage, community participation, and climate adaptation. Through critical synthesis, this benchmark report proposes a robust framework aligning Lough Neagh's heritage management with global best practices, reinforcing its potential as a model for integrated landscape stewardship. To enhance credibility, adaptability, and operational sophistication, the Lough Neagh Heritage Resilience Plan must meet rigorous standards already in practice across internationally recognised heritage sites. This report evaluates comparative frameworks and distils them into an actionable design for Lough Neagh.

Key Dimensions of Benchmarking:

- Governance Integration
- Cultural-Natural Linkage
- Community Participation
- Climate Adaptation Capacity

The challenges facing Lough Neagh are multifaceted. Its environmental richness, deep-rooted cultural practices, and socio-economic relevance underscore the urgency of developing a coherent and operationally sound Heritage Resilience Plan. However, the plan must be constructed upon a solid foundation of global best practice to attain legitimacy, scalability, and impact. Benchmarking against internationally recognized conservation and heritage management models provides a methodologically grounded approach to achieving this.

Heritage landscapes globally are increasingly managed through integrated frameworks that blend statutory authority with community engagement, ecological monitoring with cultural safeguarding, and traditional knowledge with adaptive responses to climate change. The European Landscape Convention, UNESCO's Operational Guidelines for Cultural Landscapes, and Ramsar's wise use principle offer a normative baseline. This study benchmarks Lough Neagh against selected exemplars to critically evaluate how the proposed plan might align with these principles while addressing its own unique governance and ecological constraints.

COMPARATIVE BENCHMARKING FRAMEWORK

To inform and refine the Heritage Resilience Plan for Lough Neagh, this section presents a structured comparative benchmarking framework, analysing how selected heritage landscapes—both domestic and international—have addressed challenges analogous to those facing Lough Neagh. Through detailed case studies, the framework identifies and evaluates best practices in governance integration, cultural-natural heritage linkage, community participation, and climate adaptation. Each dimension is assessed against globally recognised exemplars such as the Lake District (UK), Burren Geopark (Ireland), Saloum Delta (Senegal), Hortobágy National Park (Hungary), and Lake Vättern (Sweden) alongside critical comparators within the UK and Ireland: the Broads Authority (England) the Mar Menor Lagoon (Spain) and the Shannon River System (Ireland).

This framework not only provides diagnostic insight into Lough Neagh’s current limitations but also offers an operational pathway for embedding international standards of heritage management. The intent is to move beyond aspirational goals by grounding strategic design in the proven methodologies and institutional arrangements of high-performing heritage landscapes. In doing so, the comparative benchmarking exercise becomes a foundational tool for constructing a resilience strategy that is context-sensitive, evidence-based, and aligned with global conservation and development goals. By comparing Lough Neagh across four core resilience dimensions - Governance Integration, Cultural-Natural Linkage, Community Participation, and Climate Adaptation - the benchmarking framework identifies gaps, opportunities, and design principles to guide future implementation.

Table 1: Benchmarking Comparison

Site/Model	Governance Integration	Cultural-Natural Linkage	Community Participation	Climate Adaptation
Lough Neagh (current)	Fragmented governance across multiple agencies; no statutory lead	Strong oral and working heritage (e.g. eel fisheries), but poorly integrated	Lough Neagh Partnership active; lacks statutory powers	Eutrophication, invasive species addressed via ad hoc projects
Broads Authority, UK	Statutory body under Broads Act 1988	Navigable waters + wetland ecology + cultural use	Volunteer rangers, local boards, education programmes	Peatland restoration, water/flood strategies
Shannon River, Ireland	Multi-agency, no central statutory body	Riverine landscape, historic navigation, tourism heritage	Consultative plans under Tourism Masterplan	River basin planning, some nature-based pilots

Lake District, UK	Multi-stakeholder Partnership Plan with statutory backing	Integrated World Heritage designation links farming, aesthetics, heritage	Character Area assessments guide local engagement	Peatland rewetting, flood risk management
Burren, Ireland	NGO and Council, backed partnerships	Burren Code links archaeology, biodiversity, farming	Community Charter + education programmes	Land use strategies, tourism-carbon balancing
Saloum Delta, Senegal	Co-management between communities and wetland authorities	Shellfish heritage + mangrove conservation	Participatory governance in restoration and decision-making	Mangrove carbon credit schemes, fisheries sustainability
Hortobágy, Hungary	Statutory authority under World Heritage and national law	Pastoralism, wetlands, and folklore as a managed unity	Folklore and traditional use embedded in management	Adaptive wetland planning and EU-aligned biodiversity funding
Lake Vättern, Sweden	Biosphere-led, multi-stakeholder governance with public-private coordination	Natural trails + cultural history combined	Volunteer monitoring + stakeholder committees	Cleanest waterbody in EU; strong monitoring and adaptive responses
Mar Menor Spain	Statutory Rights of Nature Site	Traditional fishing and wellness tourism promoted	Public administration and citizen representatives.	Rewilding and nutrient management and wetland restoration
Rathlin Island	Interdepartmental group working to agreed plan	Rich cultural heritage linked to biodiversity of Island and Sea	Strong stakeholder and community integration	Conservation of endangered seabird colonies due to climate change impact

GOVERNANCE INTEGRATION: LESSONS IN INSTITUTIONAL COHESION AND AUTHORITY

Effective heritage landscape governance hinges upon clearly defined institutional roles, legal authority, and inter-agency coordination. Among the case studies examined, the Broads Authority in England stands as a seminal model. Established under the Broads Authority Act 1988, this statutory body combines planning, navigation, and conservation mandates under a single institutional umbrella. Its capacity to regulate development, enforce conservation actions, and coordinate with national agencies such as the Environment Agency and Natural England illustrates a mature governance regime.

In contrast, Lough Neagh suffers from an absence of strategic governance. While the Lough Neagh Partnership (LNP) serves as a vibrant stakeholder forum, its powers are non-statutory and largely project based. The existing Lough Neagh Act (1955) is outdated and does not provide adequate legal tools to manage contemporary challenges. Responsibilities for environmental oversight are dispersed among DAERA, NIEA, local councils, and multiple regulatory agencies in both Northern Ireland and the Republic of Ireland, given the transboundary nature of its catchment. This fragmentation not only hampers coherent planning but undermines long-term stewardship.

The Shannon River system in Ireland offers another instructive comparison. Despite its ecological and cultural prominence, its management remains fragmented across Waterways Ireland, the Office of Public Works, and several local authorities. The Shannon Tourism Masterplan (2020-2030) represents an attempt to foster cohesion, yet it still lacks the enforcement mechanisms and statutory authority enjoyed by the Broads Authority. These lessons suggest that for Lough Neagh to achieve resilient governance, a new statutory body or a legally empowered catchment-wide authority is indispensable.

Lake Vättern in Sweden further reinforces this point through a hybrid governance model where the Lake Vättern Society of Water Conservation, composed of stakeholders from municipalities, NGOs, fisheries, and government agencies, collaborates under Biosphere Reserve guidelines. This structure combines democratic legitimacy with technical coordination, ensuring broad-based engagement while maintaining policy coherence.

Benchmark Findings:

- **Statutory Authority is preferable but unlikely due to need for new legislation and government funding limitations:** Both the Broads Authority (UK) and Hortobágy National Park (HU) demonstrate the efficacy of landscape-specific bodies with legal mandates. The Broads Act 1988 grants planning and navigation authority, while Hortobágy operates under Hungarian environmental law.
- **Successful Coordination Models:** In contrast, the Shannon Catchment (Ireland) illustrates how a lack of legalised, centralised authority, despite inter-agency efforts, leads to fragmented delivery.

- Local Co-management: The Lake Vättern Society shows a robust, volunteer-driven yet coordinated system where different committees operate under Biosphere Reserve guidelines.

Application to Lough Neagh:

- A Lough Neagh Statutory Authority or a formalised Catchment Governance Board is necessary. A hybrid of the Broads model (legal authority) with Shannon's cross-border collaboration and Vättern model (community governance) could be optimal.

CULTURAL AND NATURAL HERITAGE INTEGRATION: HARMONISING LANDSCAPE IDENTITIES

The integration of cultural and natural heritage is a cornerstone of contemporary landscape management. UNESCO's World Heritage designation of the Lake District in England exemplifies this approach. Its inscription was justified on the basis of combined criteria, recognizing the interdependence of its scenic value, vernacular architecture, and pastoral traditions. The Lake District Partnership Plan articulates management priorities that respect this entanglement, deploying Character Area assessments to develop place-specific responses.

Similarly, the Burren and Cliffs of Moher Geopark in Ireland demonstrates exemplary practice in cultural-natural integration. Its Geopark Code of Practice embeds sustainability within tourism, farming, and community development. The karst landscapes, prehistoric field systems, and vernacular settlements are protected not merely as isolated features but as interconnected components of a living cultural landscape.

Lough Neagh possesses an equally compelling cultural-natural heritage. The eel fisheries, crannogs, wetland ecologies, and oral traditions represent an underarticulated yet profoundly interwoven heritage fabric. However, current conservation efforts tend to treat ecological and cultural assets as parallel rather than integrated domains. The proposed Lough Neagh Heritage Impact Zone (LNHIZ) and Living Heritage Register offer pathways to rectify this, yet their operational design must mirror the best practices of the aforementioned case studies. These tools should be underpinned by landscape characterisation, cross-disciplinary planning, and legal recognition of intangible cultural assets.

The Saloum Delta in Senegal offers a powerful international analogue. As both a Ramsar site and UNESCO Cultural Landscape, the Delta safeguards mangrove ecosystems and shellfish fishing traditions through integrated community-based governance. This model validates the dual conservation of biodiversity and traditional livelihoods, illustrating how cultural landscapes can support both ecological integrity and human wellbeing.

The Broads Authority manages a landscape where navigation, cultural heritage (e.g., historic mills, reed cutting), and ecological wetlands are not separated but jointly planned. This reinforces how legal designation can formalise integrated heritage narratives.

The Shannon River presents a more dispersed model. Its navigational and industrial heritage, from canals to towpaths, is rich but not yet embedded in unified conservation frameworks. Its Tourism Masterplan provides direction but lacks hard policy instruments.

Benchmark Findings:

- World Heritage Sites (e.g. Lake District, Saloum Delta) perform best where heritage and ecology are inseparable. The Lake District's combined designation

criteria showcase the potential of integrating farming, tradition, and visual landscape into one planning narrative.

- World Heritage and Geopark sites excel where cultural identity is legally linked to ecological zones (e.g., Lake District, Burren, Saloum Delta). The Burren Geopark leverages archaeological field systems, vernacular settlement, and biodiversity into a cohesive strategy.
- Saloum Delta integrates cultural fishing with ecological conservation, monetizing ecosystem services.
- Mar Menor Lagoon provides a unique legal model which still involves local communities.
- Rathlin Island Model provides a simple interdepartmental forum structure whereby senior civil servants meet twice a year and agree to work to a common agreed Rathlin Plan involving investment from all the main departments. Stakeholders and communities are also represented.

Application to Lough Neagh

- The proposed Living Heritage Register could merge ecological value (e.g., eel habitats, peatlands) with intangible culture (fishing, folklore).
- Promote a Cultural-Natural Heritage Overlay in planning zones, ensuring both cultural sites and natural habitats are managed cohesively.
- Explore formal designation such as a UNESCO World Cultural Heritage designation, Rathlin Island Model or a Rights of Nature Site or (e.g., Rights of Nature, Geopark or Biosphere Reserve status).

COMMUNITY PARTICIPATION: EMBEDDING LOCAL AGENCY IN RESILIENCE PLANNING

Community participation is not merely a procedural requirement but a substantive determinant of heritage resilience. In this domain, the Burren Geopark's Community Charter, developed collaboratively with residents, farmers, and local businesses, provides a replicable blueprint. This Charter enshrines community values, sustainability principles, and participatory governance mechanisms. It is complemented by education initiatives and intergenerational knowledge transmission that deepen public ownership of heritage processes.

In the Broads, structured community participation is central. Volunteer ranger programmes, local boards, and public biodiversity surveys create real co-ownership. Similarly, Lake Vättern's citizen committees and Burren's Community Charter institutionalise local agency.

Lake Vättern's management also exemplifies community involvement through its stakeholder councils and citizen science initiatives. These structures empower local actors to co-design conservation agendas, monitor ecological trends, and shape policy dialogues. Similarly, the Broads Authority's engagement with volunteers in fen restoration, patrols, and biodiversity surveys demonstrates how community capacity can be harnessed to reinforce professional conservation efforts.

Lough Neagh already benefits from the energy of the LNP, which has facilitated community halls, artisan markets, and heritage trails. However, this engagement is insufficiently institutionalised. To emulate the models above, the LNP must be transformed into a broader stewardship network with dedicated subcommittees, such as a fishermen's council or cultural heritage advisory board. Furthermore, participatory monitoring should be mainstreamed through citizen science projects targeting bird counts, eel migration, and water quality.

The Saloum Delta again offers an important example. Its governance framework explicitly integrates local knowledge into restoration efforts, ensuring that policy interventions are both context-sensitive and locally accepted. This participatory ethos must be central to Lough Neagh's future governance architecture.

Benchmark Findings:

- Burren Code and Lake Vättern's stakeholder committees demonstrate high degrees of bottom-up involvement. Both use education, local stewardship charters, and voluntary monitoring.
- Broads and Burren demonstrate how formal charters and volunteer structures boost legitimacy and resilience.
- Shannon reveals the limits of consultative-only approaches.
- Saloum Delta's participatory co-management offers insights into managing complex aquatic and cultural systems collaboratively.

- The Broads Authority supports extensive educational outreach, volunteer patrols, and wildlife surveys.
- The Rathlin Model is very close to the interdepartmental requirements of a devolved smaller regional area like Northern Ireland.

Application to Lough Neagh:

- Expand Lough Neagh Partnership into a broader Community Stewardship Network, including fishermen's councils, arts/folklore groups and youth boards through adoption of structure sub and working groups.
- Formalise a Lough Neagh Community Heritage Charter aligned with the Burren Code or work of the Citizens Assembly.
- Implement citizen science projects for water quality, eel migration tracking, and invasive species monitoring.

CLIMATE ADAPTATION: EMBEDDING RESILIENCE WITHIN HERITAGE FRAMEWORKS

As climate change intensifies, heritage landscapes must adopt adaptive strategies that anticipate environmental shifts while preserving cultural continuity. The Broads Authority's Biodiversity and Water Strategy (2019-2024) exemplify this approach. It establishes measurable targets for species protection, water quality, and flood mitigation, linked to broader climate resilience indicators.

In the Lake District, peatland restoration projects and sustainable tourism infrastructure are deployed as dual adaptation and conservation tools. These initiatives reduce carbon emissions, enhance ecosystem services, and promote sustainable livelihoods.

Lake Vättern has achieved remarkable water quality outcomes through an ecosystem-based fisheries strategy and adaptive land management, validated by UNESCO Biosphere periodic reviews. These practices demonstrate that climate adaptation can be embedded within existing cultural and ecological frameworks.

For Lough Neagh, climate-related risks such as eutrophication, invasive species, and extreme weather events demand a systematic response. The proposed Heritage Resilience Scorecard could serve as a vehicle for integrating climate indicators, linking peatland health, fishery sustainability, and shoreline erosion to broader adaptive strategies. Moreover, nature-based solutions such as wetland buffer zones, rewilded catchments, and traditional water management practices should be prioritised.

Carbon monetisation, as explored in the Saloum Delta through mangrove restoration, represents an innovative financing mechanism that could be explored for Lough Neagh's peatlands. Such approaches would align the Resilience Plan with Ireland and Northern Ireland's biodiversity and climate action commitments.

Benchmark Findings:

- Broads, Lake District, and Vättern lead in integrating climate and heritage policy. Broads Authority's Biodiversity and Water Strategy sets strong ecological baselines and action thresholds.
- Shannon's fragmented approach shows why statutory authority is needed to scale adaptation.
- Lake District has pioneered peatland restoration and nature-based tourism as mitigation.
- Lake Vättern's adaptive fisheries and water quality monitoring set EU-leading standards.
- Saloum Delta showcases nature-based solutions (mangrove restoration) tied to carbon markets. Saloum Delta's carbon schemes suggest potential for Lough Neagh peatlands.
- Mar Menor Lagoon highlights strong rewilding opportunities

Application to Lough Neagh:

- Climate change must be embedded in Heritage Resilience Scorecard tools.
- Use Lough Neagh to pilot NI/ROI cross-border nature-based adaptation, such as peatland rewetting, habitat rewilding shoreline flood buffers, and eel migration corridors.
- Establish annual climate and biodiversity reports, modelled on the Broads Authority's "State of the Park."
- Explore carbon credits for restored peatlands (as in Saloum).

TOWARDS A COHERENT STRATEGIC FRAMEWORK FOR LOUGH NEAGH

The synthesis of benchmarking findings supports the development of a coherent, multidimensional Heritage Resilience Plan for Lough Neagh. This plan should rest on four interconnected pillars: statutory governance, cultural-natural integration, participatory stewardship, and climate resilience. First, governance reform is paramount. A statutory Lough Neagh Authority or formal catchment management plan must be established, drawing from the Broads and Waterways Ireland models. This entity should possess planning, conservation, and coordination powers, underpinned by clear legal mandates and cross-border collaboration. Second, cultural and natural heritage must be treated as an integrated whole. The Living Heritage Register must become an operational tool, co-produced with communities, and aligned with European Landscape Convention principles. Third, community participation should be embedded within all stages of planning and implementation. Stewardship charters, participatory monitoring, and citizen science programs should be scaled up and institutionalised. Dedicated advisory councils and intergenerational education initiatives would ensure continuity and legitimacy. Finally, climate adaptation must be mainstreamed through nature-based solutions, performance scorecards, and adaptive management protocols. The Resilience Plan should serve as a testbed for Ireland and Northern Ireland's commitments under the Biodiversity Strategy, Climate Action Plans, and Sustainable Development Goals. Table 2 below summarises the elements that a robust, best-practice-aligned Heritage Resilience Plan for Lough Neagh should incorporate.

Strategic Pillar	Component	Benchmark Alignment	Lough Neagh Application
Governance	Ministerial led interdepartmental management board	Broads Authority, Hortobágy, Rathlin Island	Possible creation of an interdepartmental body working to an agreed plan
	Integrated cross-border structure	Waterways Ireland, Shannon Catchment, Mar Menor	Engage both DAERA and Irish heritage agencies in shared catchment framework
Cultural-Natural Integration	Cultural Landscape Designation	Lake District, Hortobágy, Burren	Apply for UNESCO for Cultural Heritage Status
	Living Heritage Register	Burren, Saloum Delta	Co-develop with communities and oral historians
Community Engagement	Community Charter	Burren Code, Lake Vättern councils	Launch Lough Neagh Community Heritage Charter and linkage with Citizens Assembly
	Citizen Monitoring	Vättern, Broads	Equip and train community monitors
Climate Adaptation	Ecosystem-based management	Vättern, Saloum Delta, Mar Menor	Integrate peatlands, fisheries, tourism infrastructure

	Heritage Resilience Scorecard	Burren, Broads	Use for decision support, funding, monitoring
--	-------------------------------	----------------	---

CONCLUSION AND RECOMMENDATIONS

This study has demonstrated that through rigorous benchmarking against national and international exemplars, a Heritage Resilience Plan can be constructed that is credible, adaptable, and operationally robust. The path forward demands institutional courage, sustained investment, and community trust. By adopting the principles of integrated governance, cultural-natural cohesion, participatory stewardship, and climate adaptation, Lough Neagh can emerge as a leading example of landscape resilience and heritage innovation.

Recommendations:

- Formalise governance: Establish an empowered body for Lough Neagh (akin to the Broads Authority or Rathlin Model) to integrate planning, navigation and conservation. Consider cross-border cooperation given shared waterways.
- Strengthen community partnerships: Build on LNP by creating dedicated subcommittees (e.g. fishermen's council, cultural heritage council) and involve citizens in monitoring (bird surveys, water testing) as done in Vättern.
- Adopt ecosystem management: Use Lough Neagh as a pilot for Ireland/NI's biodiversity strategies, applying holistic plans (nutrients, fisheries, flood risk) similar to Vättern's approach.
- Enhance monitoring: Implement regular ecological reporting (water quality, eel and fish stocks, peatland condition) with public data sharing, following the Broads' example of published environmental targets.
- Promote heritage tourism sustainably: Leverage the success of the Shannon Masterplan to develop Lough Neagh's navigation, cultural trails, boating heritage, and artisan crafts in partnership with tourism agencies, ensuring community benefit.
- Build Sustainable Livelihood Models: Use ecotourism, artisan products, and carbon credit pilots as in Saloum and Burren. Align with SDGs and the Green/Blue Economy funding streams.
- Seek funding & designation: Pursue UNESCO Cultural Heritage designation to unlock resources and conservation networks, raising awareness of Lough Neagh's unique cultural heritage.

By synthesising insights from leading models in the UK, Ireland, and internationally recognised landscapes, the Heritage Resilience Plan can evolve into a strategic, operational, and cultural instrument of regional renewal. The tools are within reach—what is required is the political will, legal framing, and stakeholder mobilisation.

BIBLIOGRAPHY AND REFERNECE SOURCES

Burren & Cliffs of Moher UNESCO Global Geopark. (2019). *Geopark Code of Practice for Sustainable Tourism*.

Council of Europe. (2000). *European Landscape Convention*. Florence: Council of Europe Treaty Series No. 176.

Department of Agriculture, Environment and Rural Affairs. (2022). *Water Framework Directive in Northern Ireland*.

Historic Environment Division. (2018). *Built Heritage Policy and Practice in Northern Ireland*.

Lake District National Park Authority. (2020). *Partnership Plan for the Lake District 2020–2025*.

Northern Ireland Environment Agency. (2021). *Environmental Legislation Overview*.

Ramsar Convention Secretariat. (2016). *The List of Wetlands of International Importance*. Gland, Switzerland.

UNESCO. (2021). *World Heritage Centre Case Studies: Saloum Delta and Hortobágy National Park*.

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*.

Harvard Reference List

Lough Neagh Partnership (n.d.) *Lough Neagh Partnership | Safeguarding Northern Ireland's Natural Heritage*. Available at: <https://www.loughneaghpartnership.org> (Accessed: 26 August 2025).

Broads Authority (2019) *Broads Biodiversity and Water Strategy and Action Plan 2019-2024: Final draft for adoption*. Available at: <https://www.broads-authority.gov.uk> (Accessed: 26 August 2025).

Broads Authority (n.d.) *Legislation*. Available at: <https://www.broads-authority.gov.uk> (Accessed: 26 August 2025).

Failte Ireland (n.d.) *New Shannon Tourism Masterplan To Transform Tourism in Ireland's Hidden Heartlands | Irish Tourism News*. Available at: <https://www.failteireland.ie> (Accessed: 26 August 2025).

River Shannon Group (n.d.) *Who we are | River Shannon Group*. Available at: <https://www.rivershannongroup.ie> (Accessed: 26 August 2025).

World Wildlife Fund (n.d.) *Shannon river basin (Ireland)*. Available at: <https://awsassets.panda.org> (Accessed: 26 August 2025).

ResearchGate (n.d.) *Organisation of the Lake Vättern Society of Water Conservation (LVSWC)*. Available at: <https://www.researchgate.net> (Accessed: 26 August 2025).

SLU Externwebben (n.d.) *Lake Vättern – a role model for future fisheries management*. Available at: <https://www.slu.se> (Accessed: 26 August 2025).

Biosfärprogrammet (n.d.) *Management of nature reserves and local outdoor recreation*. Available at: <https://www.biosfarprogrammet.se> (Accessed: 26 August 2025).

Fingal County Council (n.d.) *Public Consultation on Waterways Ireland's Heritage and Biodiversity Plan 2030*. Available at: <https://www.fingal.ie> (Accessed: 26 August 2025).

APPENDICES

APPENDIX A: ABBREVIATED COMPARATIVE TABLE OF GOVERNANCE MODELS

Site	Authority Type	Planning Power	Community Role	Designation(s)
Lough Neagh	Voluntary (LNP)	None	Moderate (project-based)	SAC, SPA, Ramsar
Broads Authority (UK)	Statutory (Broads Act 1988)	Yes – Planning & Navigation	Advisory boards, volunteers, outreach	National Park equivalent, Ramsar
Shannon River (Ireland)	Multi-agency, non-statutory	Limited and fragmented	Consultative under Tourism Masterplan	SAC, major river corridor
Lake District (UK)	Local Authority-led Partnership	Yes	Partnership Board, stakeholder engagement	UNESCO World Heritage
Burren Geopark (Ireland)	Local Gov + NGO (Geopark Office)	Limited	Burren Code, Geopark Forum	UNESCO Global Geopark
Saloum Delta (Senegal)	Co-management (state + community)	Shared	Fisher cooperatives, restoration groups	Ramsar Site, UNESCO Cultural Landscape
Hortobágy (Hungary)	Statutory under national law	Yes	Folklore-based governance	UNESCO World Heritage
Lake Vättern (Sweden)	Hybrid (statutory + voluntary)	Moderate	Stakeholder committees, citizen monitors	UNESCO Biosphere Reserve
Mar Menor Lagoon	Statutory under national law	Limited	Stakeholder committees, citizen monitors	Rights of Nature Site
Rathlin	Interdepartmental and stakeholder body	Moderate	Departments, stakeholders,	Interdepartmental type body with senior civil servants

APPENDIX B

United Kingdom Case Studies

Lake District National Park (England) – UNESCO World Heritage Site

The Lake District exemplifies the integration of natural beauty, cultural landscape, and vernacular heritage within a coherent planning framework. Its designation as a World Heritage Site in 2017 was based on a ‘combined’ criterion that linked its pastoral farming traditions, settlement patterns, and scenic values.

Key benchmarking lessons:

- The Partnership Plan for the Lake District (LDNP) operates on a multi-stakeholder governance model involving local authorities, landowners, farmers, and NGOs. This mirrors the proposed Lough Neagh Partnership Board in structure and intent.
- Heritage resilience is integrated into climate adaptation strategies, including peatland rewetting and sustainable tourism infrastructure—actions paralleled in Lough Neagh's catchment proposals.
- The Lake District employs Character Area assessments to define place-specific planning responses, a practice that could strengthen the proposed Lough Neagh Heritage Impact Zone (LNHIZ).

Fermanagh Lakelands (Northern Ireland)

Though not formally designated under international charters, the Fermanagh Lakelands demonstrate an effective regional model for cross-sectoral conservation. The Lough Erne Landscape Partnership (LELP) brings together built heritage, wetland ecology, and local narratives.

Benchmarking insights:

- Strong integration of National Lottery funding, farming incentives, and landscape tourism, which validates the multi-source financing model suggested for Lough Neagh.
- Use of community memory and oral heritage in trail design and interpretation, aligning with the Living Heritage Register proposal.
- Successful delivery of wetland and archaeological co-management projects provides a local precedent for scalable practice.

Rathlin Island

The Regional Planning Branch is responsible for implementing and monitoring the Rathlin Island Policy and Action Plan. The Branch established a Ministerial Forum chaired by the DfI Minister. It includes island representatives and senior officials from relevant Government Departments and Local Bodies. Its purpose is to monitor progress against the Action Plan and to review and refresh the Plan to reflect changing

circumstances. The Revised Rathlin Island Action Plan will be underpinned by an Implementation Plan.

Benchmarking insights

- Local successful model
- No need for new legislation
- Integrated Heritage approach linked to wider socio-economic issues

Republic of Ireland Case Studies

The Burren and Cliffs of Moher Geopark

Designated as a UNESCO Global Geopark, the Burren presents a landscape where heritage conservation, biodiversity, and sustainable rural development converge. With its karst ecosystem, archaeological field systems, and vernacular settlements, the Burren is perhaps Ireland's most sophisticated example of integrated landscape stewardship.

Relevant features:

- The Burren Code, a community-driven conservation charter, anticipates the Lough Neagh Community Heritage Stewardship Charter in ethos and structure.
- Monitoring tools include sustainability indicators and cultural impact assessments, reinforcing the logic of the proposed Heritage Resilience Scorecard.
- Strong emphasis on place-based education and intergenerational engagement—an area of potential expansion in Lough Neagh's outreach strategies.

International Case Studies

Saloum Delta (Senegal) – World Heritage Cultural Landscape and Ramsar Site

The Saloum Delta exemplifies how integrated water-landscape systems can be managed for both cultural and biodiversity value. Designated as both a Ramsar site and UNESCO Cultural Landscape, its mangrove ecosystems and shellfish fishing traditions are conserved in tandem through participatory governance.

Comparative insights:

- Co-management between local fishing communities, heritage authorities, and wetland scientists supports the model proposed for Lough Neagh's Living Heritage Register and community-led restoration schemes.
- Ecosystem services are monetised through ecotourism and carbon-credit schemes, suggesting possibilities for nature-based economic diversification around Lough Neagh.

Hortobágy National Park (Hungary) – UNESCO World Heritage Site

A cultural landscape shaped by centuries of pastoralism and water management, Hortobágy is exemplary for its landscape-scale governance. Its World Heritage inscription is based on continued traditional land use, biodiversity richness, and adaptive wetland management.

Applicability to Lough Neagh:

- The integration of intangible heritage (e.g. shepherding, folklore) into environmental policy is directly comparable to the objectives of the proposed Heritage Impact Zone and Scorecard.
- Institutional design includes a statutory park authority supported by multi-source European funding—validating the case for a Statutory Lough Neagh Authority (or its feasibility study phase)

Mar Menor Lagoon (Spain) Rights of Nature Site

The Mar Menor is Spain's largest saltwater lagoon, known for its warm shallow waters, unique ecology, and severe environmental decline caused by pollution. It sits in Murcia, separated from the Mediterranean by the La Manga sandbar and is now the focus of one of Spain's biggest restoration efforts.

Applicability to Lough Neagh

- Can learn from innovative Rights of Nature Legal Approach
- Can examine rewilding approach

Section 1

Heritage Resilience Plan for Lough Neagh:

Part 1c

Risk and Vulnerability Analysis of Lough Neagh

INTRODUCTION

Lough Neagh is more than just a lake - it is a vast living system, a cultural landmark, and a critical environmental and heritage asset at the heart of Northern Ireland. As the largest freshwater lake in the British Isles and Ireland, it supports a unique web of natural habitats, rare species, and cultural practices that have evolved over millennia. But in recent decades, this iconic landscape has entered a period of unprecedented stress.

From the collapse of the eel fishery to the toxic algal blooms that choked the lake in the summers of 2023 and 2024, the signs of crisis are now unavoidable. Once vibrant wet grasslands have been lost to scrub encroachment; peatlands have dried and burned; heritage sites are vulnerable to development pressures; and traditional communities report growing disconnection from the lough's edge and its meaning. Perhaps most alarming of all is that these losses are not isolated but are interconnected, cumulative, and intensifying. This analysis paper explores the risks and vulnerabilities to Lough Neagh's heritage through an integrated lens. It demonstrates that the lough is undergoing a systemic transformation ecologically, socially, and politically, and that its long-term resilience depends on a holistic understanding of these pressures. Drawing on recent reports, scientific literature, community perspectives, and historic context, the analysis provides a critical assessment of:

- Physical and environmental threats, including eutrophication, habitat fragmentation, species decline, climate change, and invasive species.
- Social and cultural vulnerabilities, such as the erosion of traditional knowledge, shifting land use, and community disengagement.
- Changes over the past 20 years, particularly around land management, biodiversity loss, and governance gaps.
- The heritage and natural features most at risk, including wetlands, peatlands, migratory bird populations, fisheries, and archaeological landscapes.
- Emerging threats like climate instability, policy fragmentation, and the growing perception of the lough as damaged or lost; and
- Strategic actions and recommendations for mitigating these risks, rebuilding community resilience, and ensuring that Lough Neagh remains a place of value, memory, and renewal for future generations.

The blue-green algae crisis may have triggered national headlines, but it also offers an opportunity: a moment to reconsider how we view and care for this extraordinary body of water. As this paper will show, the challenges are serious, but so too is the potential for collective action, community reconnection, and long-term recovery.

In addressing Lough Neagh's future, we are not simply talking about an environmental clean-up. We are talking about the revival of a shared landscape, the reweaving of cultural memory, and the creation of a legacy of stewardship that transcends generations.

THE NEED FOR A HERITAGE RISK AND VULNERABILITY ANALYSIS

Lough Neagh, the largest freshwater lake in the British Isles, is a landscape of exceptional environmental, cultural, archaeological, and historical importance. Its unique heritage encompasses not only physical artefacts and ancient monuments but also traditions, stories, and community identities that have evolved over millennia. However, this heritage faces growing threats from climate change, land use pressures, pollution, neglect, and unsustainable development. As part of the heritage resilience planning process and to ensure informed decision-making and sustainable stewardship, Lough Neagh Partnership has undertaken a Risk and Vulnerability Analysis (RVA) focused specifically on the Lough's heritage assets. This process aims to identify vulnerabilities, prioritise interventions, and enhance resilience across the landscape.

A Risk and Vulnerability Analysis (RVA) is a structured, evidence-based assessment used to identify potential hazards, the exposure of assets to those hazards, and the degree to which these assets are susceptible or resilient. In the context of heritage, an RVA evaluates how tangible and intangible assets may be harmed by external or internal threats — both acute (e.g., flooding) and chronic (e.g., neglect, erosion of community traditions). The primary purpose of this RVA is to support:

- 1) Evidence-based decision-making for conservation and funding priorities.
- 2) Early intervention strategies to mitigate long-term damage.
- 3) Community resilience and participation in safeguarding heritage.
- 4) Integration of heritage concerns into broader environmental and development planning.

This approach will allow stakeholders including policymakers, conservationists, local communities, and landowners to develop adaptive strategies to manage and protect heritage in the face of uncertainty.

For the purposes of this report, heritage refers to both tangible assets (such as natural habitats, historic buildings, landscapes, archaeological sites, and traditional industries like eel fishing) and intangible assets (oral traditions, language, place names, folklore, and community memory). Vulnerability describes the degree to which a heritage asset is exposed and susceptible to harm. Resilience refers to the ability of heritage systems and communities to absorb disturbance, adapt, and continue functioning.

The Risk and Vulnerability Analysis is an essential tool for the futureproofing of Lough Neagh's heritage. With increasing pressures on both the cultural and natural landscape, Lough Neagh Partnership has a unique opportunity to lead the way in integrated, evidence-based, and participatory heritage management. By identifying

vulnerabilities and building resilience, the Partnership can help ensure that Lough Neagh's rich heritage continues to inspire, educate, and sustain its communities for generations to come.

SUMMARY BACKGROUND TO LOUGH NEAGH

Lough Neagh is not only the largest lake in Northern Ireland, but also the largest freshwater lake in the British Isles, covering approximately 392 km² and draining around 40% of Northern Ireland's land area (Figure 1). It sits at the heart of the country, spanning five counties (Antrim, Armagh, Derry/Londonderry, Down, and Tyrone) and functions as both a hydrological hub and a cultural heartland. In total, the Lough Neagh catchment spans over 4836 km² or 34% of Northern Ireland, and includes a mosaic of rivers, wetlands, bogs, and agricultural lands. Six major and two minor rivers drain the catchment and include Moyola 308 km², Ballinderry 434 km², Blackwater 1390 km², Upper Bann 615 km², Glenavy 45 km², Crumlin 65 km², Six Mile Water 301 km² and the Maine 704 km² (Figures 2). The scale of this catchment means that even modest changes in land use, farming practices, or urban development within the region can have major downstream impacts on the lough's water quality and ecological balance. Its ecological and geographical features are intimately tied to the identity and well-being of the surrounding landscape and communities.

The Lough and its floodplain are protected under multiple designations (ASSI, SPA and Ramsar) for their important wetlands and waterbirds. The shallow, eutrophic waters host internationally important populations of swans (Whooper and Bewick's), ducks (e.g. Pochard, Tufted, Scaup) and other wildfowl, as well as rare fish (Pollan) and plants (e.g. Irish Lady's-tresses orchid). Numerous habitats occur around the lough: open water with aquatic vegetation, reedbeds, marsh and fen, wet grassland, swamp and carr woodland. Its islands form a National Nature Reserve with tens of thousands of nesting waterbirds.

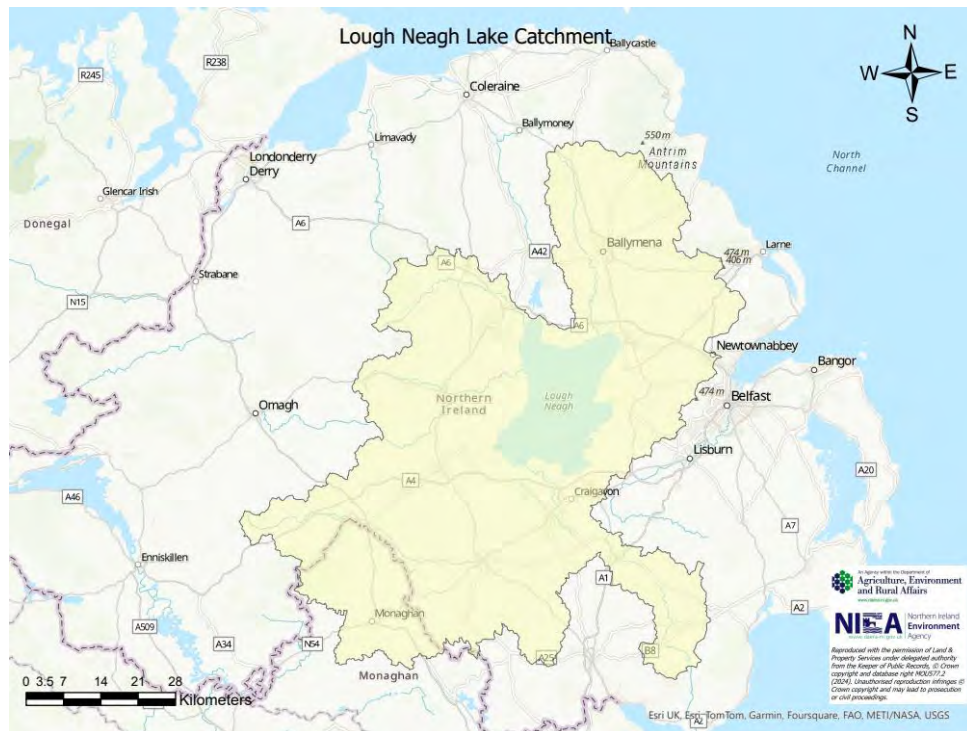


Figure 1. Map of Northern Ireland showing Lough Neagh and the extent of its catchment. (Source: NIEA: [Lough Neagh Lake Catchment Map.PDF](#))

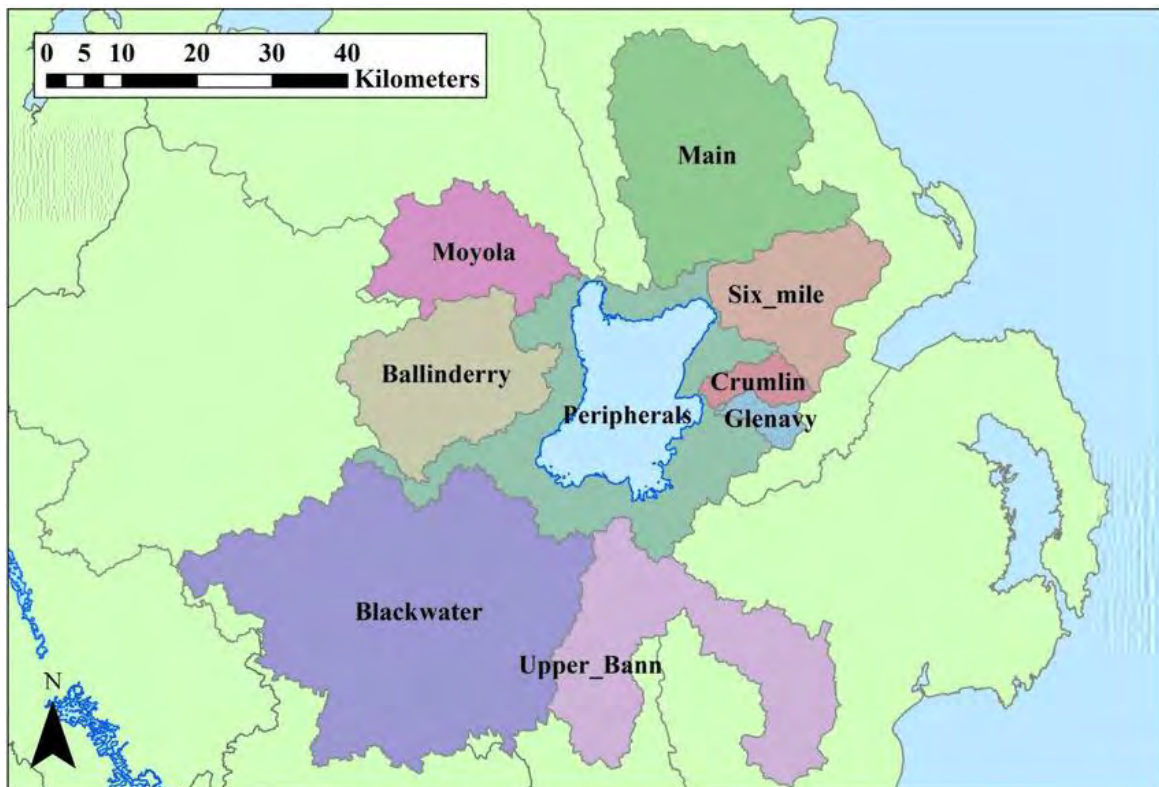


Figure 2: Lough Neagh River Catchments (data sourced from LPS and CSO)

Beyond its ecological value, the lough and its surrounding communities safeguard a wide range of intangible cultural heritage elements that have been transmitted across generations. These traditions embody knowledge systems, skills, practices, and expressions that are integrally linked to the lake, shaping both community identity and regional cultural continuity.

One of the most notable elements of intangible heritage associated with Lough Neagh is the traditional eel fishery, which has been documented for centuries. The specialised techniques used in the capture, handling, and distribution of Lough Neagh eels represent a living knowledge system rooted in observation of natural cycles and seasonal rhythms. Fishermen employ specific tools, such as long-lines, reflecting an accumulated expertise adapted to the environmental conditions of the water body. These practices are transmitted orally and experientially within families and communities, maintaining continuity while adapting to changing circumstances. The Lough Neagh eel fishery exemplifies the interdependence between cultural practice and ecological stewardship.

Craft traditions linked to the lough further illustrate the region's intangible heritage. The making and maintenance of cot boats is a distinctive local skill that combines woodworking knowledge, hydrological awareness, and cultural symbolism. While the number of practitioners has diminished, heritage organisations and community groups have undertaken efforts to safeguard these practices, recognising their cultural and historical significance. Similarly, net-making and associated fishing crafts, once widespread, remain emblematic of community resilience and self-sufficiency.

Oral traditions and expressions surrounding the lough also form an essential dimension of its heritage. Local folklore attributes the formation of the lough to the legendary giant Finn McCool, embedding the lough within the wider mythological corpus of Ireland. Stories of supernatural beings, fairy mounds, and enchanted islands persist in community memory, offering both entertainment and moral instruction. These oral narratives are complemented by a rich repertoire of songs, ballads, and recitations associated with fishing, migration, and rural life. Performance of these traditions continues in both formal and informal contexts, reinforcing collective identity and intergenerational bonds.

Seasonal and ritual practices constitute another facet of Lough Neagh's intangible heritage. Pilgrimages to holy wells along its shores, May Day celebrations, and fairs historically connected to fishing and agricultural cycles have provided opportunities for social cohesion and the reaffirmation of cultural values. While some practices have declined, others have been revitalised through community-led initiatives and local festivals.

The intangible cultural heritage of Lough Neagh reflects a profound and enduring relationship between people and their natural environment. It is characterised by its adaptability, its transmission through lived experience, and its role in sustaining community identity. Safeguarding these elements requires recognition of their social value, support for knowledge bearers, and the promotion of intergenerational transmission. Lough Neagh thus represents not only a geographical landmark but also

a living cultural landscape in which intangible heritage is continuously created, practised, and renewed, ensuring its vitality for future generations.

CHANGES IN THE LAST 20 YEARS

Lough Neagh is facing a confluence of environmental pressures that have pushed its ecosystems toward a crisis point. These physical threats, emerging from both anthropogenic pressures and natural feedback systems, have accelerated in recent decades. This section explores the primary environmental threats, based on current data and scientific consensus, to determine their implications for heritage vulnerability.

Over the past two decades Lough Neagh's water quality and biodiversity have deteriorated sharply, raising alarms across government and the community. Only 27% of rivers and no lakes in the Neagh–Bann basin were in “Good Status” under the EU Water Framework Directive by 2021 (Figure 3), largely due to phosphorus pollution from agriculture. In summer 2023 the lough experienced an unprecedented toxic cyanobacterial (“blue green”) algal bloom, affecting recreation and fisheries and illustrating the system's vulnerability to multiple stressors. The harmful algal blooms (HABs) experienced in Lough Neagh in 2023 and 2024 represent a significant and escalating threat to the lake's natural and cultural heritage.

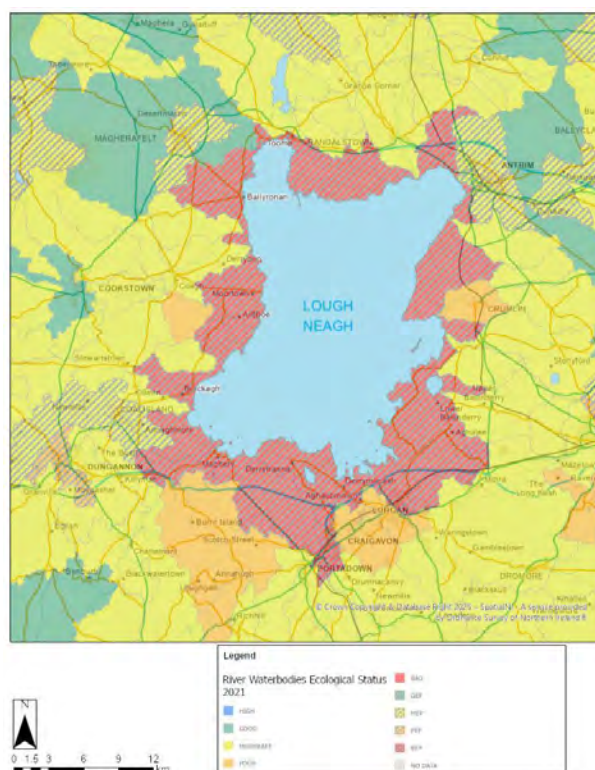


Figure 3: River Waterbodies Ecological Status 2021 (Source: [NIEA Catchment Data Map Viewer](#))

As the UK and Ireland's largest freshwater lake, Lough Neagh holds ecological, historical, and recreational importance. The exceptional scale and duration of these blooms, driven by excessive phosphorus loading, rising baseline temperatures, extreme weather, and legacy pollution from decades of agricultural and urban runoff, highlight systemic environmental degradation. These conditions have rendered the lake's ecosystems increasingly fragile. The persistence of phosphorus from river catchments that drain over one-third of Northern Ireland has overwhelmed the lake's natural resilience. The result is widespread ecological disruption, including damage to fisheries, reduced water quality, diminished recreational use, and serious public health concerns. This degradation undermines the cultural, environmental, and economic value of the lake, making its heritage more vulnerable than ever. Despite well-documented knowledge of phosphorus sources and ongoing regulatory efforts, little change has occurred in the past two decades regarding pollution contributions. Without effective, sector-specific reduction strategies, particularly in agriculture and wastewater management, Lough Neagh's heritage faces continued deterioration.

Habitat fragmentation and succession, partly as a result of lowered lake levels to support hydrological regulation, have exposed shoreline margins and initiated vegetation succession. Former wet grasslands that have historically been important for breeding waders, have transitioned into scrub and, increasingly, wet woodland. This has blocked historical views of the lough, altered habitat typology, and made some cultural landscapes unrecognisable. At the same time, the decline of wet meadow management and pasture rotation practices has diminished floral diversity. Some habitats, such as wet fens and carr, have simply disappeared under new

development or intensified agriculture. The cumulative effect is a substantial loss of biodiversity-rich transitional habitat, especially those wet grasslands crucial for breeding waders.

Table 1 and Figure 4 illustrates the overall lough-wide habitat composition, along with the percentage change between 2007 and 2021 timeframes. Woodland is the most abundant habitat (775 ha), followed by wet grassland (563 ha), farmland (504 ha), developed land (114 ha), marginal habitats (98 ha), scrub/hedgerow (93 ha), waterbodies (88 ha) and rank grassland (49 ha). Scrub/hedgerow showed the highest proportional increase (35%), followed by woodland (8%), developed land (6%), farmland (0%). Decreases were highest in rank grassland (-35%), followed by waterbodies (-20%), wet grassland (-5%), and marginal habitats (-4%).

Table 1: Combinations of habitat change to ecological process grouping.

Habitat	2007 Area	2021 Area	% Change
Developed	108	114	6.02
Farmland	504	504	0.03
Marginal	102	98	-3.74
Rank grassland	75	49	-34.59
Scrub/Hedgerow	69	93	35.42
Waterbodies	113	88	-21.92
Wet grassland	594	563	-5.32
Woodland	719	775	7.68

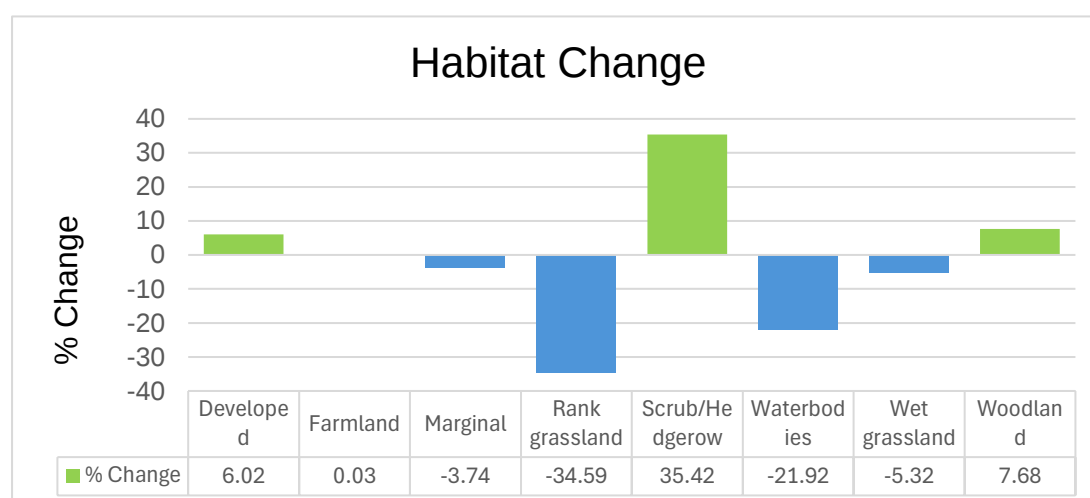


Figure 4: Proportional change in area between 2007 and 2021 time periods.

The driving forces behind these changes can be characterised with one of seven generalised descriptive ecological change groupings which are summarised in Figure 5. “Succession” (i.e. increasing vegetation density) was the strongest driving factor of habitat change (128 ha), followed by “wetland creation” (111 ha), “intensification” (75 ha), “deforestation” (31 ha), “development” (20 ha) and “abandonment” (18 ha).

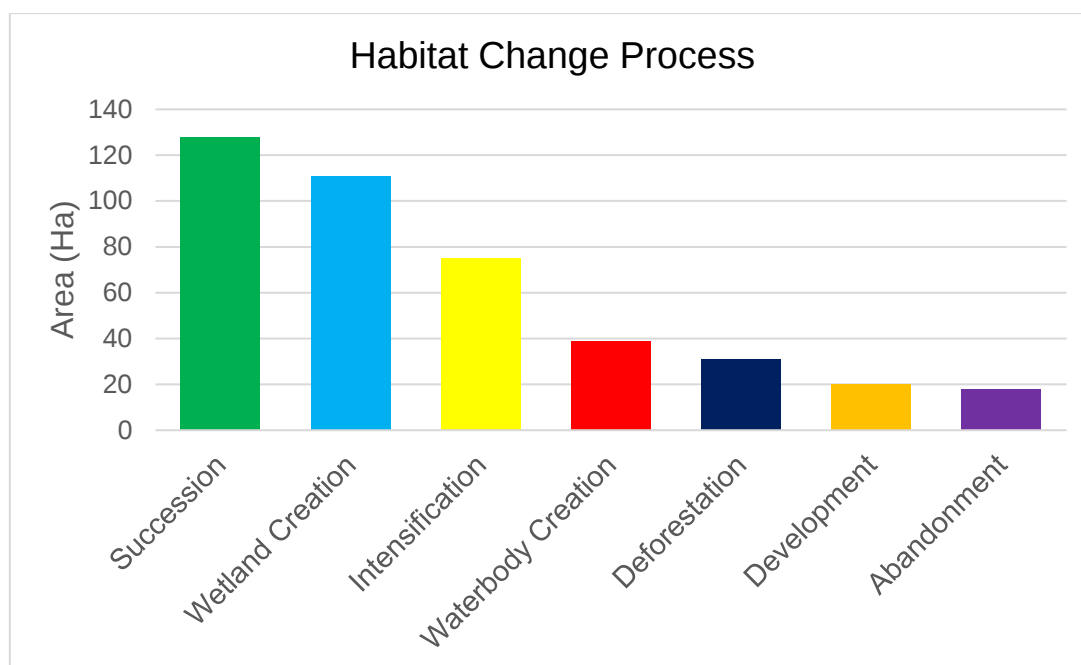


Figure 5: Total area for each ecological change category across the Lough shore.

Multiple taxa have also suffered marked population losses over the past 20-years:

- Curlew: NI-wide declines of 80% since the 1980s; now functionally extinct around the lough.
- European eel: The yellow (brown) eel fishery suspended in 2025; the silver eel fishery operated in 2024 and 2025.
- Pollan: There are concerns about pollan recruitment and potential impacts of zebra mussels on spawning areas.
- Invertebrates: Anecdotal reports and ecological indicators suggest major reductions in aquatic insect biomass (e.g., midges, damselflies).
- Birds: Swans, ducks, terns all experiencing reduced breeding success due to algal scum, predation, and food scarcity.

These declines have implications not just for biodiversity but for cultural identity, traditional livelihoods, and ecosystem services.

Land around the lough has undergone noticeable transition. Agricultural consolidation, rising land values, and inheritance challenges have led many traditional landowners to sell. Brexit-era subsidy changes and shifting environmental rules have increased uncertainty.

As the Figure 6 below summarises, Lough Neagh's protected sites, wetlands and species are now threatened by a convergence of pressures: nutrient enrichment and eutrophication, invasive species (notably zebra mussels), climate-driven warm/wet extremes, land-use change and development, and loss of traditional management. These pressures affect not only the natural environment but also built and cultural heritage around the lough, and the livelihoods of local communities (fishermen, farmers, tourism operators).

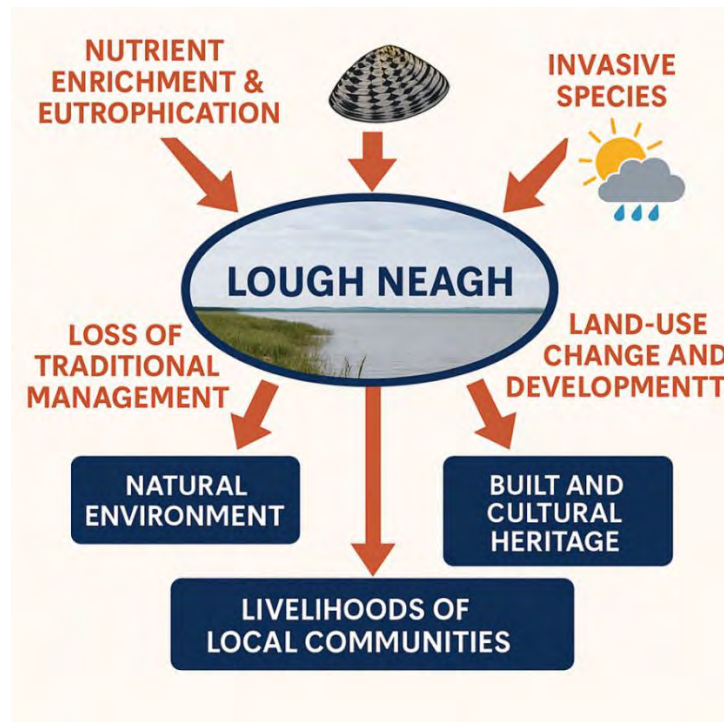


Figure 6: Lough Neagh's protected sites, wetlands and species are now threatened by a convergence of pressures: nutrient enrichment and eutrophication, invasive species (notably zebra mussels), climate-driven warm/wet extremes, land-use change and development, and loss of traditional management.

PHYSICAL AND ENVIRONMENTAL THREATS AND ASSETS AT GREATEST RISK

Lough Neagh is a complex socio-ecological system where cultural, environmental, and economic values are intricately linked. The most acute risks now converge on particular assets that represent not only ecological uniqueness but also cultural continuity and economic value. This section identifies and critically evaluates the heritage assets most at risk, highlighting the interacting pressures that threaten their viability.

The main threats and risks to the ecosystem of the Lough are in many ways very obvious, like those listed here by NIEA and it is worth examining these in a bit more detail if we wish to eventually find ways to reduce manage or eradicate these threats via a Heritage Resilience Plan.

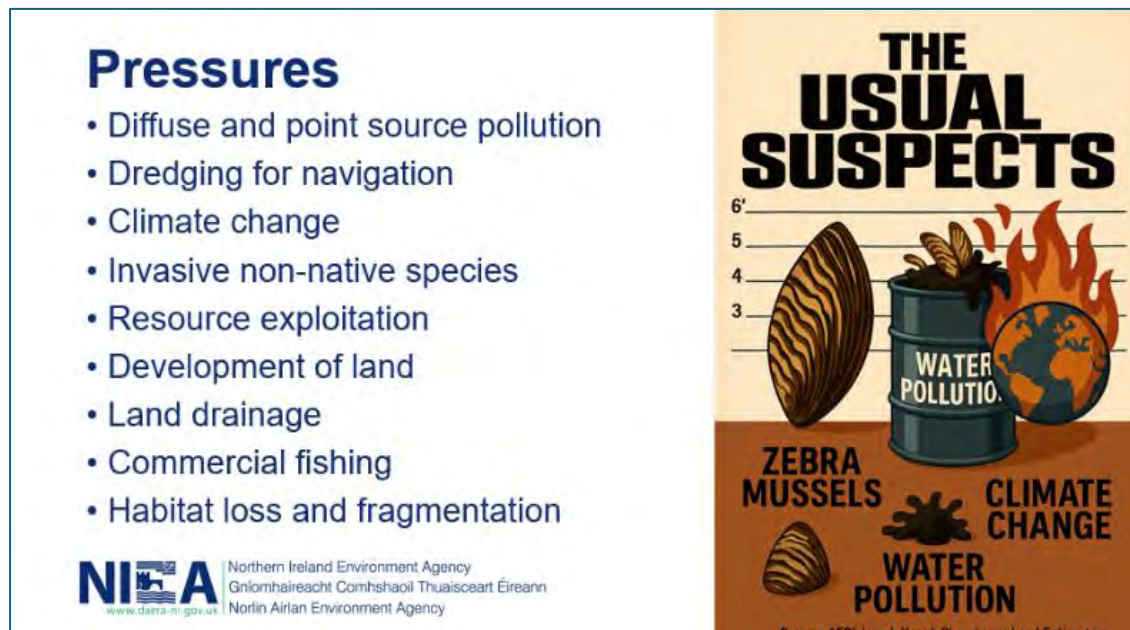


Fig 7 Threats to Lough Neagh Ecosystem NIEA NED Oct 25

Water Quality and Eutrophication

Nutrient pollution is the single largest current risk to Lough Neagh. Over the past 20 years, intensive livestock farming (covering ~70% of the basin) and imperfect sewage treatment have chronically loaded the lake with phosphorus and nitrogen. Only 27% of rivers in the basin met Good Status under the Water Framework Directive by 2021, and no lakes did. DAERA's 2024 Lough Neagh Report explicitly points to agriculture (cattle, poultry slurry), sewage works and septic tanks as nutrient sources driving Lough Neagh's eutrophication. These excess nutrients fuel explosive cyanobacterial blooms in warm weather.

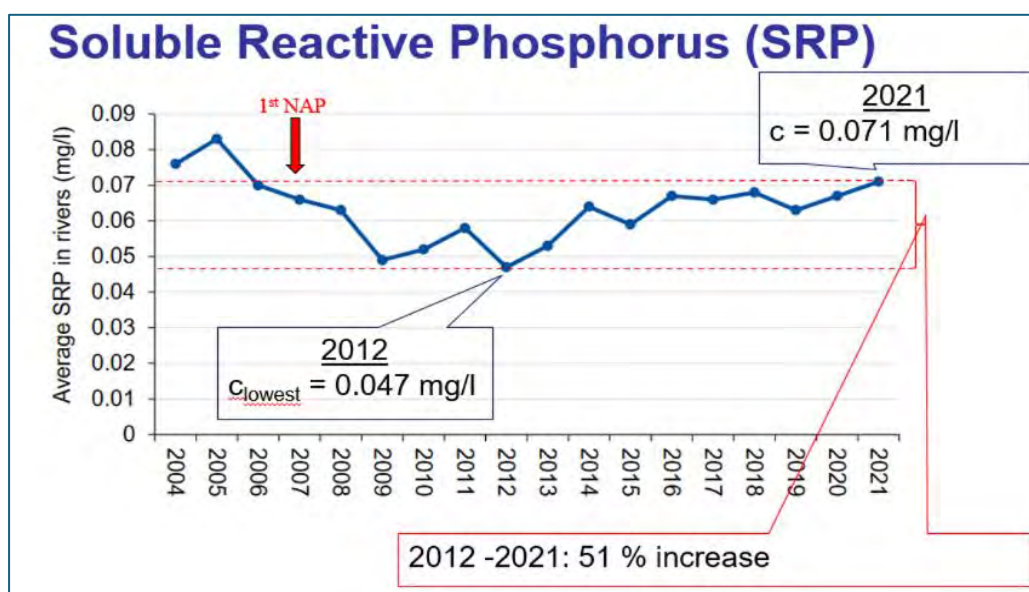


Figure 8: Phosphate increase in Lough Neagh (NIEA WMU 2023)

The summer of 2023 was illustrative: a record algal bloom covered much of the lake. Satellite imagery confirmed vast green swirls (Figure 7), and local water intakes and recreation sites were periodically closed. Cyanobacteria are toxic to wildlife and domestic animals, and degrade water oxygen levels, causing fish kills. Importantly, cyanobacteria (blue-green algae) compete poorly with aquatic plants, blocking sunlight and altering foodwebs. This eutrophication has profound knock-on impacts: submerged vegetation, altering habitat, and water clarity changes. It should be noted that Lough Neagh is already “hypereutrophic” (extremely nutrient-rich).



Figure 9: Sentinel-5 satellite image (Sept 4, 2023) showing algal blooms (green swirls) on Lough Neagh. Recent research attributes such events to excessive nutrients combined with a warm, wet summer.

Projected trends are for worsening water quality unless nutrient inputs are drastically cut. Climate change compounds the problem: hotter summers increase algal growth rates, and heavier rainfall events flush more fertilizers and slurry from fields into the lough. Research from Queen’s University Belfast notes that “the wettest July on

Where is the Phosphorus coming from?

Sector	P lost to waterways (tonnes)	% of total
Agriculture	940t	62%
Wastewater	360t	24%
Septic tanks	184t	12%

RePhoKUs project report Oct 2020

7,300 t of P accumulated in NI soils in 2017, which equates to a surplus of 8.5 kg ha⁻¹ compared to a P surplus of 6.2 kg ha⁻¹ for the whole of the UK

N needs to be addressed also as N/P ratio important in which BG sp. dominate

record” caused stored farm manure to wash into rivers. With over 47% of NI soils now phosphorus-saturated, the lake remains highly vulnerable to heavy rain and poor farm practice. The sources of nutrient overload in Lough Neagh is also relevant to terms of trying to find the long-term solutions. Whilst there is much debate about the exact amount of nutrients coming from the different sectors within Northern Ireland there is general scientific agreement that the main source is from farming sector, the second source from NI Water sewerage treatment plants and the third from industry and septic tanks.

Figure 10: Phosphorus source breakdown (Rephokus Report 2020)

Invasive Species

Lough Neagh’s ecology has been further disrupted by invasive species. The zebra mussel (*Dreissena polymorpha*), recorded since 2005, now dominates much of the lakebed. While these bivalves filter particulates from the water, they paradoxically worsen the algal crisis by selectively removing benign algae and leaving behind harmful cyanobacteria. As a result, the lake becomes clearer but more toxic.

Invasive plants such as Himalayan balsam (*Impatiens glandulifera*) have overtaken riverbanks and wet woodland understories, altered habitat structure and reduced biodiversity. Potential new threats include the invasive signal crayfish, which has decimated native aquatic communities elsewhere in the UK and Ireland.

Climate Change and Hydrology

Climate change poses multi-faceted threats. Warming trends and extreme weather events have intensified Lough Neagh’s problems. As noted, the summer of 2023 combined an “exceptionally warm June” with unprecedented rainfall in July, creating perfect conditions for blooms. Scientists warn that continued warming will only increase bloom frequency and severity. The lake’s shallow depth (<15 m) makes it especially responsive to temperature swings. Higher water temperatures also reduce dissolved oxygen, stressing fish and invertebrates.

Beyond heat, flooding is a critical vulnerability. In the winter of 2015–2016 Lough Neagh reached its highest levels since 1928, inundating 3,300 ha of land, hundreds of homes and transport links. These floods were attributed to extreme rainfall events linked to climate trends. Downstream, the Lower Bann regulation (hydroelectric weir) can limit natural outflow, so changes in winter precipitation patterns can more easily flood surrounding farmland and infrastructure. Conversely, drier summers can lower lake levels, exposing reedbeds and drying marginal wetlands, which degrades breeding habitats and can cause woodland dieback.

Adaptation plans acknowledge these hazards: recent NI climate plans highlight NI’s vulnerability to floods and droughts (though not specifically naming Neagh). In practice, the lough’s floodplain (wet grasslands and peatlands) may alternately flood or desiccate more often, making those habitats more precarious. Historic and archaeological sites near the shore are also at risk of water damage or erosion under altered hydrological regimes.

Habitat Loss and Land-Use Change

Over the past 20+ years much of Lough Neagh's peripheral wetlands have been lost or degraded. Surveys and NGO reports note that peatlands, wet grasslands and wet woodlands have continued to decline around the lough. Traditional meadow and bog habitats have been drained or burned for agriculture; peat extraction operations have removed habitat and carbon store. The 2023 Lough Neagh Partnership strategy notes that habitat loss "has accelerated, not lessened". This contradicts any recovery trends – indeed, the decline in farmland wildlife (43% drop in farmland bird indices since 1996) suggests intensive land use.

Wet woodlands along the Bann (e.g. Rea's Wood and Farris Bay) are SAC/NNR because they are among the best in the UK. These alluvial forests rely on periodic flooding. Any shift to permanent drainage or water scarcity will alter their composition (e.g. loss of alder and willow). Surrounding landscape changes – e.g. removal of hedges, afforestation with non-native conifers on drained peat – further fragment these habitats. In essence, Lough Neagh's buffer zones have been undermined by modern farming and development, increasing the lough's exposure to pollution and disturbance.

Wet grasslands, peatlands, fens, and wet woodlands comprise the ecological backbone of Lough Neagh's fringe ecosystems. These areas support a rich array of flora and fauna, including nationally and internationally important species. However, they are critically endangered by multiple intersecting threats:

- Hydrological destabilisation caused by lake-level regulation (historically lowered by 3.6 m) and exacerbated by climate-induced variability (e.g., flooding in 2015–16 and extreme droughts in 2018, 2022).
- Agricultural drainage and peat extraction, which have steadily reduced habitat extent.
- Vegetation succession resulting from management abandonment, leading to the encroachment of willow and alder scrub over wet meadows.

Most at-risk habitats include:

- Rea's Wood and Farris Bay (SAC designated alluvial woodlands), which depend on saturated soils and are sensitive to drainage and invasive species.
- Seasonally flooded wet grasslands, essential for breeding waders, now declining due to changes in land use and succession.
- Peatland remnants, such as those at Washing Bay, which are critical for carbon storage and rare bog species but are fragmented and drying.

Without immediate restoration (e.g., rewetting, scrub control, conservation grazing), these habitats may transition into ecologically impoverished systems, losing their species richness, landscape identity, and ecosystem services.

Declining Keystone Species and Their Trophic Networks

Certain species in and around Lough Neagh function as ecological keystones—vital to the structure and health of the wider system. Their decline signals systemic stress and heralds' broader biodiversity collapse. Numerous characteristic species of Lough Neagh are in alarming decline.

Fish: European eel population has been declining since the 1980s, and the current situation in Lough Neagh is reflective of this. The crisis in eel stocks has developed over a long period and is not a recent event. DAERA previously briefed LNFCs that based on previous glass eel inputs and the continued fishery there would be a drop in eel catches in early 2020s and that urgent steps would be required to meet the EU Eel regulation escapement target. This was based on AFBI modelling before the current Blue Green Algae situation. Catches of fish stocks vary across seasons and years which is reflective of a wild population, but catches remain similar to those recorded on the dealer's register previously. The physical extent of blue-green algae blooms in 2023 restricted access to the lough from some quays, and reports on water quality at the time may also have influenced consumer demand due to concerns about the safety of consuming fish from Lough Neagh, as reported by the LNFCs.

A Study by Kennedy & Vickers (Springer chapter on Lough Neagh fish) noted that salmon and eels have been “vulnerable to capture at natural and man-made obstacles for perhaps millennia” on the Lower Bann, highlighting that these barriers impede migration.

While not specific to Lough Neagh, the Forth Rivers Trust provides authoritative evidence that: Weirs, dams, and sluice gates are “one of the greatest problems facing migratory fish across the world”. This supports the ecological principle that even small barriers on Lough Neagh tributaries (e.g., Ballinderry, Blackwater, Moyola, Six Mile Water) may impede eel and fish passage.

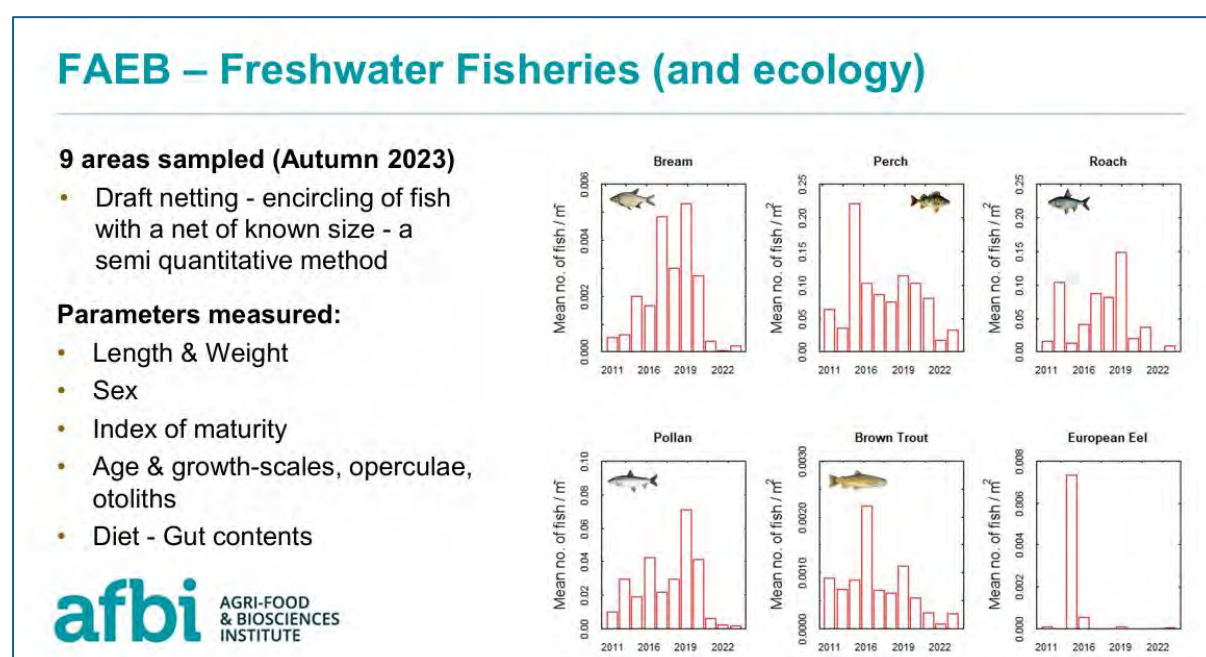


Fig 11: Fish Species population trends in Lough Neagh (AFBI 2023)

Birds: Lough Neagh is internationally important for wintering wildfowl, but numbers of most species have significantly decreased. Factors causing this decline include the loss of freshwater habitat, declining water quality and changes in migration patterns due to the climate crisis. Surveys indicate that wetland bird populations are under pressure from habitat loss (e.g. floodplain grazing marsh, fen, swamp and reedbed). Notably, the curlew (a breeding wader once heard regularly overhead while breeding on wet grassland around Lough Neagh) has declined towards extinction in the area. Country-wide, NI curlew numbers have plunged 80% since the 1980s. Conservation efforts (, targeted species recovery and habitat restoration) are only just beginning to halt this trend, and much more intervention is needed. While targeted species recovery works at Portmore Lough, Lough Beg and some Lough Neagh islands has sustained populations of breeding lapwing, redshank, snipe and common tern) these species continue to face nesting loss across the wider landscape and on islands that are disturbed. Eight bird features of the SPA designation are deemed to be in an unfavourable status.

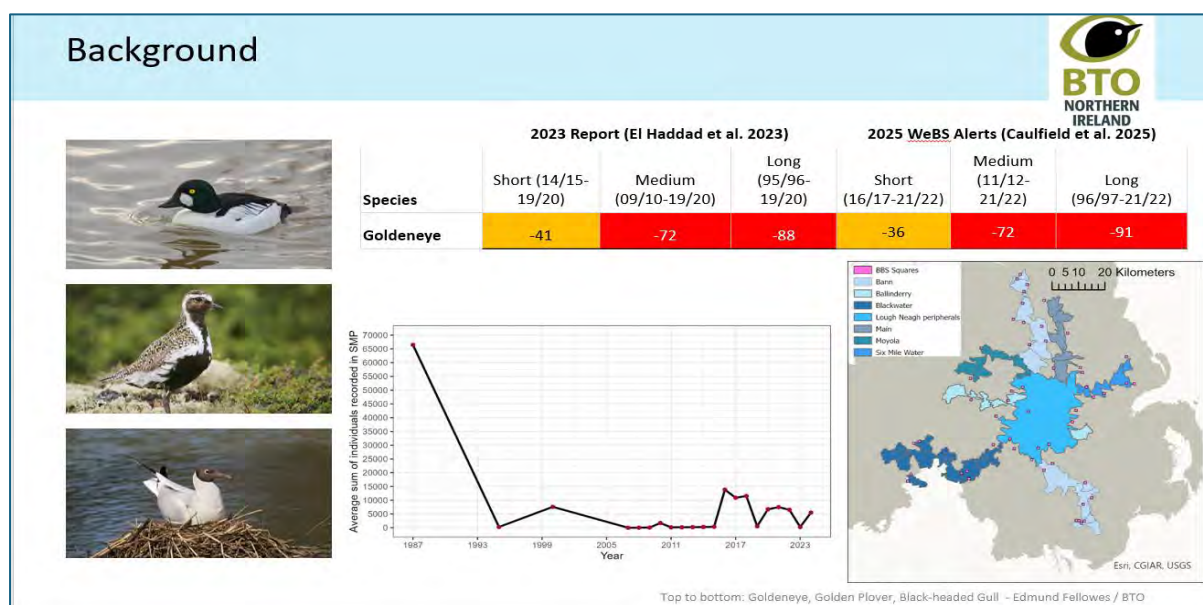


Fig 11 Decline in Gadwell on Lough Neagh

Lough Neagh ASSI and Lough Neagh and Lough Beg SPA Interest Features Summary Results

SPA Features	ASSI Features	Condition Assessment			
		2002-2007	2008-2013	2014-2019	2020-2025
Bewick's Swan	Bewick's Swan	Unfavourable	Unfavourable – no change	Unfavourable – no change	TBA
Common Tern	Common Tern	Unfavourable	Favourable – recovered	Favourable – maintained	TBA
	Coot	Favourable	Unfavourable – declining	Favourable – recovered	TBA
	Gadwall	Favourable	Favourable – maintained	Favourable – maintained	TBA
Golden Plover	Golden Plover	Favourable	Favourable – declining	Favourable – declining	TBA
Goldeneye	Goldeneye	Unfavourable	Unfavourable – declining	Unfavourable – declining	TBA
	Great Cormorant	Favourable	Favourable – maintained	Favourable – maintained	TBA
Great Crested Grebe Wintering	Great Crested Grebe Wintering	Favourable	Favourable – maintained	Favourable – maintained	TBA
Great Crested Grebe Passage	Great Crested Grebe Passage	Unfavourable	Favourable – recovered	Favourable – maintained	TBA
Great Crested Grebe Breeding	Great Crested Grebe Breeding	Favourable	Favourable – maintained	Not assessed	TBA
	Greylag Goose	Favourable	Favourable – maintained	Favourable – maintained	TBA
	Lapwing	Favourable	Favourable – maintained	Favourable – maintained	TBA
	Little Grebe	Favourable	Favourable – maintained	Favourable – maintained	TBA
	Mallard	Favourable	Unfavourable – declining	Favourable	TBA
	Mute Swan	Favourable	Unfavourable – declining	Unfavourable – declining	TBA
Pochard	Pochard	Unfavourable	Unfavourable – declining	Unfavourable – declining	TBA
Scaup	Scaup	Favourable	Favourable – maintained	Favourable – maintained	TBA
	Shelduck	Favourable	Favourable – maintained	Unfavourable – declining	TBA
	Shoveler	Unfavourable	Unfavourable – declining	Favourable – recovered	TBA
	Teal	Favourable	Unfavourable – declining	Favourable – recovered	TBA
Tufted Duck	Tufted Duck	Unfavourable	Unfavourable – declining	Unfavourable – declining	TBA
Whooper Swan	Whooper Swan	Favourable	Favourable – maintained	Favourable – maintained	TBA
	Wigeon	Favourable	Unfavourable – declining	Favourable – maintained	TBA
	Breeding bird assemblage	Favourable	Not assessed	Favourable – maintained	TBA
	Breeding wader assemblage	Unfavourable	Unfavourable – recovering	Unfavourable – no change	TBA
	Breeding waterbird assemblage	Favourable	Favourable	Favourable	TBA
Winter waterbird assemblage	Winter waterbird assemblage	Unfavourable	Unfavourable – declining	Unfavourable – declining	TBA



Department of
Agriculture, Environment
and Rural Affairs

An Roinn
Talmhaíochta, Comhshaoil
agus Gnóthaí Tuaithe

Department of
Fairmin, Environment
an' Kintra Matthers

Fig 12: Favourable status of Lough Neagh Interest Features

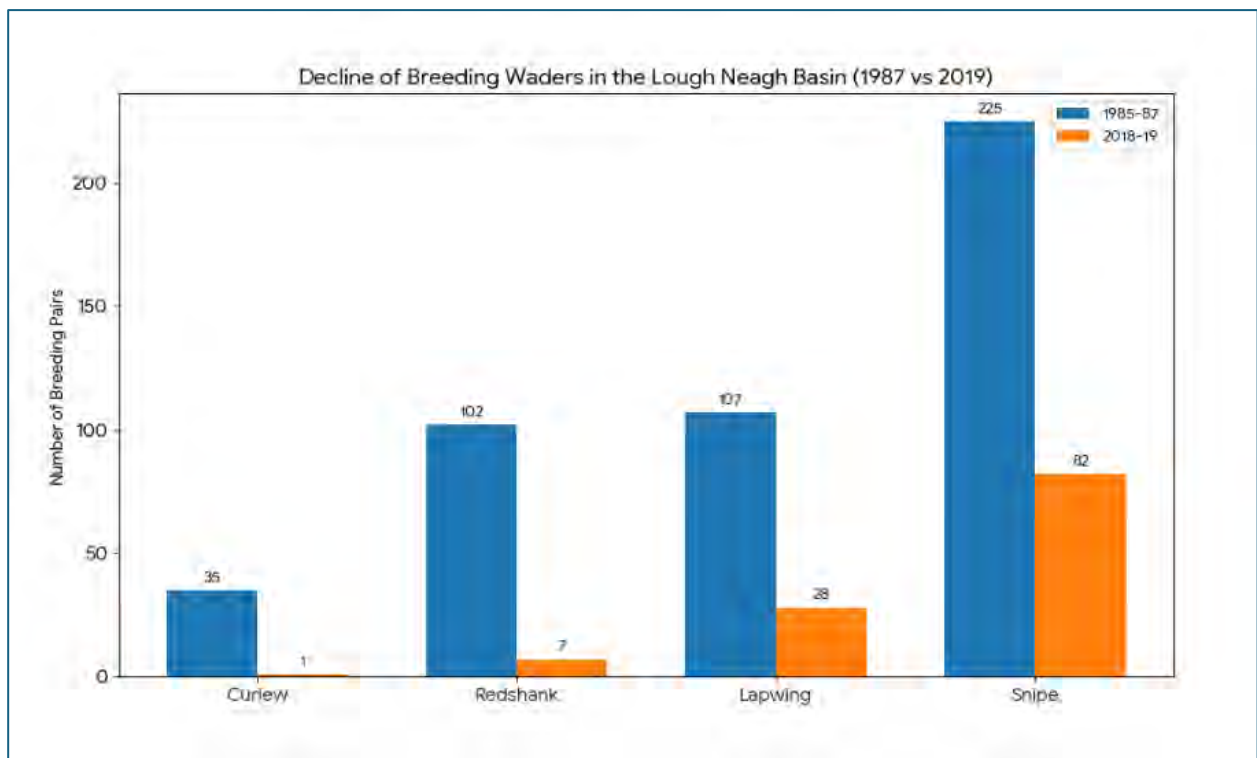


Fig 13: Decline in breeding waders on Lough Neagh BTO Research Report 731

Invertebrates: Many aquatic insect species (dragonflies, damselflies, freshwater snails) are indicators of clean water and varied habitat. Their decline is almost certainly significant, though data are sparse. The iconic midges (Lough Neagh flies) normally emerge in huge mating swarms each summer. They are “arguably the most critical part of lake ecology” – their larvae break down organic debris and they feed eels,

perch, pollan and diving ducks. Disruption of this midges' life cycle by pollution or climate changes would thus ripple through the entire food web.

The collapse of these species would not only represent an ecological loss but also a severance of cultural, economic, and recreational practices rooted in the lough's heritage. It would be important for the Heritage Resilience Plan to link with AFBI and relevant research committee DAERA SHIELD.

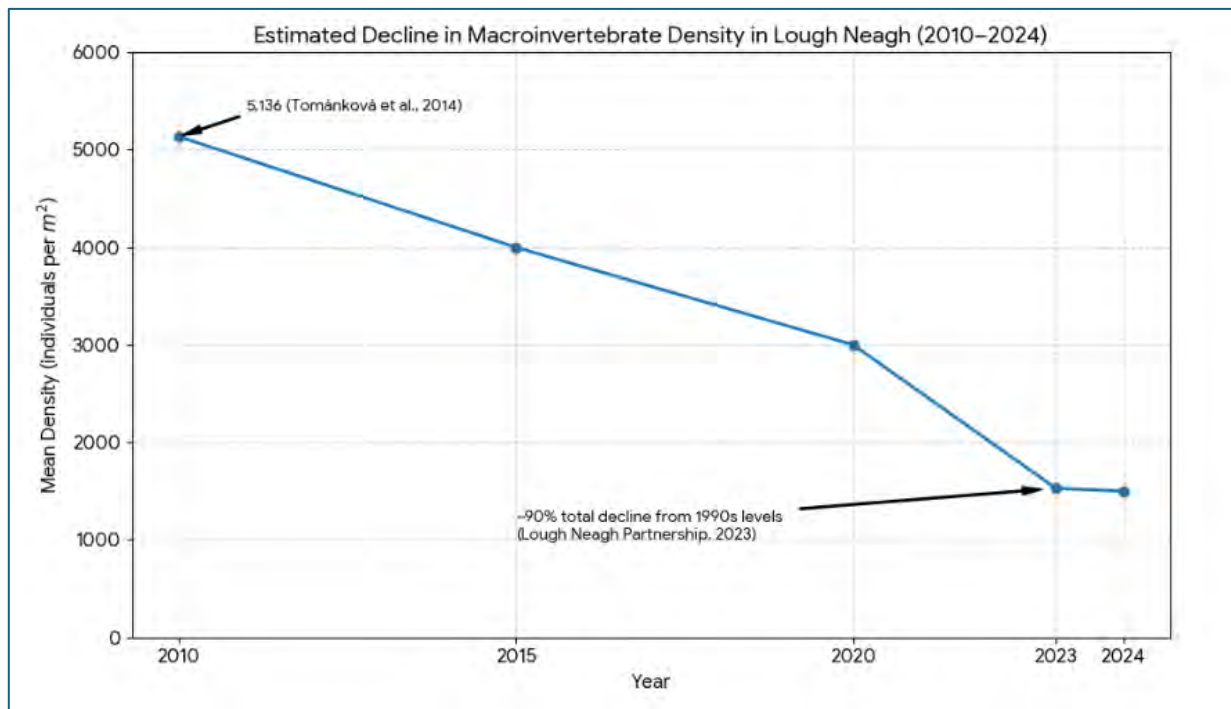


Fig 14: Decline in Macroinvertebrates. Source Reid et Al 2024

Other Threats

NIEA has indicated that recent studies have “demonstrated the presence of microplastics in Lough Neagh, adding to the multitude of pressures already impacting on its biodiversity. Out of the 38 lakes and reservoirs assessed globally, Lough Neagh ranked 11th highest in microplastic concentration in the water column. (Nava, et al 2023)”

The impact of sand extraction via dredging is still a possible pressure to be continually examined and it's important to note that the AFBI SHIELD project includes a bathymetry study which will commence early 2026

Human Disturbance can be a major source of disturbance to waterfowl, and any form of water use has the potential to disrupt bird behavior, particularly during breeding and roosting.

The accumulation of flotsam and jetsam can affect nesting sites for Black-headed Gulls and Common Terns, the predation by mink and large gulls can continue to have an effect on the numbers of Common Tern, Black-headed Gull, and Great Crested Grebe. Finally, the effects of Pathogenic Avian Influenza (HPAI) is a growing threat to breeding seabirds in summer and non-breeding waterbirds in autumn/winter.

Present and future Research

It is important to develop stronger communication ties and links to DAERA and AFTBI research projects that are happening. Attention must be given to existing projects emerging such as FAEB Lake Science FAEB, Lake Fisheries AEB Catchment Science, SHIELD Catchment and Lakes SHIELD Modelling SHIELD Analytical Chemistry together with another new SBRI's / MST projects / PhD's being worked up. Regular meetings between AFTBI the Lough Neagh Partnership are held, and these should be developed as the Heritage Resilience plan is further developed as new research emerges.

Socio-Economic and Community Impacts

Lough Neagh's environmental decline has direct socio-economic consequences. The fishing community centred on the Lough Neagh Fishermen's Co-op finds itself a "victim" of the lough's crisis. Historically, wild eel fishing has been a key livelihood and cultural touchstone; its collapse threatens generations of knowledge. As one seventh-generation fisherman lamented, farming and sewage are "the two main polluters of our lough" and politicians "need to get their act together" to save the eel stocks. Loss of the eel fishery (and decline of coarse fisheries) means loss of rural jobs and local income; some fishermen have already lost their livelihood during the 2024 suspension. Lough Neagh's eel fishery is not only an economic engine but a living cultural tradition. Practices like net-making, boat building, harvesting cycles, and folk beliefs around the fly emergence have survived for generations. However, these are now critically endangered. Beyond the eel, cultural knowledge about weather prediction, hydrological patterns, place names, and oral storytelling are being lost as older community members die, and environmental features change beyond recognition.

Tourism and recreation also suffer. Lough Neagh is a destination for birdwatching, boating, and lakeside festivals. Algal blooms and fish kills tarnish its reputation: restrictions on swimming and a foul odour during blooms deter visitors. A briefing paper notes that repeated blue-green outbreaks "make it inaccessible during blooms and, in the long-term, can tarnish the lough's reputation, making it unattractive to tourists." (NI Assembly Research). The economic impact extends to pubs, B&Bs and boat operators in villages like Ballyronan, Maghery, and Oxford Island. Meanwhile, farmers bordering the lough may face more regulations (e.g. new water-quality rules in the Environmental Improvement Plan), causing friction.

Local communities also lose intangible benefits: a clean lough provides aesthetic and mental-health value, hunting and fishing recreation, and reinforces regional identity. Cultural events (such as boat parades or the annual Lough Neagh Festival) risk cancellation if the lake environment deteriorates. In short, the vulnerability of Lough Neagh's nature wealth is mirrored by vulnerability of the people whose lives are intertwined with it.

The loss of aesthetic and experiential connections erodes emotional and civic bonds with the lake. Without reconnection, political will and investment may wither, reducing future opportunities for recovery.

Cultural Heritage (Built and Intangible)

While less often highlighted than natural features, Lough Neagh’s cultural heritage is also at risk. Numerous archaeological sites (e.g. crannogs, ringforts, churches) lie at or near the water’s edge. Changing because of climate change water levels and flood regimes can submerge or erode such sites. For example, prehistoric remains are vulnerable to both high-water inundation and to drying if peat bogs around them degrade. Historic buildings including castles, mansions, and industrial relics suffer from increased moisture, storms, or neglect as local priorities shift. If climate change increases storms on the lough, shoreline structures could be damaged by waves and wind.

Intangible cultural heritage on Lough Neagh is rich but delicate. Traditional fishing knowledge (net-making, boat-handling, seasonal rhythms) has been passed down for centuries. Folklore and songs about the lough, local dialect words (some Gaelic), and communal practices (for example, summer gatherings during the midge swarm) all form a cultural tapestry. These traditions depend on the continued existence of the practices themselves. The ongoing environmental crisis – which threatens the very existence of the “Lough Neagh Fly” and the eel – thus threatens the continuity of community heritage. One academic note that curating Lough Neagh’s intangible heritage (fishermen’s stories, customs) was an active challenge at a Smithsonian Folklife festival. Without urgent action to preserve the lough’s ecosystem, much of this living heritage will fade, amounting to “cultural erosion.”

The weakening of ecological integrity directly affects cultural continuity. Heritage here is not fixed in the past, rather it is a living practice, now vulnerable to collapse under ecological and economic pressure. Once lost, these assets cannot be recovered. They represent centuries of historical continuity and identity. Their loss would sever community memory and remove anchor points for place-based education and tourism. These social and cultural threats are broadly summarised in Table 2.

Table 2: Social and Cultural Threats

Threat Area	Description	Impact
Decline of Traditional Livelihoods	Collapse of eel fishery, land consolidation, skill loss	Cultural erasure, economic decline
Community Disconnection	Negative perception, lost access, ownership changes	Reduced advocacy, weakened stewardship
Intangible Heritage Loss	Disappearance of stories, dialect, rituals, and seasonal traditions	Memory loss, identity erosion
Recreational Decline	Algal blooms, litter, aesthetic damage	Loss of health, tourism, and leisure benefits

Landscape and Access Changes	Visual and physical barriers to engagement	Disengagement from place and natural heritage
Policy and Governance Gaps	Brexit fallout, short-termism, poor coordination	Frustration, missed opportunities for joint solutions
Social Media	Some very angry and verging on abusive social media comments about LNP and DAERA	Can cause division and distract from finding solutions
Generational gap	Some suggestions that younger generation not as interested outdoors physical recreation	Difficulty getting young conservationist involvement

Table 3 below compares key heritage assets (natural and cultural) with their principal threats and vulnerabilities.

Table 2: Social and Cultural Threats

Threat Area	Description	Impact
Decline of Traditional Livelihoods	Collapse of eel fishery, land consolidation, skill loss	Cultural erasure, economic decline
Community Disconnection	Negative perception, lost access, ownership changes	Reduced advocacy, weakened stewardship
Intangible Heritage Loss	Disappearance of stories, dialect, rituals, and seasonal traditions	Memory loss, identity erosion
Recreational Decline	Algal blooms, litter, aesthetic damage	Loss of health, tourism, and leisure benefits
Landscape and Access Changes	Visual and physical barriers to engagement	Disengagement from place and natural heritage
Policy and Governance Gaps	Brexit fallout, short-termism, poor coordination	Frustration, missed opportunities for joint solutions
Social Media	Some very angry and verging on abusive social media comments about LNP and DAERA	Can cause division and distract from finding solutions
Generational gap	Some suggestions that younger generation not as interested outdoors physical recreation	Difficulty getting young conservationist involvement

Table 3 below compares key heritage assets (natural and cultural) with their principal threats and vulnerabilities.

Table 3: Key Lough Neagh assets and their risk factors.

Asset Category	Representative Assets / Features	Key Threats and Trends (Last 20 years and emerging)	Vulnerability / Impacts
Designated Sites (Ramsar/ASSI/SPA)	Lough Neagh & Lough Beg (ASSI/SPA/Ramsar); Rea's Wood & Farris Bay SAC (alluvial woodland); islands NNR	Eutrophication: nutrient runoff from agriculture, wastewater leads to algal blooms. Invasive species: zebra mussels (since ~2005) have increased water clarity, favouring cyanobacteria. Climate change: warmer summers and extreme rainfall (e.g. 2023 heatwave and wet July) drive blooms and floods. Hydrology: water level regulation (Bann weir), flood risk (2015/16 floods were highest since 1928) and drought affect wetland extent. Development/Land-use: drainage of shorelands, shoreline modifications, dredging, diffuse pollution. Bird disturbance: increased boating, recreation, predatory birds (gulls), and habitat fragmentation.	Protected wetland habitats are highly sensitive. Poor water quality (hypereutrophic conditions) degrades aquatic vegetation and fish spawning grounds. Bird populations (swans, ducks, terns) decline as feeding and nesting resources shrink. SAC alluvial woodland (Rea's/Farris Bay) is rare and must remain moist; drainage or invasive plants threaten it. Overall, combined pressures compromise the ecological integrity of SPA/ASSI; key features (20k+ wintering waterfowl, pollan fish) face reduced habitat quality.
Wetland Habitats	Peatlands (raised bog remnants at SW L. Neagh, etc); Wet grassland (seasonally flooded pastures); Fen/swamp/car (river corridors, marshes); Wet woodland (Rea's Wood, Farris Bay); Riverine (Lower Bann, tributaries)	Habitat loss/degradation: decadal decline from drainage for agriculture, peat extraction and peatland fires (e.g. 2020 burning of curlew nesting bogs); conversion of wet grassland to arable or improved pasture. Hydromorphology: lowered lake levels expose/shrink wetlands; erosion of shore (storms). Invasive flora/fauna: non-native trees, plants (e.g. Himalayan balsam along rivers), zebra mussels altering foodwebs. Pollution: nutrient loading fuels plant/algal shifts (loss of fen/pasture flora). Development: shoreline development (marinas, housing) and infrastructure fragment habitats.	High fragility: Many wetlands rely on precise hydrological regimes and low nutrient loads. Continued drainage and pollution reduce species-rich sedge and fen communities. Peatlands (carbon-rich bogs) are irreplaceable, their loss harms biodiversity and water buffering. Wet woodlands (Rea's/Farris) are among NI's best examples but depend on wet soils – drying or tree diseases could eliminate them. Habitat fragmentation (e.g.

		Climate extremes: summer droughts stress bogs; heavy rains/floods scour banks and deposit sediment.	of floodplain) undermines flood attenuation and nursery grounds for fish. Overall, wetland functions and the services they provide (water purification, flood control, carbon storage) are severely vulnerable.
Fish & Aquatic Fauna	European eel (largest wild eel fishery in Europe, protected GI product), Pollan (endemic whitefish), other fish (trout, perch, carp, coarse fish), Macroinvertebrates (e.g. Chironomid " <i>Lough Neagh fly</i> ").	Water quality: algal blooms and low oxygen can kill fish; reduced invertebrate foodweb. Nutrient Loading: shifts in oxygen/nutrients alter fish habitat. Invasive species: zebra mussels alter plankton; invasive crayfish (if present) can degrade habitat. Climate: warmer water raises metabolism but can exceed tolerance. Loss of food source: the <i>Lough Neagh fly</i> swarms (critical food for eels, pollan, ducks) are sensitive to water quality; any decline (e.g. through pollution or climate) imperils the whole food web.	Severe vulnerability: Eel are critically threatened due to ecosystem stress. Rare fauna are vulnerable to any habitat change. The collapse of the chironomid " <i>Lough Neagh Fly</i> " swarm would cascade through the food chain. Fish and invertebrate populations are highly sensitive to water quality and hydrological changes, making them among the most at-risk components.
Birds and Invertebrates	Wintering wildfowl (Whooper swan, pochard, tufted duck, etc), breeding waders/terns/grebes (, lapwing, curlew, redshank. common tern, great crested grebe). Invertebrates include aquatic insects (dragonflies, rare damselflies, aquatic snails).	Habitat degradation: loss of wet meadows reduces breeding sites for waders and wintering sites for wildfowl. Algal blooms foul foraging areas (e.g. birds avoiding algal scum). Predators/disturbance: predation risk for ground nesting birds heightened by unsustainable landuse practices such as intensive gamebird releases, agricultural intensification (drainage, intensive grazing) and recreation disturbing nesting waterbirds throughout year. Species decline: Curlew have plummeted NI-wide (80% since 1980s), and are near-extinct locally.	High concern: Many waterbird populations are already in decline. Iconic species like Curlew (a SPA/ASSI interest feature) are functionally gone without urgent action. Rare wetland invertebrates and plants (e.g. bog orchids) are likewise declining. The cumulative effect of nutrient pollution and habitat loss is undermining the site's ability to meet SPA conservation objectives. If trends

		Pollution: pesticide runoff can kill aquatic invertebrates. Invasive competitors/predators: e.g. mink, (invasive), greylag geese (overgrazing), introduced fish predating young. Climate: altered migration patterns; more extreme weather can reduce breeding success.	continue, the SPA/ASSI risks losing its key qualifying species.
Archaeological & Built Heritage	Neolithic and medieval sites on the shores (e.g. Lake-Dwellings sites, ringforts); historic structures (e.g. Mountjoy Castle, 17th c. blockhouse at Monea).	Flooding/Waterlogging: Climate-driven floods (e.g. 2016 event) threaten low-lying sites with erosion, saturation and foundation damage. Erosion: increased wave action/boat wakes can erode shoreline ruins. Land subsidence/drainage: altering water table for agriculture can dry out peat and destabilize wooden structures. Neglect & Access pressure: Limited resources for heritage management, combined with rising visitor numbers (without facilities), can damage fragile sites. Planning pressures: Development proposals near the lough (housing, marinas) may encroach on archaeological zones.	Moderate to high vulnerability: Many sites (especially earthen earthworks and wooden lake-huts) are very sensitive to hydrological changes. For example, permanent higher water levels could submerge littoral archaeological deposits, while draining wetlands can expose and oxidize organic remains. Historic buildings without maintenance may suffer weathering from harsher climates. Overall, Lough Neagh's rich cultural heritage – from ancient settlements to the old fishing methods – risks degradation if environmental stressors continue unabated.
Intangible Cultural Heritage	Lough Neagh Eel Fishery traditions (net-making, boat design, local lore); the annual “<i>Lough Neagh Fly</i>” phenomenon (folk knowledge/angling traditions); Gaelic songs/stories, local rural customs.	Livelihood loss: Decline of traditional eel fishing undermines generational knowledge transfer. Ecological disruption: If the midges or fish disappear, associated folklore and practices vanish. Economic change: As local economies shift away from agriculture and fisheries, youth emigrate,	High vulnerability: Intangible heritage is easily lost when the natural context fails. Fishermen note that “farming and NI Water are the two main polluters” undermining the eel catch. Without healthy fish and insect populations, the cultural

		eroding community continuity. Policy neglect: Lack of support for traditional practices erodes cultural pride. Tourism impact: Damaged natural environment (algal blooms, poor fish catch) diminishes heritage tourism (boat tours, festivals).	practices tied to them – midsummer swarming fly lore, traditional fishing techniques – have no substrate. The social fabric of lakeside communities (storytelling, rituals, dialects) is therefore highly at risk from the ongoing ecological crisis.
--	--	---	---

The table above and the narrative confirm that Lough Neagh’s vulnerability is multi-dimensional. Every category of heritage asset from designated wetlands to the Lough Neagh Fly folklore faces pressures that have grown over recent decades and are expected to intensify. Key cross-cutting findings include:

- a) Water quality decline is a foundational threat: It affects habitats, species, and even cultural practices. It is driven by multiple pollution sources, and has not improved: indeed, 2025 blooms show it may be worsening.
- b) Invasive zebra mussels have altered the ecosystem in unforeseen ways: While often overlooked, they play a role equal to climate in the recent algal crises.
- c) Climate change amplifies existing problems: wetter winters and storms are increasing flood risk, and hotter summers allow blooms to explode. Future climate projections (IPCC and NI CPRA) predict more of both trends.
- d) Habitat loss is ongoing: Despite international status, the wetland habitats continue to contract and fragment. Without large-scale restoration, species decline will continue.
- e) Socio-economic stakeholders are already feeling the impact: Fishermen, communities, and tourism businesses report direct harm.
- f) Policy and planning gaps exist: Lough Neagh spans multiple council areas and lacks a dedicated management authority. Although the NI Environmental Improvement Plan (EIP, 2024) and Lough Neagh Action Plan (2024) set priorities, implementation is behind schedule.

In summary, Lough Neagh’s natural and cultural systems are highly vulnerable to current pressures. The combination of intensified land use, climate shifts and invasive species has pushed the lough close to ecological tipping points. Protecting its wetlands, wildlife and heritage will require integrated action: reducing nutrient inputs (agricultural and sewage), restoring and protecting wetlands (peatland rewetting, wet grassland restoration), controlling invasives, and embedding local communities in stewardship. The analysis above, grounded in recent reports and research, provides

the evidence base for such efforts, highlighting where the lake's assets are most at risk.

EMERGING AND CUMULATIVE THREATS

While many pressures facing Lough Neagh are long-standing, a series of emerging and cumulative threats now place the lake at a critical tipping point. These are not isolated concerns; they interact, amplify one another, and accelerate the decline of both natural systems and cultural connections. This section examines the most urgent emerging threats, supported by recent research, local observations, and environmental policy analysis.

Worsening Eutrophication

Although eutrophication has been present for decades, its scale, frequency, and ecological impact have intensified rapidly over the last 5–10 years. What was once a seasonal nuisance has become a pervasive, year-round risk. The 2023 and 2024 cyanobacterial blooms were unprecedented in both size and duration.

Several key trends underpin this escalation:

- a) Phosphorus-saturated soils across the catchment (over 47% of Northern Ireland's soils now exceed safe P thresholds).
- b) Intensified rainfall events (driven by climate change) that wash nutrients into rivers and the lough.
- c) Ineffective enforcement of existing regulations and a lack of binding nutrient reduction targets for agriculture.
- d) Zebra mussels clearing the water column of benign competitors, indirectly supporting cyanobacteria.

Emerging threat: Without a cross-sector phosphorus reduction strategy, including mandatory farm nutrient budgeting and wastewater infrastructure upgrades, eutrophication is likely to worsen even under moderate climate scenarios. The impacts will ripple through ecosystems, communities, and water infrastructure.

Climate Change and Environmental Volatility

Lough Neagh is highly vulnerable to climate-induced extremes due to its shallow depth, vast surface area, and artificially regulated hydrology. The lake does not respond passively to climate stress instead it acts as a climate amplifier, triggering feedback loops in habitat structure, species viability, and flood/drought risk.

Emerging climate-related threats include:

- a) Flash floods and pluvial flooding overwhelming farmlands and archaeological sites (e.g. 2015–16 floods).
- b) Extended drought periods leading to habitat desiccation, reedbed dieback, and reduced oxygen levels in water.
- c) Temperature spikes disrupting fish physiology and breeding cycles.

- d) Phenological mismatches, where insect emergence (e.g., Lough Neagh fly) and bird migration no longer align due to altered seasonal cues.

Emerging threat: The increasing frequency and intensity of weather extremes projected by UKCP18 and NI Climate Risk Assessment will stress all parts of the lake system unless climate adaptation strategies are explicitly integrated into local conservation and planning regimes.

Pollution from Diverse and Diffuse Sources

In addition to agricultural runoff, pollution from diverse sources including urban wastewater, illegal dumping, septic tanks, and storm overflows poses a growing risk. Notably:

- a) Litter and plastic debris are entering the lake in increasing volume, damaging aesthetics, habitats, and wildlife.
- b) Sewage overflows during heavy rains carry untreated effluent into tributaries.
- c) Microplastics, pharmaceuticals, and pesticide residues are now routinely detected in UK freshwater systems; although data for Lough Neagh are sparse, risks are presumed similar.

Emerging threat: These pollutants act cumulatively with nutrients and invasive species, weakening species immunity, degrading water quality, and undermining public trust. The perception of Lough Neagh as a "contaminated" space now poses a reputational risk to heritage-based tourism and education.

Peatland and Wet Grassland Collapse

Northern Ireland has already lost over 80% of its original peatlands, and remaining areas around Lough Neagh are in poor or declining condition. These areas are:

- a) Essential carbon sinks; their loss undermines both biodiversity and climate mitigation efforts.
- b) Hydrologically critical, filtering and regulating the water that feeds the lough.
- c) Culturally and archaeologically significant, as many ancient structures (including wooden artefacts) are preserved in anaerobic bogs.

Emerging threat: Peatlands and wet grasslands are reaching a point of irreversible decline in structure and function. Without immediate rewetting and livestock management measures, ecosystem services such as carbon storage, flood mitigation, and rare species habitat will be permanently lost.

Biodiversity Collapse and Trophic Disruption

Several Lough Neagh species are now experiencing accelerating population collapse, with entire trophic levels breaking down. This includes:

- a) Eel and pollan, already at historic lows.
- b) Invertebrates, especially chironomids and dragonflies, which are both bioindicators and food sources.

- c) Breeding birds, such as curlew and lapwing, that rely on specific habitat conditions no longer present.

These species form the scaffolding of the lough's ecological and cultural identity. Their loss leads to:

- i. Trophic imbalance, with potential for boom-bust cycles in algae, coarse fish, and invasive predators.
- ii. Loss of cultural practices, as fishing, folklore, and community rituals lose their ecological basis.

Emerging threat: The breakdown of interconnected food webs risks creating an ecological “domino effect,” where the loss of one species precipitate cascading failures across the system.

Invasive Species Proliferation

The past two decades have seen a sharp increase in non-native species, with zebra mussels, Himalayan balsam, and other invasives now widespread. Their impacts include:

- Habitat conversion (e.g., balsam displacing native shoreline flora).
- Food web disruption (e.g., zebra mussels favouring toxic algae).
- Predation pressure (e.g., cormorants and mink targeting vulnerable fish and bird nests).
- Cultural disconnection, as traditional landscapes and wildlife fade.

Emerging threat: Without dedicated invasive species control programmes (removal, biosecurity, biocontrol trials), the lake's ecosystems will be dominated by generalist, low-value, often alien species.

Governance Fragmentation and Policy Weakness

Lough Neagh currently suffers from policy incoherence and a lack of centralised environmental authority. Multiple agencies statutory agencies including DAERA, NIEA, DFI, and local councils have overlapping responsibilities, while the Lough Neagh Partnership remains under-resourced with limited power or authority. The impact of Brexit has been especially damaging, for example, Loss of EU environmental regulations and enforcement mechanisms (e.g. the Habitats Directive), Uncertainty over long-term agri-environmental funding, replaced by year-to-year domestic schemes and weakening of accountability mechanisms and slower prosecutions for polluters.

Emerging threat: The absence of integrated, long-term environmental governance leads to fragmented responses and missed restoration targets. It also erodes community trust and limits investment in nature-based solutions.

Loss of Cultural Identity and Ownership

Perhaps the most intangible, but no less real, threat is the erosion of cultural connection to the lough. For decades, Lough Neagh has suffered from perceived neglect by authorities and poor media portrayal, disconnection from place, as youth emigrate and land changes hands and invisibility of cultural heritage, as eel traditions, boat-building, and lakeside customs fade from memory. This threatens future stewardship. People are less likely to fight for what they don't feel part of.

Emerging threat: If cultural identity continues to unravel, any environmental restoration may lack community support, continuity, or funding legitimacy. Rebuilding pride and connection must be part of the response.

Table 4 summarising the Key Emerging Threats and Their Drivers

Emerging Threat	Primary Drivers	Key Impacts
Worsening eutrophication	Phosphorus loading, climate warming, zebra mussels	Toxic blooms, fish kills, recreation loss
Climate extremes	Greenhouse gas emissions, deforestation, regulation gaps	Flood/drought, habitat loss, species stress
Diffuse pollution	Urban runoff, sewage overflows, microplastics	Water quality degradation, health risks
Peatland and grassland loss	Drainage, burning, livestock pressure	Carbon loss, habitat degradation, archaeology loss
Biodiversity and trophic collapse	Pollution, habitat change, invasive species	Food web breakdown, species extinction risk
Invasive species proliferation	Trade, lack of biosecurity, habitat disturbance	Dominance of alien species, native species decline
Governance and policy fragmentation	Brexit, devolution gaps, underfunding	Inaction, poor enforcement, missed restoration targets
Cultural disconnection	Emigration, land sale, environmental decline	Loss of stewardship, knowledge, and place identity

MITIGATION AND ADAPTATION STRATEGIES

Addressing the risks and vulnerabilities facing Lough Neagh requires more than reactive measures. It demands a strategic, integrated, and long-term approach that spans ecological restoration, climate adaptation, governance reform, and community involvement. The following section outlines early-stage actionable strategies across multiple domains, grounded in both best practice and local knowledge.

Nutrient Reduction and Water Quality Restoration

Nutrient pollution is the foundational threat to Lough Neagh. Tackling eutrophication at its source is critical to improving water quality and protecting heritage assets.

Key Actions:

- **Catchment Nutrient Management Planning:** Implement phosphorus budgeting tools at the farm level. Develop nutrient load targets for each sub-catchment (e.g. Upper Bann, Blackwater) with mandatory reporting. Develop with DAERA new Sustainable Catchment Plans for each of the main catchments to reduce nutrient overload
- **Riparian Buffer Zones:** Establish vegetation strips (5–20 m wide) along rivers and drains to absorb runoff. Fund fencing and planting through agri-environment schemes.
- **Constructed Wetlands:** Support natural filtration near wastewater treatment plants and slurry-prone zones. These small-scale wetlands trap sediment and nutrients before they reach the lough.
- **Upgrade Wastewater Infrastructure:** Prioritise investment in rural sewage systems and treatment plants across the catchment, especially areas with legacy undercapacity.
- **Ban Winter Slurry Spreading:** Enforce tighter seasonal controls and encourage slurry storage systems that avoid winter overflows.

Suggested Initiative:

“Clean Inflows, Healthy Lough” Programme — A nutrient reduction initiative aligned with Lough Neagh EFS Group members coordinated with DAERA, farming cooperatives, and water utilities.

Wetland and Peatland Restoration

Rebuilding Lough Neagh’s ecological integrity begins with restoring degraded buffer ecosystems, especially peatlands, wet grasslands, and floodplain woodlands.

Key Actions:

- **Peatland Rewetting:** Block drains, reintroduce sphagnum moss, and fence off sensitive zones to reduce trampling. Use carbon credit schemes (UK Peatland Code) to fund restoration.
- **Wet Grassland Recovery:** Work with farmers to reintroduce seasonal grazing, delayed mowing, and livestock exclusion zones during bird breeding seasons.
- **Woodland Edge Management:** Thin invasive species in Rea’s Wood and Farris Bay. Support regeneration of native alder, birch, and willow in appropriate hydrological settings.
- **Floodplain Connectivity:** Reconnect small rivers and marshes to their natural floodplains through bund removal and channel re-naturalisation.

Suggested Initiative:

“Restore the Edge” Project — Focused on key wetland habitats around the Lough (Rea’s Wood, SW Peatlands, Abandoned Lands), in partnership with local farmers and

NGOs. 20 % of land around the shores of the Lough are not managed as a farm and do not have a farm business number. They are also of high nature value. There is an opportunity to use this study (unmanaged Land Study LNP 2023)

Invasive Species Control and Biosecurity

To protect native biodiversity, targeted management of invasive species is urgently required.

Key Actions:

- **Zebra Mussel Containment:** While eradication is unlikely, reduce spread by enforcing boat-cleaning protocols, decontamination zones at marinas, and monitoring of water intakes.
- **Himalayan Balsam Removal:** Establish volunteer balsam-pulling groups along rivers during flowering season. Train local coordinators to manage sensitive areas (e.g. near bird nests).
- **Early Detection Systems:** Develop a regional rapid response protocol for new aquatic invasives (e.g. signal crayfish or floating pennywort).

Suggested Initiative:

“Protect the Native” Campaign — A community programme promoting biosecurity best practices and supporting community action against invasives.

Cultural Heritage Protection

The preservation of archaeological and intangible heritage must be built into environmental management frameworks.

Key Actions:

- **Preventive Conservation:** Install soft defences (e.g. willow spiling, natural gabions) near shorelines with known archaeological deposits.
- **Intangible Heritage Registry:** Support a digital archive of eel fishing lore, boat designs, seasonal customs, and dialect terms tied to the lough.
- **Heritage-based Agri-Schemes:** Provide financial incentives to farmers managing land adjacent to cultural features using traditional practices.

Suggested Initiative:

“Heritage Safeguard Plan for the Lough Neagh Basin” — A multidisciplinary strategy involving archaeologists, landowners, and cultural historians.

Strengthening Governance and Policy Integration

The absence of a single body responsible for Lough Neagh's management is a major barrier to coherent action.

Key Actions:

- Establish a new interdepartmental body on Lough. Work with Forever Lough Neagh work.: A body with representation from DAERA, DFI, local authorities, NGOs, landowners, and community groups.
- Secure Long-Term Funding: Move away from annual funding cycles. Instead, adopt a 10-year Landscape Partnership approach aligned with The National Lottery Heritage Fund, Environmental Improvement Plan, and NI Climate Action Plan.
- Reintroduce Post-Brexit Environmental Standards: Where possible, replicate WFD and Habitats Directive thresholds..
- Create a Joint Strategic Framework: Align biodiversity, agriculture, climate, and cultural policies under a single adaptive management plan for Lough Neagh.

Suggested Initiative:

Develop a new interdepartmental management structure “Forever Lough Neagh Recovery Road Map” — A shared vision and governance model to built collaboratively with all stakeholder sectors.

Integrating Climate Adaptation into Restoration

Given the expected increase in extreme weather, adaptation must be embedded in land and water management.

Key Actions:

- Resilient Infrastructure: Upgrade flood defences and drainage near critical built heritage, while promoting green infrastructure (e.g. rain gardens, urban wetlands).
- Drought-Resistant Wetlands: Design restoration to include water retention features, shade belts, and multiple hydrological sources.
- Climate Forecasting for Management: Use seasonal forecasting to inform grazing, mowing, or pollan harvest planning.
- Carbon-Focused Projects: Promote nature-based solutions like peatland and woodland restoration as part of NI’s climate action pathway.

Suggested Initiative:

“Climate Ready Neagh” Programme — A forward-looking resilience plan that aligns with net-zero goals and ecosystem-based adaptation targets.

Nature Recovery Networks

Its important to create mature connected networks around the Lough and its catchment. This should include landowners and Farmers around Lough Neagh who manage a large portion of the landscape and must be empowered to lead conservation efforts.

Key Actions:

- Unmanaged landowners and Agri-Environmental Clusters: Form groups of landowners farms working together to achieve joint outcomes (e.g. curlew nesting success, water quality targets).
- Carbon and Biodiversity Credits: Pilot market-based schemes that reward conservation activities with measurable ecosystem services returns.
- Capacity Building: Offer workshops, advisory support, and recognition programmes for farmers innovating in water management, hedgerow restoration, and heritage-sensitive practices.

Suggested Initiative:

“Lough Neagh Nature Clusters” — A model drawing on the successful Lough Neagh EFS Group scheme, supported by DAERA and conservation advisors.

Communication, Identity, and Public Support

To build momentum for restoration, the narrative around Lough Neagh must change from decline to shared opportunity.

Key Actions:

- Positive Messaging: Highlight success stories, community heroes, species returnees, and beauty spots through campaigns and exhibitions.
- Unified Branding: Develop a strong regional identity (e.g. "Heart of Ulster: Life on the Lough") across public signage, packaging, and media.
- Stakeholder Coordination: Create a joint information platform where agencies, NGOs, and citizens can share updates, events, data, and funding opportunities.

Suggested Initiative:

“ReStory Lough Neagh” — A cultural renewal and media campaign promoting pride, participation, and place-based hope.

Table 5: Summary of Strategic Recommendations

Strategic Area	Key Actions
Nutrient Reduction	Farm nutrient planning, buffer zones, wastewater upgrades
Wetland & Peatland Restoration	Rewetting, native planting, floodplain re-connection
Invasive Species Management	Zebra mussel control, balsam pulling, rapid response systems
Heritage Protection	Mapping, soft defences, traditional practice support
Governance Reform	Establish LNMA, long-term funding, policy alignment

Climate Adaptation	Wetland resilience, green infrastructure, carbon-focused projects
Farming for Nature	Cluster models, carbon credits, recognition schemes
Community Communication	Positive narratives, media engagement, public storytelling platforms

CONCLUSION: TOWARD A RESILIENT FUTURE FOR LOUGH NEAGH

Lough Neagh stands at a pivotal crossroads. Once a living symbol of ecological richness, cultural continuity, and community resilience, the lough now faces a convergence of threats that jeopardize not only its environmental integrity but also its identity and future as a shared landscape.

This analysis has illustrated, in depth, the physical, environmental, and social vulnerabilities threatening Lough Neagh's heritage:

- Decades of nutrient pollution from agriculture and wastewater have led the lake into a state of persistent eutrophication, culminating in toxic algal blooms that have created a state of ecological flux which may impact on fish populations, disrupt recreation, and reshape public perception.
- Climate change and hydrological modification have rendered the lough more volatile, with hotter summers, wetter winters, and increasingly severe flood and drought episodes placing pressure on both nature and infrastructure.
- The fragmentation and degradation of critical habitats - wet grasslands, peatlands, and alluvial woodlands - has diminished biodiversity and reduced the land's capacity to buffer change or store carbon.
- Iconic species such as the European eel, curlew, and pollan have reached near-collapse, threatening not only ecological balance but also the cultural traditions they underpin.
- Invasive species, shifting land ownership, Brexit-era policy gaps, and short-term political thinking have further complicated the governance and protection of this uniquely interconnected ecosystem.

But the crisis is not without hope. The environmental and cultural challenges of Lough Neagh also present an extraordinary opportunity for regeneration and re-connection.

From the ground up, there is a resurgence of public concern, a renewed willingness among landowners to explore conservation farming, and an expressed desire among communities to rediscover and revalue their relationship with the lough. Academic institutions, policy-makers, and environmental NGOs are also turning their attention back to the lough, recognising that its story is now a case study in the global struggle for heritage resilience in the face of ecological collapse.

To succeed, however, the response must be bold, integrated, and long-term. It must go beyond short-term fixes and into transformative planning that reimagines the governance, land use, public identity, and economic sustainability of the lough.

A Call to Action

1. For Government and Agencies: Establish a Forever Lough Neagh Management body including departments and main stakeholders. Restore long-term funding. Enforce nutrient reduction targets and accelerate wetland restoration. Integrate climate adaptation into all heritage planning.
2. For Farmers and Landowners: Embrace nature-based farming, cluster collaborations, and carbon finance opportunities. Become leaders in peatland protection and water stewardship.
3. For Communities and Educators: Reconnect through storytelling, citizen science, and volunteer action. Reclaim the lough as a space of learning, celebration, and well-being.
4. For Researchers and Innovators: Examine the use of Tradd point and the Limnology Lab or create a Living research space on the lough. Study, monitor, and experiment to support evidence-based restoration and adaptive management.
5. For the Public and Media: Shift the narrative. Highlight what is working, what is beautiful, and what is possible. Promote pride in place as a foundation for resilience.

In its current state, Lough Neagh is vulnerable, but it is not lost. The recovery of this vast and storied lake is not merely an environmental challenge, it is a moral, cultural, and intergenerational imperative. If we act together, with urgency and vision, Lough Neagh can once again become a thriving heart of Northern Ireland's natural and cultural life, not a monument to failure, but a model of what recovery looks like when communities come together to care for their own.

Section 2

Heritage Resilience Plan for Lough Neagh:

Part 2a

Business Stakeholder Engagement

BUSINESS STAKEHOLDER ENGAGEMENT SURVEY REPORT

Introduction

The Heritage Resilience Plan for Lough Neagh is a strategic response to the escalating ecological, cultural, and economic risks facing the Lough's landscape and communities. The Plan aims to restore degraded ecosystems, safeguard cultural heritage, and create sustainable, place-based livelihoods that reconnect people with land, water, and story. Local businesses, especially those engaged in tourism, recreation, fishing, and hospitality, are a key constituent to achieving this. Their ability to thrive depends on a healthy, respected Lough Neagh, and in turn, their actions can shape the future of heritage, culture, and conservation. This consultation aimed to explore how the HRP can best support local business sustainability while embedding economic activity into the stewardship of Lough Neagh's heritage. By aligning commercial opportunities with ecological and cultural resilience, it has the potential to provide stability, growth, and sustainability in a way that honours heritage while also ensuring long-term prosperity. This report explores the findings of the Business Stakeholder Engagement Survey, reflecting on the ten structured questions posed to respondents, and considering how their insights can inform both immediate actions and long-term strategies for resilience.

Findings and Analysis

1. Heritage as a Business Asset

The first question asked how Lough Neagh's heritage features in business models and its importance to customers. Responses highlight that heritage is not a peripheral theme but often central to identity and customer engagement. For some, the lough is directly in the business name, anchoring their branding in place. Others, such as food producers, emphasised the way heritage flavours, local ingredients, and cultural narratives provide authenticity and meaning to their products. For tourism operators and community groups, the lough represents both a backdrop and a lived environment, where heritage is experienced daily through recreation, storytelling, or education. Even businesses not directly situated on the shoreline recognised its symbolic importance and sought to weave Lough Neagh into tours and narratives. However, there was also acknowledgement of uneven visibility, with some feeling the lough is overlooked compared to more prominent attractions. This underscores a central finding: Lough Neagh is already a business asset, but its potential remains underdeveloped. The HRP can amplify this value by embedding heritage more firmly into business identity and helping businesses leverage it in ways that resonate with visitors.

2. Risk to Livelihoods and Local Economies

Respondents consistently described the significant impact of environmental decline on livelihoods. Algal blooms and pollution have disrupted water-based activities, caused cancellations, and diminished perceptions of the lough as a valued natural resource. For food-based businesses, threats to biodiversity and cultural practices translate directly into risks for product authenticity and identity. The psychological

impact of decline also emerged as a barrier, with businesses noting that visible degradation erodes public confidence and discourages investment. This is a crucial observation: the resilience of the local economy depends not only on the physical environment but also on the perception of stewardship and care. The HRP was seen as a potential framework for addressing these issues by coordinating action, securing funding, and enabling community-led projects. Importantly, respondents highlighted that resilience planning must be visible and credible, with action taken quickly enough to restore confidence.

3. Heritage-Led Economic Development Opportunities

When asked what kinds of heritage-focused opportunities should be promoted, respondents offered a wide range of ideas. These included food traditions and festivals, guided land and water-based tours, storytelling trails, eco-tourism hubs, and wildlife interpretation. Several emphasised the need to protect and promote the entire loughshore as a resource, in line with its Ramsar designation. Food traditions and cookery schools emerged as particularly strong opportunities, offering not only tourism experiences but also a way to embed cultural continuity in business models. Respondents highlighted the importance of connecting local produce with heritage narratives, creating immersive visitor experiences that sustain traditions while driving economic growth. There was strong interest in expanding water-based activities, with calls for new marinas, jetties, and services to create demand and enable hospitality growth. Larger-scale tourism initiatives, such as connecting with cruise ship excursions incorporating interpretive centres, were also suggested. The consensus would support that heritage-led development offers rich opportunities for diversification, but realisation depends on investment in infrastructure, promotion, and coordinated planning.

4. Local Business Role in Actioning the HRP

Businesses did not see themselves as passive beneficiaries of the HRP but as active contributors. Responses revealed a willingness to engage in education, eco-tourism, volunteering, cultural interpretation, and community activities. Cookery schools, for instance, positioned themselves as custodians of food heritage, while tour operators emphasised their role in interpreting stories for visitors. Respondents also expressed a desire to work collaboratively with councils and other partners to integrate Lough Neagh into larger tourism initiatives. This reflects recognition that resilience requires collective effort, and that businesses can amplify impact by aligning their actions with broader strategies. This finding suggests the HRP should not only provide support but also explicitly define and promote mechanisms for business involvement, ensuring that enterprises feel ownership of outcomes.

5. Sustainable Infrastructure and Visitor Experience

Infrastructure challenges were repeatedly raised as barriers to delivering high-quality, sustainable visitor experiences. Respondents identified poor access, inadequate transport links, insufficient marinas, and limited visitor facilities as constraints. Issues such as sewage works, litter, and unattractive signage also detract from heritage value. There was strong demand for investments in marinas and hospitality venues, improved public transport, and the return of large vessels (e.g. The Maid of Antrim) capable of interpretive tours. Community groups highlighted the need for upgraded

facilities to host cultural events and educational programmes. These responses underline the importance of coupling environmental restoration with infrastructure investment. The HRP must therefore balance ecological goals with the practical realities of heritage focused tourism, ensuring that sustainable visitor experiences are not only possible but attractive and accessible.

6. Safeguarding Intangible Heritage and Traditions

Respondents expressed deep concern about the erosion of intangible heritage, including eel fishing, folklore, crafts, and seasonal events. The need for active promotion, education, and support was repeatedly emphasised. Community groups suggested that local halls could serve as hubs for events, provided funding was available for staff and resources. Businesses offered to incorporate traditions into their activities, ensuring that stories and practices remain relevant. Others highlighted the importance of investing in those already working hard to promote heritage, suggesting that grassroots actors should be supported rather than overlooked. A recurring theme was the importance of credibility. As one respondent observed, intangible heritage can only be safeguarded if actions go beyond words (*"You can't just 'Talk the Talk', you must Walk the Walk as well"*). Visible support and sustained commitment will be essential to maintaining living traditions.

7. Partnership and Promotion Platforms

There was unanimous support for the creation of a Lough Neagh heritage business network or marketing partnership. Respondents saw this as an opportunity to align with HRP values, share resources, and amplify promotion. However, they also cautioned against exclusion or domination by narrow interests, stressing the need for inclusivity and respect for all users. Pollution and algal blooms were identified as urgent issues that such a network should prioritise, alongside wider promotional efforts. This finding indicates strong appetite for collective identity-building. The HRP could play a central role in facilitating such a network, ensuring it is equitable, collaborative, and strategically aligned.

8. Challenges to Sustainable Operation

When asked about barriers, businesses identified lack of coordination among government bodies, poor transport systems, and planning inconsistencies as challenges. Interestingly, some reported no significant obstacles, suggesting that issues vary by sector and geography. Nevertheless, the overarching concern remains fragmentation. Without coordination and coherent regulation, businesses struggle to operate sustainably and align with heritage values. The HRP therefore has an important role to play in providing clarity, advocacy, and joined-up frameworks for action.

9. Business Support for Heritage Resilience

Respondents expressed strong demand for support in the form of funding, training, partnerships, and branding. Community groups sought resources to improve facilities and employ staff, while businesses called for training in heritage-based tourism and partnerships with local producers. Shared branding under the HRP was seen as a way to give visibility and credibility, attracting visitors who value authenticity. Opportunities to expand activities, from water sports to guided heritage walks, were also highlighted.

The responses suggest business support must go beyond financial assistance. Skills development, collaborative platforms, and brand-building are equally vital for resilience.

10. Long-Term Vision and Legacy

When asked to imagine a thriving Lough Neagh economy in ten years, respondents painted vivid pictures. Clean water, children swimming, accessible boats, thriving shops, and well-funded facilities were among the visions described. For tour operators, the vision included improved infrastructure, interpretive centres, cafes, and galleries. Yet respondents also emphasised the urgency of action, with several warning that government investment, community support, and immediate action to tackle pollution were essential. Without decisive steps, the long-term vision risks being unattainable. The collective vision reflects optimism tempered by realism: Lough Neagh can be a resilient, heritage-rich economy, but only if action begins now.

Recommendations

Based on the survey findings, several recommendations emerge that should be considered for inclusion in the Heritage Resilience Action Plan. Lough Neagh must be recognised and promoted as a vital business asset, with heritage positioned at the heart of branding, storytelling, and visitor experiences. Action to address pollution and ecological decline is essential, as environmental health underpins both the confidence of investors and the authenticity of heritage-led activities. Alongside environmental restoration, opportunities for heritage-based economic development should be nurtured. Food traditions, festivals, eco-tourism hubs, and water-based recreation can all be expanded through investment in marinas, jetties, hospitality venues, and cultural programming. The HRP should formalise mechanisms for business involvement. Enterprises have expressed a clear willingness to contribute to education, cultural celebration, and tourism initiatives, and mechanisms such as advisory forums and partnership agreements would ensure this potential is fully realised. Infrastructure remains a central concern, and investment in transport, interpretive centres, and visitor facilities will be crucial in developing sustainable tourism that reflects the richness of heritage. In parallel, intangible traditions such as eel fishing, basket making, folklore, and seasonal events need safeguarding. Community groups and grassroots organisations should be supported through funding and integrated into tourism initiatives to keep these practices alive. The creation of a heritage business network is widely supported and could provide a platform for collaboration, shared branding, and strategic marketing, provided it remains inclusive and aligned with resilience goals. Addressing the lack of coordination between government bodies will also be vital, with clearer policy frameworks and streamlined planning processes enabling businesses to operate more effectively. Multifaceted business support should accompany these structural changes, including funding, training, partnerships, and branding opportunities. Skills development in heritage-based tourism, in particular, would strengthen the sector's capacity to grow while safeguarding traditions. Above all, survey responses highlighted the urgency of action. Environmental decline, particularly algal blooms, has already undermined public trust and economic stability. Immediate, visible interventions are needed to restore confidence, create a foundation for long-term investment, and demonstrate that Lough Neagh's heritage and economy

are being safeguarded for the future. These recommendations are summarised in Table 1.

Table 1: Recommendations derived from the Business Stakeholder Consultation

Recommendation Area	Suggested Actions
Recognise Heritage as a Business Asset	Promote Lough Neagh as a central identity marker and support businesses in integrating heritage into branding and storytelling.
Tackle Pollution and Environmental Decline	Invest in sewage infrastructure, enforce regulations, and take visible action against polluters to restore confidence.
Support Heritage-led Economic Opportunities	Develop food traditions, festivals, eco-tourism hubs, marinas, and cultural events to diversify economic growth.
Formalise Business Involvement	Create advisory forums and partnership agreements to ensure enterprises are active partners in delivering the HRP.
Invest in Sustainable Infrastructure	Improve transport links, visitor facilities, and interpretive centres to enhance sustainable tourism experiences.
Safeguard Intangible Traditions	Provide funding for community groups and integrate crafts, eel fishing, and folklore into tourism initiatives.
Establish a Heritage Business Network	Facilitate collaboration, shared branding, and marketing aligned with HRP values while addressing urgent issues.
Improve Government Coordination	Advocate for joined-up policy, reduce fragmentation, and streamline planning processes affecting businesses.
Provide Multifaceted Business Support	Offer training, funding, partnerships, and branding opportunities, particularly in heritage-based tourism skills.
Prioritise Immediate Action	Act swiftly on pollution and infrastructure improvements to secure long-term resilience and investor confidence.

Conclusion

The Business Stakeholder Engagement Survey demonstrates both the challenges and opportunities facing enterprises connected to Lough Neagh. While environmental decline and cultural loss pose real threats, businesses remain committed to the lough and willing to contribute actively to its stewardship. The HRP offers a framework for aligning economic sustainability with heritage preservation. By embedding heritage as a business asset, addressing ecological decline, investing in infrastructure, safeguarding traditions, and fostering collaborative networks, the HRP can provide the basis for a thriving, resilient economy rooted in place. The voices of business stakeholders make clear that the future of Lough Neagh depends not only on government action but also on community and enterprise engagement.

Appendix 1: Business Stakeholder Engagement Survey Questions

No.	Theme / Topic	Question	Objective
1	Heritage as a Business Asset	How does Lough Neagh's natural, built, or cultural heritage feature in your business offer—and how important is it to your customers or clients?	Focuses on the visibility and value of heritage in current tourism or enterprise models.
2	Risk to Livelihoods and Local Economies	In your experience, how have environmental decline (e.g. algal blooms, pollution) or cultural loss (e.g. disappearing traditions) impacted your business, and how could the HRP help address these issues?	Links resilience planning to real economic and social risks for business operators.
3	Heritage-Led Economic Development Opportunities	What kinds of heritage-focused business or tourism development should the HRP promote—such as food traditions, festivals, boat tours, storytelling trails, or eco-tourism hubs?	Elicits ideas for creative, place-based growth that celebrates heritage while sustaining livelihoods.
4	Local Business Role in Actioning the HRP	How do you see your business or sector contributing to the delivery of the HRP? What practical roles could you play in protecting, interpreting, or celebrating Lough Neagh's heritage?	Positions businesses as active partners in stewardship, not just passive beneficiaries.
5	Sustainable Infrastructure and Visitor Experience	What improvements to infrastructure, access, or interpretation would allow your business to support a more sustainable, heritage-rich visitor experience around Lough Neagh?	Connects HRP delivery to on-the-ground needs in tourism infrastructure and storytelling.
6	Safeguarding Intangible Heritage and Traditions	How can the HRP help protect and promote the cultural traditions linked to the Lough such as eel fishing, folklore, local crafts, and seasonal events, and what role could your business play in this?	Draws out the role of enterprise in conserving intangible heritage and living memory.
7	Partnership and Promotion Platforms	Would you support a Lough Neagh 'heritage business network' or marketing partnership to promote local businesses aligned with the HRP's values? What should it focus on?	Tests appetite for collaborative identity-building and co-promotion of HRP linked experiences.
8	Challenges to Sustainable Operation	Are there any regulatory, environmental, or planning barriers that make it difficult for your business to operate in a heritage aligned and sustainable way?	Surfaces policy and implementation gaps that could be addressed through the HRP's delivery framework.
9	Business Support for Heritage Resilience	What kind of support e.g. training, funding, partnerships, branding, would help your business grow while contributing to the goals of the HRP?	Identifies co-beneficial interventions that align business development with conservation and cultural goals.
10	Long Term Vision and Legacy	What would a thriving, heritage-led, environmentally resilient Lough Neagh economy look like in 10 years' time, and what needs to be put in place now to achieve that vision?	Encourages business stakeholders to articulate a shared legacy and commitment to long-term resilience.

Section 2

Heritage Resilience Plan for Lough Neagh:

Part 2b

NGOs, Academia, and Community Group Stakeholder Engagement

NGOS, ACADEMIA, AND COMMUNITY GROUP STAKEHOLDER ENGAGEMENT SURVEY REPORT

Introduction

The Heritage Resilience Plan for Lough Neagh is a strategic response to the escalating ecological, cultural, and economic risks facing the Lough's landscape and communities. The Plan aims to restore degraded ecosystems, safeguard cultural heritage, and create sustainable, place-based livelihoods that reconnect people with land, water, and story. For non-governmental organisations, academic institutions, and community groups, the Lough is both a living laboratory and a repository of memory. It holds biological diversity of international significance, including wetland habitats of global importance for migratory birds, alongside a cultural landscape rich in craft traditions, oral histories, and community identity. However, in recent decades, Lough Neagh has also become a site of mounting environmental stress and social concern. Eutrophication, invasive species, and habitat loss now threaten the ecological fabric of the lake, while fragmented governance and declining traditional practices erode its cultural coherence. Against this backdrop, the development of a Heritage Resilience Plan (HRP) offers an opportunity to weave together ecological recovery, cultural revitalisation, and institutional reform. For the NGO, academic, and community sectors, the HRP represents a framework not only for protecting what remains, but for building a shared capacity to adapt, collaborate, and regenerate. A Heritage Resilience Plan grounded in these stakeholder perspectives could ensure that future interventions are guided by evidence, co-produced with local communities, and integrated across disciplines and sectors. The plan has the potential to align heritage conservation with sustainability and social wellbeing, positioning Lough Neagh as a model of resilient stewardship. The following report analyses in depth the findings from the stakeholder engagement survey conducted among NGOs, academic institutions, and community groups. Each of the ten questions is explored in turn, linking the responses to the objectives of the Heritage Resilience Plan and drawing out implications for future action.

Findings and Analysis

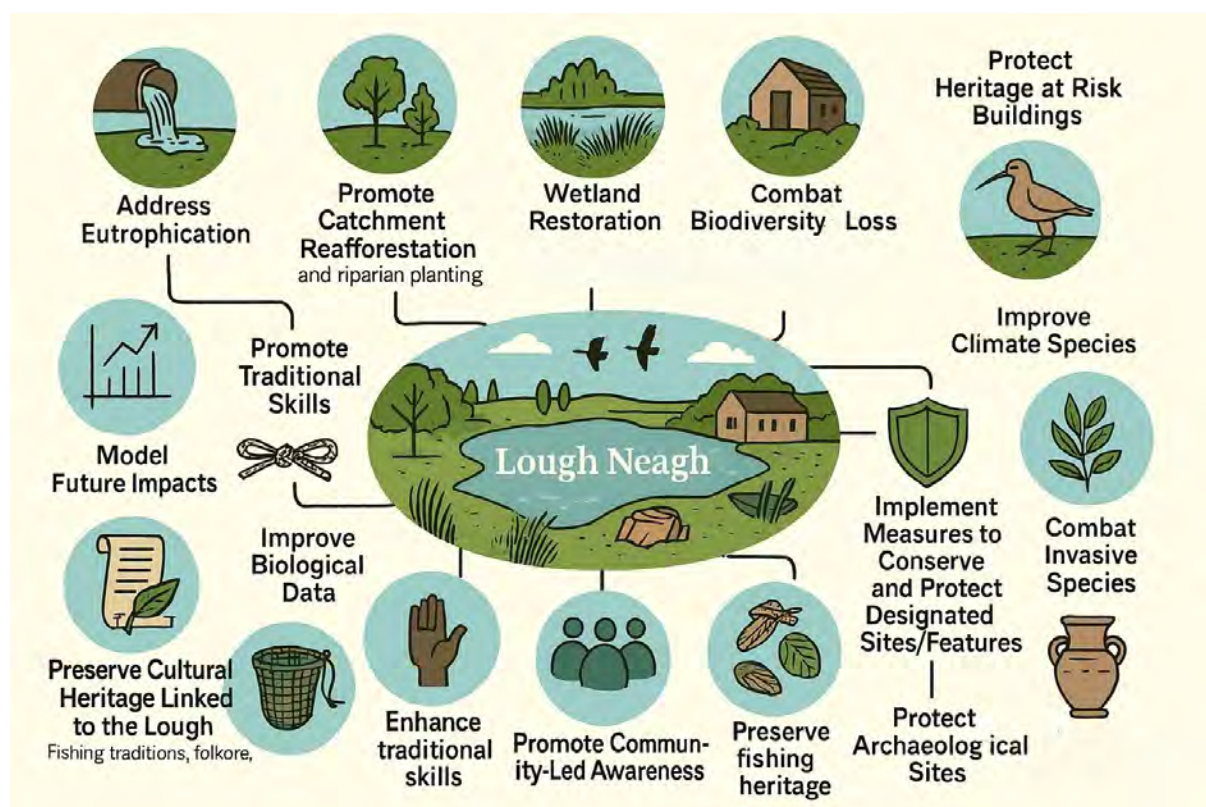
1. Landscape and Ecological Priorities

Stakeholders were asked to identify the most urgent ecological or heritage-related priorities around Lough Neagh and to highlight the top three areas for early action under the HRP. The responses reveal a striking consensus: the ecological crisis of Lough Neagh is both severe and systemic. Eutrophication driven by agricultural runoff, sewage discharge, and failing septic systems was repeatedly cited as the most pressing issue, with the associated proliferation of toxic blue-green algae blooms having far-reaching impacts on water quality, biodiversity, and public health. Participants emphasised that any credible Heritage Resilience Plan must begin with nutrient reduction and catchment-scale reforestation. These interventions would mitigate the flow of phosphorus and nitrogen into the Lough, while also contributing to climate resilience through carbon storage and habitat connectivity. The ecological deterioration is not purely biophysical; it also endangers cultural identity and

community livelihoods, particularly those linked to eel fishing and other traditional practices now in decline.

Other recurring priorities included the restoration of degraded wetlands, peatlands, and wet woodlands; the control of invasive species such as zebra and quagga mussels and Himalayan balsam; and the safeguarding of heritage buildings, many of which, especially vernacular thatch structures, are increasingly at risk. There was equal concern about the erosion of intangible heritage, from folklore to oral traditions, which are seen as inseparable from the lake's ecological health.

Stakeholders identified three overarching priority areas: addressing the causes of eutrophication; restoring and managing priority habitats and species; and promoting community learning and volunteering. This tripartite framing underscores the interdependence of environmental remediation, cultural continuity, and civic engagement. It also aligns closely with the HRP's intended objective of fostering resilience through integration, linking ecological integrity with social participation and cultural stewardship.



2. The Role of NGOs, Universities, and Community Groups

The second question explored the strategic and operational roles these organisations envisage for themselves in delivering the Heritage Resilience Plan. The responses paint a picture of a vibrant but fragmented ecosystem of actors whose combined expertise spans research, conservation, heritage management, and community engagement.

Academic institutions, particularly Queen's University Belfast and Ulster University, view their role as providing the scientific foundation and evidence base for effective decision-making. Queen's researchers emphasised interdisciplinary work across biological sciences, food security, and sustainability, focusing on the causes and impacts of algal blooms and developing rapid detection technologies. These advances promise to help water authorities and environmental agencies monitor conditions more effectively and inform policy for sustainable agriculture.

Ulster University highlighted its potential to bridge research and practice, combining ecological monitoring, technological innovation, and community collaboration. The institution's expertise in limnology and social engagement could underpin data-driven conservation initiatives while building local capacity through education and workshops.

Among NGOs, the National Trust, RSPB, Ulster Wildlife, the Rivers Trust, and Ulster Architectural Heritage each articulated complementary role. The National Trust's "Forever Lough Neagh – Roadmap to Recovery" offers a strategic framework that could serve as an anchor for cross-sector collaboration. The RSPB stressed the importance of restoring habitats and protecting vulnerable species while advocating for stronger environmental governance. Ulster Wildlife underscored the need for partnership approaches that integrate nature recovery with cultural heritage, while the Rivers Trust highlighted catchment-based solutions linking land management and water quality.

Community and heritage bodies, including Ulster Architectural Heritage and the British Trust for Ornithology, emphasised the potential to contribute data, mobilise volunteers, and advocate for built and intangible heritage protection. The combined message is clear: successful implementation of the HRP depends on recognising and resourcing these diverse contributions, ensuring that science, heritage, and community knowledge inform one another within a coherent governance structure.

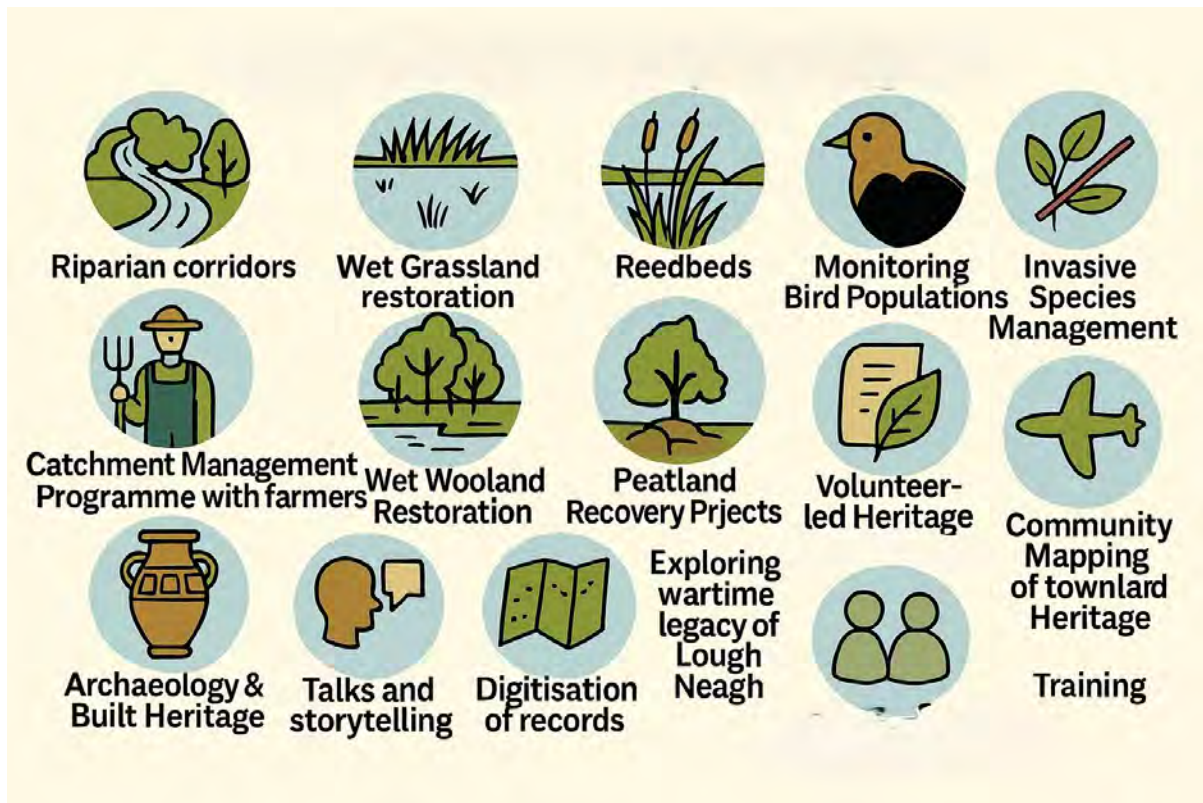
3. Opportunities for Ecological and Cultural Restoration

The third question invited stakeholders to identify forms of ecological and cultural restoration that should be prioritised. Their responses illustrate a sophisticated understanding of the need for integrated restoration—where nature recovery and cultural revival proceed hand in hand.

Nature-based solutions such as riparian corridor creation, catchment reforestation, wetland and peatland restoration, and the use of biological control agents against cyanobacteria were seen as foundational. These measures not only address the immediate ecological crises but also enhance long-term resilience by restoring the natural processes that sustain the Lough. Stakeholders suggested that large-scale peatland recovery and wetland rewetting projects could rehabilitate hundreds of hectares of degraded land, improving both biodiversity and carbon sequestration.

Equally significant were the cultural restoration proposals. Several respondents referenced the traditional use of reeds for thatching, once known locally as "bellan", and advocated exploring sustainable reed harvesting as a means to revive this practice. Others proposed programmes of oral history, storytelling, and community documentation to capture the lived heritage of Lough Neagh's people.

The vision that emerges is one where ecological restoration becomes a catalyst for cultural renewal. Training sessions in habitat restoration and community leadership, coupled with initiatives to digitise historical materials and map townland heritage, demonstrate how practical conservation can coexist with cultural empowerment. These ideas directly advance the HRP's objective of fostering resilience through participation, recognising that sustainable heritage is not only about preserving the past but also about enabling communities to shape their own futures.



4. Experience with Heritage or Conservation Project Delivery

Respondents were asked to provide examples of past or ongoing projects that could inform or be scaled up within the HRP. The responses show that a substantial foundation of expertise and experimentation already exists around Lough Neagh.

The National Trust has been working with partners including Lough Neagh Partnership, government departments, and local community groups to improve Lough Neagh's ecology and heritage through joint projects and strategic collaboration, the most notable of which is the '*Forever Lough Neagh – Roadmap to Recovery*' approach which sets out an ambitious, long-term vision for restoring the lake's ecological balance, strengthening its economic vitality, and enhancing the social well-being of surrounding communities.

Queen's University Belfast detailed multiple research projects addressing the lake's ecological challenges, including doctoral studies on algal bloom dynamics, satellite imagery analysis of productivity, lake sedimentology, and invasive species impacts.

The DAERA-funded “Aquaphage” project, which investigates bacteriophage treatments for cyanobacteria, exemplifies innovative applied science with direct policy relevance.

Ulster Architectural Heritage described heritage-focused activities such as visits by the Vernacular Architecture Group to significant sites, and collaborations exploring the condition of heritage buildings around the Lough. The BTO / LNP co-production project with the wildfowling community reviewing predation impacts on waterbirds illustrates a practical model for combining academic research with local knowledge.

RSPB’s *Saving Nature around Lough Neagh* project, led jointly with the Lough Neagh Landscape Partnership, worked towards restoring and protecting over 500 hectares of bog and wet grassland around the shores of the lough. Key sites included Newferry Bog, Brookend Nature Reserve, creation of a wildlife corridor from Montiaghs to Portmore, with plans for a new nature reserve on land formerly held by the Department of Education. At Montiaghs Moss, RSPB NI, together with Butterfly Conservation and others, has been restoring a relic raised bog (~151 ha). Works include blocking drains, scrub removal, grazing by ponies and Hebridean sheep, designed to revive bog features and support species like the Marsh Fritillary. At Portmore Lough Nature Reserve, RSPB manages a mix of wet grassland, fen, reedbeds and wet woodland. Recent work has focused on enhancing breeding and feeding habitat for breeding waders like lapwings and snipe by extending open water, creating shallow pools, and installing predator-proof fencing. RSPB also supports volunteer involvement via reserve management and habitat tasks across Portmore Lough, Lough Beg, Montiaghs Moss, including practical work parties for vegetation management, infrastructure maintenance, and species monitoring.

Collectively, these examples highlight that the building blocks of the HRP already exist across institutions and communities. What is now needed is an overarching framework that links them, amplifies their reach, and ensures that insights generated in one domain inform interventions in others. This cumulative capacity underscores the potential for a “learning system” approach to resilience—where ongoing monitoring, reflection, and adaptation are embedded in all project delivery.

5. Barriers to Collaboration or Joint Action

Stakeholders were candid in identifying barriers to effective collaboration. The responses describe an environment marked by fragmentation, competition, and limited trust. Funding scarcity was a recurrent theme, with NGOs noting that competition for grants often discourages cooperation and reinforces a “scarcity mindset.” Communication gaps and the use of technical jargon by statutory agencies were also seen as impediments to mutual understanding.

Structural issues compound these challenges. The complex and fragmented governance of Lough Neagh—divided among private owners, local councils, and government departments—creates uncertainty over responsibilities and weakens coordination. This fragmentation, coupled with a perceived imbalance of power between statutory bodies and local organisations, has historically undermined trust and joint planning.

Respondents proposed a suite of mechanisms to overcome these barriers. Chief among them was the creation of a unified management body for Lough Neagh, representing councils, departments, NGOs, and community stakeholders. Such a body would provide a focal point for coordination and accountability. Complementary proposals included launching a Citizens' Assembly to co-design solutions, developing joint action plans with clearly defined roles, and creating shared communication platforms for transparency and feedback.

Pooling resources, joint fundraising, and shared data infrastructures were identified as practical enablers of collaboration, while joint training and capacity-building initiatives could help bridge cultural divides between organisations. These insights speak directly to one of the HRP's central objectives: building institutional and social capacity for collective action. Without such capacity, even the most technically sound restoration efforts will struggle to achieve enduring resilience.

6. The Role of Academic and Local Knowledge and Evidence

The sixth question asked how research institutions can best contribute to the HRP. The responses converge on the idea that resilience depends on an ongoing dialogue between scientific evidence and local knowledge. Academic expertise in ecological monitoring, climate modelling, and policy analysis can provide the quantitative backbone of the plan, while community-based knowledge ensures that interventions are grounded in place-specific realities.

Stakeholders identified several core areas for academic contribution: long-term ecological monitoring of water quality and biodiversity; research into the impacts and management of algal blooms; and the development of evidence-based restoration strategies such as wetland buffers and nutrient management. Climate modelling and scenario analysis were also seen as critical for anticipating future risks and guiding adaptive management.

Equally important is the role of academia in documenting and interpreting intangible cultural heritage. Universities and heritage bodies can support oral history projects, cultural mapping, and digital heritage tools such as GIS databases and storytelling platforms. These approaches bridge science and culture, ensuring that data is accompanied by narrative, and that evidence is embedded in lived experience.

Respondents also urged universities to help develop policy and governance innovation, from exploring frameworks like the "Rights of Nature" to supporting unified lakebed ownership reforms. Citizen science initiatives and co-design research were highlighted as practical methods for embedding community participation in evidence gathering. Through such approaches, the HRP can evolve into a participatory research-practice partnership rather than a top-down policy instrument.

7. Built and Intangible Cultural Heritage

Beyond ecological concerns, stakeholders recognised the critical need to safeguard Lough Neagh's built and intangible cultural heritage. The responses reveal an understanding that the lake's identity is inseparable from its human history—the architecture, crafts, language, and stories that have shaped the communities around it.

There was strong support for community-led initiatives that link cultural interpretation with local pride and tourism potential. Suggestions included partnerships with Heaney HomePlace to celebrate regional language and poetry, and projects to conserve built heritage on Rams and Coney Islands. Respondents noted the rising number of heritage-at-risk buildings and the need to support owners with grants, guidance, and viable reuse options.

Adaptive reuse was a recurring theme: historic mills, fisheries buildings, and wartime structures could be repurposed as community museums, craft centres, or eco-tourism hubs. Such approaches not only preserve fabric but also generate economic and educational benefits. Similarly, heritage trails with interpretive signage and digital links to oral histories were proposed as ways to reconnect people with place.

Traditional craft revivals—boat building, glass cutting, thatching—were highlighted as opportunities for skills transfer and youth engagement. These initiatives demonstrate that resilience is as much cultural as ecological. By embedding cultural continuity within the HRP, Lough Neagh can sustain a sense of identity that motivates stewardship and participation.

8. Community-Led Stewardship and Local Capacity

The eighth question explored how the HRP could meaningfully embed community voices and stewardship into its governance, delivery, and monitoring structures. Stakeholders were unanimous that lasting change requires shared governance and genuine empowerment rather than tokenistic consultation.

Proposals included establishing co-governance boards, local stewardship councils, citizen panels, and participatory budgeting processes to give communities a direct role in decision-making. Respondents also stressed the importance of community-led procurement and delegated stewardship agreements to ensure local ownership of projects and outcomes.

Embedding community voices in governance must be matched with investment in capacity building. Training programmes in heritage conservation, environmental monitoring, and governance were seen as essential to enable communities to take on stewardship roles. Respondents advocated for the creation of local employment pathways and youth engagement programmes linked to heritage and environmental management, ensuring that stewardship is not only voluntary but also economically viable.

Digital tools and open data dashboards were proposed to facilitate transparency and citizen-led monitoring, while annual community forums could provide opportunities to review progress and adjust priorities. Underpinning all these suggestions is a belief that resilience depends on relationships of trust and accountability. The HRP's success will be measured not only by ecological indicators but by the strength of local participation in shaping and sustaining those outcomes.

9. Integrated Delivery and Shared Funding

Sustained action on heritage resilience requires stable and diversified funding. Stakeholders were realistic yet innovative in their thinking about financial mechanisms.

Traditional sources such as DAERA, NIEA, NERC, National Lottery, and PeacePlus were recognised as essential, but respondents called for a more integrated and collaborative funding model that reduces competition and builds long-term security.

Several respondents proposed the establishment of a ring-fenced Lough Neagh Resilience Fund seeded by major grants and philanthropy. Such a fund could generate annual income to support maintenance, monitoring, and rapid response activities. Blended finance models combining public grants with low-interest loans or social investment were also suggested to scale up initiatives beyond one-off projects.

Payments for ecosystem services were identified as a promising approach, rewarding farmers and land managers for measurable nutrient reductions and habitat restoration. This model aligns economic incentives with environmental outcomes and could be embedded within DAERA's agri-environment schemes. Community ownership vehicles for key shoreline or wetland parcels were likewise proposed as mechanisms to ensure long-term stewardship.

Stakeholders also highlighted the potential of social procurement, where local councils and utilities contract local NGOs or SMEs to deliver restoration and interpretation services, creating predictable revenue streams. Carefully managed eco-tourism and cultural enterprises could provide additional income while reinforcing the lake's identity. Collectively, these ideas underscore that heritage resilience is not only ecological or cultural but financial. The HRP should thus include a funding strategy that blends grants, investment, and earned income within a coherent delivery partnership.

10. Long-Term Change and Legacy

The final question invited stakeholders to imagine the legacy that the HRP should leave in ten to fifteen years and to identify the conditions necessary to achieve it. The responses convey a shared vision of transformation—a future where Lough Neagh has recovered its ecological balance, revitalised its cultural connections, and established enduring governance structures.

Ecologically, stakeholders envisage a self-sustaining lake system with lower nutrient levels, reduced algal blooms, and thriving biodiversity. Fish populations, particularly eel and pollan, would recover, and designated habitats would achieve favourable condition. The Lough would once again support functional fisheries and be recognised as a model of ecosystem restoration.

Culturally, the vision is of a community reconnected with its heritage—where traditional practices, crafts, and languages are celebrated and passed on. Built heritage would be better maintained, and owners empowered through access to grants and expertise. Intangible heritage, from storytelling to music, would be woven into education and tourism, creating a living narrative of resilience.

Institutionally, respondents aspire to transparent and participatory governance—a system where decisions are co-created among government, NGOs, and communities. The “Forever Lough Neagh” model was cited as a potential foundation for such a framework, embodying principles of collaboration and accountability.

Economically, the legacy should be a regenerative and inclusive local economy, where livelihoods derive from ecological health rather than its exploitation. Sustainable aquaculture, eco-tourism, artisan production, and renewable energy could together sustain communities while reinforcing environmental stewardship.

The conditions required to realise this legacy are clear: integrated governance, long-term funding, shared data systems, and sustained community engagement. Restoration must be institutionalised as a shared responsibility, with trust, transparency, and adaptive learning at its core.

Recommendations

The insights gathered from NGOs, academic institutions, and community organisations make clear that the Heritage Resilience Action Plan must act as both a strategic framework and a unifying platform for long-term, cross-sector collaboration. The first imperative is to ensure that ecological recovery provides the foundation for all other forms of resilience. Stakeholders have identified nutrient enrichment, habitat degradation, and invasive species as the most immediate threats to Lough Neagh's ecological integrity. Addressing these challenges requires coordinated catchment-scale management that reduces agricultural and wastewater inputs, restores wetlands and peatlands, and enhances carbon sequestration through reafforestation. These ecological actions must not occur in isolation but be integrated with cultural, social, and economic initiatives that sustain the communities who live around the lake.

Collaboration lies at the heart of the plan's success. The survey responses repeatedly emphasised the need for a unified governance structure capable of coordinating efforts across multiple organisations and jurisdictions. Establishing a Lough Neagh Management Partnership, incorporating representatives from local councils, government departments, NGOs, universities, and community groups, would provide a mechanism for joint decision-making, accountability, and shared ownership. Such a body would help to overcome the fragmentation that currently hampers progress and create the institutional framework through which long-term resilience can be managed. Its work should be supported by shared data platforms, joint funding strategies, and regular stakeholder assemblies to ensure transparency and alignment across sectors.

Research and knowledge-sharing are central to the effectiveness of any resilience plan. Academic institutions are well placed to lead long-term ecological monitoring, data analysis, and climate modelling, while community groups possess invaluable local and cultural knowledge that gives context and meaning to this evidence. The plan should therefore promote genuine co-production of research, bringing together scientific expertise and community insight. Projects that combine ecological monitoring with oral history recording, cultural mapping, and storytelling will ensure that the evolving understanding of the Lough remains holistic and inclusive. When science and lived experience inform one another, the heritage strategy becomes both more accurate and more grounded in the identities of those it serves.

Heritage resilience is equally dependent on safeguarding the built and intangible cultural assets that give the Lough its distinctive character. Protecting vernacular buildings, supporting adaptive reuse, and encouraging the revival of traditional skills

such as thatching and boat building can strengthen the cultural continuity that underpins community identity. Investment in interpretive programmes, digital storytelling, and heritage trails will help connect local residents and visitors alike to the narratives embedded in the landscape. Supporting owners, artisans, and cultural groups with targeted grants, training, and partnerships will help to maintain heritage assets while also generating employment and education opportunities.

Long-term stewardship must be embedded within local governance and community life. The plan should promote co-governance models that allow local representatives, youth groups, and voluntary organisations to participate directly in management decisions. Community advisory boards, citizen panels, and participatory budgeting processes can ensure that decisions about conservation and heritage reflect the needs and aspirations of those who live around the Lough. Building capacity through training, mentorship, and employment pathways will give communities the skills and confidence to take on stewardship roles, transforming them from consultees into active partners. Digital platforms and open data dashboards can provide the transparency and accountability needed to sustain public trust, while annual community forums can offer opportunities to review progress and refresh priorities.

Sustainable funding mechanisms form the backbone of resilience. Stakeholders have expressed a clear desire for a financial model that goes beyond short-term project grants to establish lasting stability. A ring-fenced Lough Neagh Resilience Fund, supported by a combination of public grants, philanthropic investment, and social finance, could provide a dependable source of income for conservation, monitoring, and community-led initiatives. Blended finance approaches—combining capital grants with low-interest loans or social investment—would enable scaling and innovation. Payments for ecosystem services could reward farmers and land managers for measurable nutrient reductions and habitat restoration, turning environmental benefits into recurring economic incentives. Community ownership vehicles and social procurement contracts would ensure that local organisations and businesses play a central role in delivery while retaining value within the region.

The long-term ambition of the Heritage Resilience Plan should be to align ecological restoration, cultural revitalisation, and economic renewal within a single, coherent framework. By linking environmental health with social wellbeing and economic opportunity, the plan can transform the current crisis into a catalyst for regeneration. Restored wetlands and improved water quality will provide the ecological stability upon which sustainable tourism, artisan industries, and cultural enterprise can flourish. At the same time, strengthened governance and shared funding arrangements will provide the institutional continuity necessary to sustain these outcomes across decades rather than years.

If these approaches are adopted, the Heritage Resilience Plan will evolve into a living, adaptive framework—one that builds trust, fosters collaboration, and empowers communities to become custodians of their own heritage. Through integrated ecological management, inclusive governance, and equitable investment, Lough Neagh can emerge as a model of heritage-led resilience: a place where environmental recovery and cultural identity reinforce one another, and where the future of the

landscape is secured through shared responsibility and collective pride. These recommendations are summarised in Table 1.

Table 1: Recommendations derived from the Consultation

Theme	Suggested Actions
Ecological Recovery and Climate Resilience	Implement catchment-scale nutrient reduction strategies. Restore degraded wetlands, peatlands, and riparian habitats. Develop invasive species management programmes and promote public education on prevention.
Integrated Governance and Collaboration	Establish a Lough Neagh Management Partnership (Forever Lough Neagh Model) bringing together statutory agencies, NGOs, academia, and community representatives. Develop joint action plans, shared communication platforms, and data-sharing agreements. Convene regular stakeholder assemblies and community forums.
Research, Data, and Evidence Co-Production	Support long-term ecological monitoring and climate modelling. Promote community-based research, citizen science, and oral history documentation. Create open-access data dashboards linking scientific and cultural information.
Cultural and Built Heritage Revitalisation	Conserve heritage-at-risk buildings and promote adaptive reuse for community or tourism purposes. Revive traditional skills (e.g. thatching, boat building, crafts). Develop heritage trails, storytelling initiatives, and digital interpretation tools.
Community Stewardship and Capacity Building	Deliver training in conservation, monitoring, and leadership. Establish youth engagement and local employment pathways in heritage management. Use digital platforms for transparency and citizen monitoring.
Sustainable and Shared Funding Mechanisms	Explore a <i>Lough Neagh Resilience Fund</i> with multi-source contributions (public, philanthropic, social finance). Use social procurement and community ownership models for delivery. Explore blended finance options combining grants and repayable investment.
Integrated Economic and Cultural Regeneration	Link ecological restoration with sustainable livelihoods through eco-tourism, artisan crafts, and green innovation. Support local enterprises that reinforce environmental stewardship. Promote responsible tourism aligned with conservation objectives.

Conclusion

The stakeholder engagement findings reveal a remarkable depth of commitment and expertise among NGOs, academic institutions, and community groups working around Lough Neagh. Their perspectives converge on a single insight: that resilience is not achieved through isolated interventions but through the weaving together of ecology, culture, governance, and community. The Heritage Resilience Plan provides the mechanism to do precisely that—to transform a landscape under strain into a model of sustainable recovery and shared stewardship.

If the recommendations outlined here are taken forward, the HRP can become more than a strategic document. It can become a living framework that enables

collaboration, nurtures identity, and restores balance to a landscape that remains central to Northern Ireland's natural and cultural heritage. The legacy of such a plan would not only be a cleaner, healthier lake, but also a community of practice—rooted in evidence, animated by culture, and sustained by shared purpose—capable of safeguarding Lough Neagh for generations to come.

Appendix 1: Interview Schedule: NGOs, Academia & Community Groups

No.	Theme / Question	Interview Question	Objectives
1	Landscape and Ecological Priorities	From your perspective, what are the most urgent ecological or heritage-related priorities around Lough Neagh that the Heritage Resilience Plan must address? What should be the top three priority areas (ecological, cultural, or community-based) for early action under the HRP?	Triage of at-risk assets; urgency vs. feasibility. Identify species/habitats, cultural landscape vulnerabilities, community memory at risk, ecological tipping points.
2	Role of NGOs, Universities, and Community Groups	What strategic or operational role do you see your organisation playing in the delivery of the Heritage Resilience Plan? How can this contribution be most effectively integrated and supported?	Alignment with ongoing conservation or heritage activity; perceived value of a unifying, resilience-focused framework. Delivery capacity, technical expertise, lived knowledge, long-term place-based commitment.
3	Opportunities for Ecological and Cultural Restoration	What forms of ecological or cultural restoration (e.g. wetland rewetting, pollan recovery, oral history projects, heritage trail development) should be prioritised within the Plan and why?	Identify synergies between nature and culture; promote landscape-scale restoration; evaluate feasibility and co-benefits (carbon, biodiversity, cultural).
4	Experience with Heritage or Conservation Project Delivery	Can you share examples of past or ongoing projects your organisation has delivered in the Lough Neagh area that could inform or be scaled up within the Heritage Resilience Plan?	Learn from previous initiatives: community conservation, academic fieldwork, cultural storytelling, wetland restoration. Extract success factors, challenges, stakeholder engagement, monitoring, and legacy practices.
5	Barriers to Collaboration or Joint Action	What are the current barriers to joint working among NGOs, communities, and statutory agencies around Lough Neagh, and what mechanisms could help overcome them?	Identify structural limitations, trust issues, funding silos, and governance gaps. Seek solutions to enhance collaboration.
6	Role of Academic and Local Knowledge and Evidence	How can research institutions best contribute to the Heritage Resilience Plan - through ecological monitoring, cultural mapping, community engagement research, or climate modelling?	Integrate community knowledge, academic rigor, and participatory tracking of heritage/climate resilience indicators. Explore longitudinal studies, data

			access, student partnerships, applied research gaps.
7	Built and Intangible Cultural Heritage	Beyond natural heritage, what opportunities do you see to safeguard or revitalise Lough Neagh's built and intangible cultural heritage through community-led action or interpretive programming?	Focus on oral traditions, boatbuilding, folk customs, place names, vernacular buildings, eel fishing heritage. Promote cultural continuity and revival.
8	Community-Led Stewardship and Local Capacity	How can the Heritage Resilience Plan meaningfully embed community voices and local stewardship into its long-term governance, delivery, and monitoring structures?	Develop co-management frameworks, community training, citizen science initiatives. Build long-term local ownership.
9	Integrated Delivery and Shared Funding	What funding, delivery, or partnership models would enable sustained action on heritage resilience, and how could the HRP help mobilise or coordinate these resources?	Explore models such as The National Lottery Heritage Fund or DAERA partnerships, Interreg-style joint bids, university/NGO hybrids, and catchment-based approaches. Promote sustained, collaborative funding.
10	Long-Term Change and Legacy	What kind of legacy should the Heritage Resilience Plan aim to leave in 10–15 years—ecologically, culturally, institutionally—and what conditions must be in place now to make that possible?	Define desired outcomes: cultural revival, habitat recovery, intergenerational connection, institutional reform, public trust. Identify enabling conditions for long-term impact.

Section 2

Heritage Resilience Plan for Lough Neagh:

Part 2c

Decision Maker Stakeholder Engagement

STATUTORY, COUNCIL AND DECISION MAKER STAKEHOLDER ENGAGEMENT SURVEY REPORT

Introduction

The Heritage Resilience Plan for Lough Neagh is a strategic response to the escalating ecological, cultural, and economic risks facing the Lough's landscape and communities. The Plan aims to restore degraded ecosystems, safeguard cultural heritage, and create sustainable, place-based livelihoods that reconnect people with land, water, and story. For the statutory bodies responsible for planning, environmental management, infrastructure, culture, and community development, the Lough is not a peripheral concern but a central feature around which multiple responsibilities converge. Its health and resilience have direct implications for regional well-being, from tourism potential and environmental stability to social cohesion and economic regeneration. The significance of Lough Neagh's heritage lies in its multidimensional character. Its natural heritage includes internationally recognised habitats, species of cultural and ecological value, and a landscape that has shaped local livelihoods for centuries. Its built heritage comprises monuments, churches, industrial remnants, and settlements that reflect successive layers of human engagement. Intangible heritage remains equally critical; this includes oral storytelling traditions, skills associated with eel fishing, community-based stewardship practices, and the unique cultural identity that binds the communities encircling the shoreline. The interdependence between these dimensions underscores the need for an integrated approach to safeguarding heritage that spans ecological resilience, cultural continuity, and socio-economic sustainability. The development of a Heritage Resilience Plan (HRP) for Lough Neagh emerges at a moment when these values face mounting pressure. The HRP seeks to provide that mechanism by establishing a shared framework that brings together statutory bodies, community stakeholders, and wider partners to coordinate action around heritage and resilience. Its purpose is not to replace existing strategies but to align them, creating a coherent direction of travel that connects environmental priorities, cultural development, planning policy, community empowerment, and strategic investment. Through the HRP, statutory bodies have the opportunity to move beyond siloed working and embrace a holistic approach that recognises heritage as a cross-cutting theme essential to the region's long-term sustainability. The findings of the Decision-Makers Stakeholder Engagement Survey provide an invaluable foundation for this process. They reveal a strong appetite for collaboration, an appreciation of the Lough's strategic importance, and a recognition that new forms of governance, integration, and stewardship are necessary to secure its future. The following sections analyse each of the survey themes, drawing out the implications for heritage resilience and identifying opportunities for the HRP to deliver meaningful, long-term impact.

Findings and Analysis

1. Strategic Value of the Heritage Resilience Plan

Across statutory bodies, there is clear recognition of the strategic value that a Heritage Resilience Plan can offer. The responses highlight that the Lough already sits

prominently within the corporate and thematic plans of participating councils and agencies, particularly with respect to tourism, biodiversity, environmental protection, community planning, economic development, and climate action. However, there is an equally strong acknowledgement that these various strategies, while individually robust, lack a unifying framework that coordinates their implementation at the scale of the Lough and its catchment.

The HRP is seen as a mechanism that can enhance existing statutory remits by providing a strategic backbone for heritage and environmental protection. It offers a means to consolidate the fragmented efforts that currently take place within and between organisations. By creating a single point of reference for heritage-related priorities, the HRP can complement statutory responsibilities and support more coherent long-term planning. This is especially important as Councils continue to develop heritage strategies, tourism initiatives, and environmental action plans, all of which reference the Lough but do so in divergent ways.

Participating bodies perceive the HRP as an opportunity to align their organisational mandates within a broader regional narrative. In particular, the HRP could provide a platform for linking tourism development with environmental management, aligning cultural heritage programming with community development ambitions, and strengthening the interface between heritage conservation and local economic regeneration. The strategic value of the HRP therefore lies in its ability to convene, align, and integrate, thereby reinforcing the role of heritage in shaping the region's sustainable future.

2. Policy Alignment and Heritage Integration

Although heritage considerations feature prominently across statutory policies, the survey highlights a persistent gap between policy intention and practical integration. The planning system, climate strategies, tourism plans, and community plans collectively address aspects of Lough Neagh's present and future, yet they operate largely in parallel. This fragmentation limits the ability of statutory bodies to respond effectively to cross-cutting challenges, particularly those involving environmental quality, cultural protection, and development pressures. Respondents noted that local development plans represent a particularly important tool for policy integration, especially in relation to environmental designations and development restrictions. While these plans provide a regulatory framework for protecting sensitive landscapes, they do not always fully connect with cultural or community-based heritage aims. The HRP, therefore, has a potential role in identifying opportunities for harmonisation between environmental planning, heritage conservation, and community wellbeing. Statutory bodies also recognise the need for the HRP to address policy silos that inhibit coordinated action. For example, while climate action plans increasingly acknowledge the role of natural heritage in climate adaptation, they may not adequately integrate cultural heritage elements or intangible traditions that contribute to climate resilience. Similarly, heritage strategies may highlight community-based priorities but not fully link them with environmental management or spatial planning. The HRP can therefore serve as a strategic tool for bridging policy gaps, encouraging integrated decision-making, and identifying areas where legislative or policy innovation may be necessary.

3. Governance for Resilience

Effective governance emerged as a central theme in the responses, reflecting a shared understanding that no single organisation can address the challenges facing Lough Neagh alone. The scale of the Lough, the complexity of its ecological and cultural systems, and the diversity of stakeholder interests all demand a collaborative governance approach. The proposed Heritage Resilience Partnership Group was generally welcomed, with decision-makers expressing a willingness to participate in such a model, provided that the governance structure is clear, practical, and appropriately resourced. The survey responses indicate that existing governance arrangements, while functional, are insufficient to deliver system-level change. Some councils already contribute to multi-agency initiatives and appoint representatives to governance bodies, demonstrating that partnership working is feasible. However, the HRP's governance model will need to provide clarity on roles, decision-making authority, and accountability mechanisms. Participants emphasised the importance of ensuring that governance structures do not duplicate existing systems or create administrative burdens, but instead streamline collaboration and enhance strategic coherence. Operational requirements were also highlighted. Effective governance will require dedicated staffing, sustainable funding, and political support. The HRP must therefore articulate a clear operational framework for collaboration, including processes for shared decision-making, reporting, and priority setting. The governance model should support collective ownership of the Lough's future, foster cross-agency trust, and provide the stability needed for long-term heritage resilience.

4. Heritage at Risk and Priority Setting

The survey responses reveal a broad consensus that all aspects of Lough Neagh's heritage are currently vulnerable. Natural heritage faces acute threats from environmental degradation, particularly the proliferation of blue-green algae, which has far-reaching consequences for water quality, public access, biodiversity, and tourism. Built heritage assets require investment and coordinated stewardship to address underuse, structural deterioration, or limited visitor engagement. Intangible heritage is especially fragile, as traditional skills, oral histories, and community-led cultural practices face the risk of fading from memory. Decision-makers identified the loss of biodiversity, the decline of traditional industries such as fishing, and the erosion of community-based traditions as critical areas of concern. Community and Heritage groups are struggling to remain active, underscoring the need for capacity building and sustainable support structures. The Lough's cultural story is seen as vital to both community identity and tourism development, yet its preservation requires targeted investment and a clear mechanism for prioritising interventions. Respondents expressed a strong desire for a more systematic approach to identifying heritage priorities. A transparent and evidence-based prioritisation mechanism, potentially incorporating a heritage risk register or scoring system, could help organisations align their resources and focus on interventions with the greatest strategic value. The HRP can facilitate this by providing a structured framework for evaluating heritage needs, coordinating funding opportunities, and supporting multi-agency collaboration on high-impact projects.

5. Climate-Resilient Heritage Futures

Climate change is already affecting Lough Neagh, amplifying existing pressures and creating new risks to natural and cultural heritage. Statutory bodies recognise that the HRP must position heritage as a key component of climate resilience planning. Several councils have adopted climate action plans that demonstrate an understanding of the interdependence between ecological health and climate adaptation. They acknowledge that enhancing natural environments helps mitigate flooding, supports biodiversity, and strengthens the resilience of local communities. The HRP offers a unique opportunity to embed heritage more deeply within climate strategies, ensuring that both natural and cultural assets are considered in adaptation planning. Participants highlighted the importance of ecosystem-based approaches, reflecting a broader shift toward landscape-scale resilience. However, environmental resilience must also extend to cultural landscapes, traditional skills, and community practices that contribute to long-term sustainability. Practical steps identified by respondents include strengthening the integration of heritage and climate planning, promoting nature-based solutions, and ensuring that investments in heritage infrastructure contribute to broader climate objectives. The HRP can encourage statutory bodies to consider how heritage assets can serve as anchors for climate resilience, particularly in the context of managing water systems, protecting vulnerable habitats, and fostering community capacity.

6. Landscape-Scale Planning and the Lough Neagh Heritage Impact Zone

The proposal to create a Lough Neagh Heritage Impact Zone (LNHIZ) elicited mixed views. While participants acknowledged that a spatially coordinated approach could enhance conservation and planning efforts, some expressed concern about its feasibility and added value. Planning policy around the Lough is already highly restrictive due to environmental designations, and respondents questioned whether an additional policy overlay would provide benefits beyond existing regulations. The hesitancy reflects a broader challenge in balancing regulatory frameworks with the need for innovation. Statutory bodies recognise the importance of landscape-scale planning, yet they also identify potential barriers in community acceptance, regulatory complexity, and adoption processes. The HRP will need to articulate clearly what a Heritage Impact Zone would achieve that current frameworks do not, and how it could support heritage resilience without imposing prohibitive constraints. Nevertheless, there is recognition that a coordinated spatial approach could strengthen strategic planning and facilitate more effective conservation management. The HRP could explore non-regulatory mechanisms for operationalising the LNHIZ, such as shared guidance, joint planning endorsements, or voluntary heritage-sensitive design principles. This would allow statutory bodies to collaborate on spatial priorities without introducing additional layers of statutory control.

7. Funding Innovation and Strategic Investment

The funding environment for heritage, environment, and community development is increasingly constrained. Statutory bodies highlighted the need for innovation in funding mechanisms to underpin the HRP's implementation. While some councils emphasised the role of community planning partnerships in fostering collaborative investment, others reported shrinking budget availability and the need to consider

alternative funding models. Participants identified the potential for collective approaches to funding, including bottom-up models that involve the community and voluntary sector. There is particular interest in developing funding strategies that bring multiple funders together, encourage co-designed investment approaches, and align grant-making with long-term resilience goals. The HRP has the opportunity to catalyse this by creating a shared funding platform, identifying joint investment priorities, and exploring non-traditional mechanisms such as outcome-based investment or pooled community–statutory resources. A key theme arising from the survey is that heritage funding should be inclusive, participatory, and strategically aligned with local needs. The HRP can help coordinate these efforts, ensuring that investment is directed toward projects that build long-term capacity, enhance resilience, and support the diverse dimensions of heritage around Lough Neagh.

8. Data and Accountability Architecture

Although the survey responses provided limited detail on data governance, the proposed Catchment Data Observatory and Heritage Dashboard were met with conceptual support. Statutory bodies generally recognise the need for shared systems of monitoring, evaluation, and data governance to support evidence-based decision-making. The HRP's emphasis on transparency and accountability aligns with existing commitments to improve data quality and cross-agency collaboration. The value of a shared data architecture lies in its ability to provide a unified evidence base for assessing heritage risk, evaluating the impact of interventions, and guiding investment decisions. Statutory bodies are well positioned to contribute environmental, cultural, planning, and community data that can inform a more comprehensive understanding of the Lough's heritage landscape. The HRP can facilitate data sharing protocols, establish common indicators, and promote joint monitoring arrangements, ensuring that the resilience agenda is grounded in robust and accessible evidence.

9. Community Stewardship and Institutional Embedding

Community engagement is viewed as an essential element of heritage resilience. Statutory bodies emphasised the importance of community stewardship, noting that local people play a vital role in protecting and promoting heritage assets. Initiatives such as community tourism programmes and neighbourhood visitor information points were highlighted as successful examples of how community participation can enhance heritage awareness and foster pride of place. Respondents also recognised that community groups often face capacity challenges, underscoring the importance of sustained institutional support. The HRP can formalise community engagement through models such as stewardship charters, living heritage registers, or co-developed heritage programmes. These mechanisms can create structured pathways for community involvement, ensuring that local voices are embedded within governance, planning, and project delivery. The HRP should focus on empowering local people as custodians of their heritage, strengthening skills, building capacity, and fostering a sense of collective responsibility for the Lough. This will help ensure that heritage resilience is not solely a statutory concern, but a shared endeavour rooted in community identity and participation.

10. Legacy, Influence, and Long-Term Impact

The vision for Lough Neagh over the next decade, as articulated by statutory bodies, revolves around environmental recovery, community empowerment, and strengthened governance. Participants expressed a desire to see significant progress in addressing blue-green algae, enhancing recreational access, restoring the Lough's reputation, and supporting traditional industries such as fishing. They also emphasised the importance of community ownership, with aspirations for people to value the Lough as a place and take responsibility for its protection. Long-term success is also framed in terms of increased collaboration among the councils and agencies bordering the Lough. Respondents envision a more unified regional approach, supported by coherent governance structures and shared legislative backing. Cultural and intangible heritage should be better protected, with improved awareness and infrastructure to support storytelling, skills preservation, and cultural expression. The HRP's legacy will be measured by its ability to transform the region's relationship with the Lough, shifting from fragmented oversight to a more integrated, proactive, and community-led model of stewardship. Success would see the Lough's environment stabilised, its heritage assets enhanced, its communities empowered, and its reputation renewed as a place of ecological health, cultural richness, and sustainable development.

Recommendations

The development of a Heritage Resilience Action Plan for Lough Neagh should be guided by a clear and integrated approach that reflects the collective insights offered by participating statutory bodies. A central priority is the establishment of a coherent governance structure capable of bringing councils, agencies, and community partners together within a stable, transparent framework. Such a structure must support joint decision-making, foster strong operational relationships, and provide consistent mechanisms for coordinating investment and monitoring progress. By enabling shared ownership of the Lough's long-term stewardship, governance becomes the foundation upon which all other resilience measures can be built. Policy integration represents another essential dimension. The HRP should seek to harmonise the diverse strategies already in place across planning, environment, tourism, culture, and climate action. Where policy gaps or inconsistencies exist, the Plan can offer guidance on aligning statutory responsibilities and identifying opportunities for legislative or procedural refinement. Through this stronger alignment, heritage can emerge as a connective theme that guides development at the catchment scale, ensuring that environmental concerns, cultural priorities, and spatial planning considerations reinforce rather than complicate one another. A structured and evidence-led approach to identifying and addressing heritage at risk will also be crucial. The Plan should support the development of a transparent prioritisation system that helps organisations collectively assess vulnerability across natural, built, and intangible heritage. Such a framework can direct attention toward the most pressing issues, encourage joint interventions among statutory bodies, and ensure that resources are allocated where they will have the greatest impact. Within this context, the escalating challenge of blue-green algae demands coordinated scientific, environmental, and community

responses that reflect its significance not only as an ecological issue but as a cultural and economic one.

Embedding heritage within climate adaptation planning will enhance the long-term resilience of the Lough's landscape and communities. The Plan can encourage statutory bodies to treat heritage assets as integral components of climate resilience, emphasising the importance of nature-based solutions, habitat restoration, and the protection of cultural landscapes as part of wider adaptation strategies. This alignment will help ensure that investments contribute simultaneously to heritage protection and climate stability. The question of funding will continue to shape what is realistically achievable. The Plan should encourage innovative funding models that enable collaborative investment, bring funders together around shared priorities, and empower community and voluntary organisations to participate fully in the heritage resilience agenda. Approaches that combine statutory resources, community contributions, and external funding opportunities will allow for more sustainable and inclusive heritage outcomes. Reliable data and shared monitoring practices are essential for measuring progress. A coordinated data framework, potentially anchored by the proposed Catchment Data Observatory and Heritage Dashboard, can support evidence-based planning and improve transparency across agencies. Collaborative data governance will help create a comprehensive understanding of heritage conditions, track the effectiveness of interventions, and strengthen accountability to both statutory partners and local communities. Finally, the Plan must embed community stewardship as a core principle. The resilience of Lough Neagh's heritage ultimately depends on the engagement and empowerment of the people who live around it. Supporting community heritage groups, enhancing local skills, and creating structured opportunities for ongoing participation will help sustain the stories, traditions, and identities that define the Lough's cultural landscape. By encouraging stewardship models that cultivate pride of place and reinforce local custodianship, the Plan can ensure that heritage resilience becomes a genuinely shared endeavour.

Appendix 1: Interview Schedule for Statutory Decision-Makers

Interview Theme	Interview Question	Objectives
1. Strategic Value of the HRP	What strategic value does your organisation see in the development of a Heritage Resilience Plan for Lough Neagh? How can it enhance or complement your statutory remit in areas such as environmental protection, conservation, cultural heritage, or community development?	Anchor the conversation in organisational buy-in and perceived alignment with existing mandates.
2. Policy Alignment and Heritage Integration	How can the HRP help bridge gaps across existing environmental, heritage, and planning policies that currently operate in silos around Lough Neagh? Are there specific policy interfaces where this integration is most urgently needed?	Link the HRP to existing frameworks (e.g., EIPNI, LDPs, Climate Act) and identify integration points. Identify structural policy barriers and opportunities for strategic policy revision or legislative innovation.
3. Governance for Resilience	The HRP proposes an integrated governance model, including a Heritage Resilience Partnership Group. What would your agency require—legally, operationally, or politically—to support or co-lead such a platform?	Explore institutional commitment, governance preferences, and resourcing considerations. Clarify institutional appetite for co-management.
4. Heritage at Risk and Priority Setting	Based on your knowledge, what aspects of Lough Neagh's heritage (natural, built, or intangible) are most strategically vulnerable? What leadership role should your organisation play in addressing them? How can the HRP help establish a clear prioritisation mechanism for interventions?	Guide future action plans and validate tools like the Heritage Risk Register or Scorecard. Define agency-specific leadership roles in addressing high-risk areas such as eutrophication or cultural erosion.
5. Climate-Resilient Heritage Futures	How should the HRP position heritage assets, particularly vulnerable cultural landscapes and ecosystems, as core components of regional climate resilience planning? What practical steps would support this shift?	Link HRP to climate adaptation frameworks and promote inclusion of heritage in climate-risk planning. Explore ecosystem-based adaptation within statutory planning approaches.
6. Landscape-Scale Planning and the LNHIZ	The HRP is considering a Lough Neagh Heritage Impact Zone (LNHIZ) to coordinate conservation and planning	Test feasibility and utility of a LNHIZ as a policy overlay within statutory planning frameworks. Position

	spatially. How could this be operationalised through your planning tools or regulatory powers?	councils as system leaders in spatial resilience.
7. Funding Innovation and Strategic Investment	What funding mechanisms should underpin the HRP's implementation, such as co-financing, outcome-based investment, or public/NGO delivery models? What role can your organisation play in mobilising these?	Identify co-funding potential, institutional constraints, and opportunities for systemic funding innovation. Explore pooled resources, resilience funds, and beyond-grant models.
8. Data and Accountability Architecture	The HRP plans to outline a Catchment Data Observatory and Heritage Dashboard. How could your agency contribute to shared monitoring, data governance, and impact evaluation? How could improved data collaboration support evidence-based decision-making?	Support collaborative, evidence-led planning and enhance transparency and cross-agency alignment through shared monitoring systems.
9. Community Stewardship and Institutional Embedding	How can the HRP formalise community engagement and stewardship within your organisation's statutory or operational frameworks? Which models—such as a Stewardship Charter or Living Heritage Register—would you support or co-develop?	Position co-governance and community stewardship as strategic assets. Test commitment to inclusive and participatory heritage resilience approaches.
10. Legacy, Influence, and Long-Term Impact	What would success look like in 10 years if the HRP were fully implemented? What long-term outcomes and institutional legacy should your organisation aim for in fostering a resilient, heritage-rich Lough Neagh?	Surface long-term goals, future aspirations, and alignment with organisational strategic plans to shape a shared vision of legacy and impact.

Section 3

Heritage Resilience Plan for Lough Neagh:

Part 3a

Development of Strategic Objectives and Action Plan

Heritage Resilience Plan for Lough Neagh: A 10-Year Framework for Ecological Recovery, Cultural Renewal, and Community Stewardship

INTRODUCTION

Lough Neagh is one of the most significant cultural and ecological landscapes on the island of Ireland, a place where environmental abundance, complex histories, and distinctive cultural traditions converge to form an irreplaceable heritage asset. As the largest freshwater lake in these islands, its scale alone gives it national and international prominence. Yet it is the depth and diversity of its natural and cultural endowments that make the Lough truly exceptional: its mosaic of wetlands and riparian habitats of international importance, its layered archaeological record stretching from prehistory to the early modern period, its vernacular practices rooted in long-standing relationships between people and place, and its living intangible heritage that continues to evolve across multiple communities. Together, these dimensions create a landscape whose value lies not only in its ecological function or cultural richness, but in the dynamic interconnections between nature, tradition, identity, and livelihood. This integrated heritage landscape is both profoundly local and unmistakably global in its significance.

Despite its significance, Lough Neagh now stands at the centre of a multi-dimensional ecological and cultural crisis. The accelerating pressures of nutrient enrichment, declining water quality, invasive species, habitat fragmentation and climate-induced volatility, have placed the ecological health of the Lough under unprecedented strain. Equally urgent are the cultural and social pressures: the erosion of traditional practices, the fragility of vernacular knowledge systems, the degradation of heritage sites, and the weakening of community cohesion in the face of environmental change and economic uncertainty. These challenges are amplified by persistent governance fragmentation, underinvestment in strategic infrastructure and heritage management, limited coordination across statutory bodies and stakeholder groups, and longstanding ambiguities around responsibility and accountability. What was once a resilient and self-sustaining landscape has become a vulnerable one, where natural and cultural systems are increasingly unable to absorb shocks, adapt to change, or support the wellbeing of the communities that rely upon them.

This Heritage Resilience Plan for Lough Neagh has been developed in direct response to this moment of crisis and possibility. Its purpose is to provide a long-term, integrated approach to repairing the ecological function of the Lough, revitalising its cultural assets, strengthening governance, and empowering communities to participate meaningfully in shaping the future of their landscape. The Plan offers a coordinated, evidence-based, and actionable framework designed to mobilise the collective capacity of statutory authorities, local communities, landowners, NGOs, researchers, and cultural practitioners. It recognises that Lough Neagh cannot be safeguarded through fragmented initiatives or isolated interventions. Instead, it requires a shared vision and a systemic approach, one that honours the complexity of the landscape,

confronts the structural drivers of degradation, and uses resilience as the organising principle for long-term stewardship.

WHAT HERITAGE RESILIENCE MEANS

At the heart of the Plan is the concept of heritage resilience. Heritage resilience refers to the ability of natural, cultural, and social heritage systems to withstand, adapt to, and recover from a wide range of environmental, economic, cultural, and institutional pressures while maintaining their core functions, values, and meanings.

It moves beyond the idea of safeguarding heritage for its own sake; instead, it situates heritage as a living system capable of supporting sustainable futures.

- Ecological heritage resilience means restoring water quality, enhancing biodiversity, and re-establishing the ecological processes that sustain the Lough and its catchment.
- Cultural heritage resilience involves revitalising traditions, protecting built and archaeological heritage, and supporting the intergenerational transmission of local knowledge.
- Social resilience relies on community cohesion, local skills, and inclusive participation in decision making.
- Institutional resilience is achieved through governance arrangements that are transparent, accountable, integrated, and collaborative.

Heritage resilience therefore encompasses environmental, cultural, social, and institutional dimensions, recognising that lasting recovery requires action across all these interconnected systems.

The need for a Plan grounded in heritage resilience is clear. The challenges facing Lough Neagh are not isolated incidents but interconnected symptoms of deeper systemic issues: insufficient governance coherence; the absence of long-term ecological planning; fragmentation across policy areas; limited investment in heritage infrastructure; and a pattern of reactive rather than proactive decision making. The cumulative effect is a landscape whose natural and cultural assets are increasingly exposed to risk, and whose communities lack the tools and support needed to respond effectively. Without decisive, coordinated intervention, the Lough risks entering an ecological and cultural tipping point from which recovery would be slow, expensive, or irreversible. Conversely, with strategic focus and collective action, Lough Neagh has the potential not only to recover but to emerge as a model of integrated, community-led landscape resilience for the island of Ireland and beyond.

HERITAGE RESILIENCE PLAN VISION FOR LOUGH NEAGH

The vision for the Heritage Resilience Plan is to:

‘Create a thriving Lough Neagh landscape where ecological recovery, cultural renewal, and empowered communities form a mutually reinforcing system of resilience’.

In this vision, Lough Neagh is no longer defined by ecological decline or fragmented governance but instead recognised as a place where environmental health, living traditions, and strong local stewardship secure long-term wellbeing for all who depend on its waters and shores. The lake becomes a model of how natural, cultural, built and intangible heritage can drive regeneration rather than be its passive beneficiary. Its landscapes are restored, its stories celebrated, and its communities supported to sustain and reimagine their relationship with place.

This vision places people at the heart of heritage resilience. Communities are not simply consulted but are active co-stewards, shaping decisions, leading projects and carrying forward the knowledge, crafts, and memories that enrich the Lough Neagh identity. Economic opportunities grow through responsible tourism, creative industries, conservation employment, and heritage-linked enterprises. Young people see opportunity and belonging, while older generations feel their traditions valued and carried forward.

Central to the vision is a lake system ecologically revitalised: wetlands and peatlands flourish, inflows run cleaner, biodiversity rebounds and the pressures of climate change are met with nature-based solutions that strengthen the entire catchment. Clear governance frameworks ensure cooperation across councils, agencies, landowners, and communities, bringing coherence to planning, delivery and investment.

By 2035, Lough Neagh emerges as a resilient cultural-ecological region, recognised nationally and internationally for how heritage can anchor climate adaptation, inspire innovation, and strengthen community identity. The lake is understood not simply as a physical landscape but as a living, dynamic heritage system and one that future generations inherit with pride, health, and possibility.

HERITAGE RESILIENCE PLAN MISSION FOR LOUGH NEAGH

The mission of the Heritage Resilience Plan is to:

‘Inspire and enable a new era of ecological recovery, cultural vibrancy and community leadership at Lough Neagh. Through collaborative action and a shared commitment to heritage, the Plan charts a pathway towards a healthier landscape, stronger communities and a resilient legacy for future generations by integrating ecological restoration, cultural renewal and climate adaptation into one coherent approach for safeguarding Lough Neagh.’

The mission commits partners to working collaboratively across boundaries, sectors, and traditions, recognising that the health of Lough Neagh depends on the combined stewardship of everyone who lives around, works with, or cares for the landscape. It aims to shift the region from reactive management to proactive, long-term resilience building. It seeks not only to repair environmental damage, but also to strengthen the social, cultural, and socio-economic foundations that support sustainable recovery.

Heritage. In its fullest sense, acts as the connective tissue binding ecological health, cultural identity and community wellbeing. Through this mission, heritage becomes a driver of change: informing planning decisions, shaping investment priorities, and guiding the design of climate adaptation measures.

To realise this mission, governance must become integrated and transparent. Shared data, coordinated monitoring, and joint action planning provide the structural backbone. Communities are empowered with the skills, knowledge and resources to lead stewardship activities, while policy and regulatory systems are aligned to support cross-boundary ecological restoration and heritage protection. Training, capacity building and youth pathways ensure the next generation is equipped to carry the mission forward. The mission also emphasises inclusive development, promoting heritage-linked enterprises that support livelihoods while safeguarding cultural and environmental values. Nature-based solutions and climate-smart practices are embedded across land management, tourism, conservation, and cultural programming. Ultimately, the mission is to secure the long-term resilience of Lough Neagh not through isolated interventions, but through a holistic approach that recognises heritage as both the foundation and the future of the landscape. This mission unites ecological recovery, cultural vitality, and community leadership into one shared path forward.

HERITAGE RESILIENCE GOALS

The Plan is structured around five Heritage Resilience Goals, each designed as a hybrid of thematic priority and measurable strategic intent. These Goals form the backbone of a ten-year plan aimed at restoring a resilient, heritage-rich Lough Neagh.



1. Restoring Water Quality and Ecological Integrity Across the Lough Neagh Catchment – establishing the ecological foundations necessary for long-term recovery.

2. Safeguarding and Revitalising Built, Cultural, and Intangible Heritage – ensuring that heritage is protected, animated, and passed on.
3. Establishing an Integrated, Shared-Governance Framework for Heritage and Environmental Stewardship – enabling coordinated leadership and accountability.
4. Embedding Community Stewardship, Skills, and Participation – placing communities at the heart of resilience-building.
5. Ensuring Climate-Adaptive, Future-Proofed Heritage Landscapes – preparing the Lough for accelerating climate impacts through nature-based and culturally grounded approaches.

These Goals are interdependent. Ecological restoration creates opportunities for cultural renewal; strong governance underpins environmental improvements; empowered communities strengthen strategic interventions; and climate adaptation provides security for natural and cultural systems alike.

IDENTIFICATION OF GOALS, OBJECTIVES AND ACTIONS

The Goals, Objectives, and Actions outlined in this Plan were identified through a comprehensive and multi-layered process of research, evaluation, benchmarking, and stakeholder engagement. This process ensures that the Strategy is evidence-based, robust, and reflective of the complexities of the Lough Neagh landscape.



Desk-Based Research: A wide-ranging review of existing literature, policy frameworks, legislative instruments, heritage management strategies, environmental reports, governance models, and conservation plans formed the analytical foundation for the Strategy.

Risk and Vulnerability Analysis: A structured assessment of Lough Neagh’s ecological, cultural, social, and governance vulnerabilities was undertaken. This analysis identified key pressures such as nutrient loading, habitat fragmentation, cultural discontinuity, environmental governance gaps, and climate impacts, and mapped the ways these pressures intersect and compound one another.

Policy and Strategic Review: Relevant heritage policies, environmental legislation, catchment management guidelines, and cultural strategies were evaluated to ensure alignment with national, UK-wide, all-island, and international priorities.

Benchmarking Against Case Studies: Examples from across the UK, Ireland, and further afield were examined to identify effective approaches to integrated catchment-scale management, co-governance models, community-led heritage stewardship, and resilience-based planning. These case studies provided models for best practice and illuminated opportunities for adaptation within the specific context of Lough Neagh.

Stakeholder Consultation and Engagement: The Strategy was informed by input from primary, secondary, and tertiary stakeholders, including local community groups, environmental NGOs, cultural practitioners, landowners, local authorities, academic researchers, and statutory agencies. Their insights, lived experiences, and priorities have directly shaped the Goals, Objectives, and recommended Actions.

STRATEGIC GOALS, OBJECTIVES AND ACTIONS

GOAL 1: ECOLOGICAL RESTORATION AND WATER QUALITY RECOVERY AS FOUNDATIONS FOR LANDSCAPE RESILIENCE

The recovery of Lough Neagh's ecological systems is the essential precondition for all other forms of resilience. Without significant improvements to water quality, habitat structure, and ecological function, no cultural, economic, or stewardship initiative can succeed. The Lough's chronic eutrophication, nutrient loading, polluted inflows, and biodiversity declines undermine not only the ecological balance but also tourism potential, cultural practices such as fishing, and the ability of communities to form meaningful connections with the landscape. Ecological deterioration erodes public trust, accelerates cultural dislocation, and weakens the socio-economic fabric surrounding the Lough. Restoring the ecological foundation is therefore not simply an environmental task, rather it is a cultural and community mandate. Resilient ecology sustains eel fishing traditions, supports recreational engagement, improves public health, enhances the viability of heritage-based enterprises, and reinforces a sense of place. This goal anchors the long-term vision by placing ecological integrity at the centre of a holistic resilience strategy.

Strategic Objective 1.1: Reduce nutrient loading and improve water quality across the catchment

Strategic Actions

Sustainable Catchment programme

This action establishes a basin-wide working partnership between farmers, DAERA, NIEA, water utilities, and farming bodies to coordinate nutrient reduction. It develops shared nutrient budgets, identifies priority sub-catchments, and delivers targeted interventions. The programme includes seasonal monitoring and annual reporting to drive accountability and adaptive management. The programme incentivises farmers to adopt low-input, regenerative practices through grants, expert support, and peer-learning groups. It pilots nutrient-efficient systems, soil health improvement plans, and

reduced slurry applications. Demonstration farms showcase economic and environmental benefits, supporting long-term, voluntary agricultural transition.

Wastewater Modernisation and Pollution Compliance Initiative

This action supports water utilities and regulatory bodies to upgrade priority wastewater facilities and strengthen compliance. It includes piloting sensor-based monitoring in key discharge points and coordinating rapid response to pollution events.

Nutrient Trading and Ecosystem Services Pilot Scheme

This pilot researches and develops a market-based system where landowners can generate nutrient-reduction credits by implementing improvements such as buffer strips or wetland creation. Credits can be purchased by organisations required to offset nutrient impacts. The pilot tests governance, verification methods, and financial feasibility, providing a model for long-term scaling.

Lough Neagh Water Quality Transparency Dashboard

This project creates a public-facing platform displaying real-time water quality data from across the catchment. It integrates data from government, researchers, and citizen science initiatives to build trust and understanding. The dashboard supports schools, communities, and visitors in understanding environmental conditions and long-term trends.

Strategic Objective 1.2: Restore degraded wetlands, peatlands, and riparian habitats

Strategic Actions

Lough Neagh Peatland Rewetting and Carbon Recovery Project

This action restores degraded peatland areas using rewetting, bunding, and vegetation recovery to reduce carbon loss and improve hydrological stability. It works with landowners and conservation bodies to secure access, co-design interventions, and monitor carbon outcomes. Demonstration plots showcase climate and biodiversity benefits to wider stakeholders. The programme will target private landowners and existing NGO and departmental landowners via the unmanaged land study by LNP 2023.

Wetland Restoration

This initiative restores wetlands at tributary inflows to act as natural nutrient filters. It involves hydrological design, reedbed establishment, wet woodland and wet grassland management, and community participation in planting and monitoring. The restored wetlands improve water quality while creating habitats for birds, invertebrates and amphibians. The action also covers management of the Loughs Islands.

Riparian Buffer and Riverbank Regeneration Scheme

This action works with landowners, farmers and NGOs to establish riparian buffer strips, stabilise riverbanks, and plant native tree along the catchment rivers. It reduces diffuse pollution and nutrient inflow while improving ecological connectivity. Incentives and tailored guidance encourage widespread voluntary participation.

Nature Recovery Networks at a Landscape Scale

This action identifies and creates a mosaic of reedbeds, wet meadows, peat-forming habitats, and riparian woodland along a selected shoreline or inflow areas or islands on the Lough. It integrates ecological design with community engagement and education. The site becomes a model for multifunctional habitat restoration adaptable across the catchment.

Community Wetland Action Week

This week-long programme mobilises schools, volunteers, angling groups, and local organisations in planting, invasive removal, and habitat maintenance. Expert-led workshops introduce participants to wetland ecology and monitoring techniques. The event builds long-term community ownership of restored habitats.

Species Focussed Restoration

The DAERA Priority Species List and Habitats NI has identified a number of birds threatened or priority bird species such as

- Curlew (*Numenius arquata*)
- Corncrake (*Crex crex*)
- Hen Harrier (*Circus cyaneus*)
- Barn Owl (*Tyto alba*)
- Yellowhammer (*Emberiza citrinella*)
- Lapwing (*Vanellus vanellus*)
- Redshank (*Tringa totanus*)
- Tree Sparrow (*Passer montanus*)
- Twite (*Linaria flavirostris*)
- Woodcock (*Scolopax rusticola*)

The Resilience Plan will continue to focus on the Irish wetland breeding birds such as Curlew and Lapwing but will also now include tree sparrow and Barn Owl and identify action programmes in specific areas around the Lough working closely with Councils.

The DAERA Priority Species List and Habitats NI) also provides a list of endangered mammals.

- Irish Hare (*Lepus timidus hibernicus*)
- Red Squirrel (*Sciurus vulgaris*)
- Pine Marten (*Martes martes*)
- Otter (*Lutra lutra*)
- Leisler's Bat (*Nyctalus leisleri*)
- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Daubenton's Bat (*Myotis daubentonii*)

The Resilience Plan will focus on the preservation of endangered bats by the provision of extensive amounts of bat boxes in targeted areas.

Land Purchase Programme

Working with the estate agents, landowners, National Trust, NI Water and the Woodland Trust and relevant Departments a list of priority land transfers and purchases will be drawn up in areas around proposed Nature Recovery Networks and these will act as hubs for these networked sites. Ownership will create a greater flexibility to carry out direct conservation work on the ground.

Ownership of the bed and soil of Lough Neagh

The Lough Neagh Partnership has been working for over two years to develop a heritage resilience plan but to also work with Shaftesbury estates to explore the possible purchase of the bed and soil of Lough Neagh. In parallel to the resilience Plan a report will be provided identifying the best model to be set up to possibly purchase the bed and soil of the Lough and a road map on how to take the process forward. The Lough Neagh Partnership would intend to continue working with Shaftesbury Estates and the Lough Neagh Development Trust to examine and find funding for the possible due diligence process that is needed together with the legal conveyancing transfer requirements.

[Strategic Objective 1.3: Manage invasive species and enhance biodiversity resilience](#)

Strategic Actions

Invasive Species Rapid Response Taskforce

This action establishes a coordinated taskforce involving councils, NIEA, NGOs, and trained volunteers to detect and control invasive species. It maps hotspots, undertakes early-removal campaigns, and pilots new control techniques. Public alerts and education campaigns help limit spread.

Volunteer Invasive Species Ranger Training

The action trains community members, anglers, and boating users to identify and report invasive species. Practical field sessions develop safe removal skills. A digital reporting tool ensures data is channelled directly to authorities for rapid action.

Native Species Recovery and Reintroduction Programme

This initiative restores populations of selected vulnerable species through habitat improvement, breeding support, and carefully managed reintroductions. Collaboration with universities ensures genetic and ecological suitability. Public engagement campaigns raise awareness of species recovery.

Ecological Monitoring Collaboration with Universities

This academic partnership deploys long-term monitoring equipment, undertakes modelling, and supports student field research across the Lough. Findings inform management of invasive species, biodiversity change, and habitat restoration. The project strengthens evidence-based decision-making.

Lough Neagh Biodiversity Atlas

This project produces a digital, publicly accessible atlas mapping species, habitats, and ecological hotspots. It integrates citizen science observations with formal monitoring data. Schools and community groups use the atlas for education and conservation planning

[Strategic Objective 1.4: Integrate ecological recovery into economic and recreational planning](#)

Strategic Actions

Eco-Sensitivity Assessment for Tourism and Development

Building on Appropriate Assessments, this action creates a standardised tool specifically designed for Lough Neagh for assessing ecological sensitivity of proposed tourism and infrastructure developments. It guides planners and developers to avoid sensitive areas and incorporate mitigation measures. The tool ensures alignment between economic activity and ecological health.

Eco-Tourism Reinvestment Model

This initiative builds a network of eco-tourism providers committed to reinvesting a portion of income into habitat restoration. It develops branding, shared marketing, and certification standards. Revenues support local conservation and community stewardship.

Nature-Based Visitor Experience Programme

This action develops guided experiences such as wetland walks, bird tours, or eel-heritage trips, co-designed with local experts and communities. Experiences highlight the relationship between ecology, culture, and landscape. Income supports local enterprises and restoration projects.

Navigation and Water Recreation Zoning Plan

The aims to address the navigational issues on the Lough and designates zones for boating, angling, wildlife protection, and quiet areas based on ecological sensitivity. It reduces disturbance to key habitats and species while enabling sustainable recreation. Signage, maps, and stakeholder engagement ensure compliance. This will significantly increase access to two main river systems, the Blackwater and the Upper Bann providing up to 30 km of new navigable water.

Sustainable Business Accreditation and Support Scheme

This initiative helps local businesses adopt environmentally responsible practices through training, assessments, and certification. It encourages pollution reduction, energy efficiency, and ecological awareness. Accredited businesses gain marketing support and preferential procurement opportunities.

Industrial Nature Networks

This action will target existing businesses on the shores of Lough Neagh that have existing industrial zoned land or used peat extraction zones or sand depot sites or quarries that could be improved for biodiversity and high nature value.

GOAL 2: SAFEGUARDING AND REVITALISING BUILT, CULTURAL, AND INTANGIBLE HERITAGE ACROSS THE LOUGH NEAGH LANDSCAPE

Lough Neagh possesses an extraordinarily layered cultural landscape composed of archaeological sites, vernacular buildings, industrial remnants, sacred places, artisanal skills, oral traditions, and seasonal customs. Yet much of this heritage is under-documented, undervalued, or at risk. Built structures suffer from neglect, climate-induced deterioration, and limited adaptive reuse. Intangible heritage including stories, skills, rituals, and ecological knowledge, faces rapid erosion as generational continuity weakens. Safeguarding and revitalising these heritage assets are not only a matter of preservation; it is fundamental to community identity, cultural vitality, and sustainable economic development. A revitalised cultural landscape enriches tourism experiences, strengthens local pride, supports intergenerational connections, and provides meaningful, place-based livelihoods. Integrating cultural heritage into land-use planning, education, and economic strategy ensures that cultural continuity becomes a driver of resilience rather than an afterthought. This goal positions cultural and built heritage as an essential pillar within a wider ecological, social, and economic transformation.

Strategic Objective 2.1: Protect and enhance vulnerable built and archaeological heritage

Strategic Actions

Lough Neagh Heritage-at-Risk Survey and Register

This action undertakes a comprehensive survey of vulnerable heritage assets across the Lough Neagh landscape, including built structures, industrial remnants, military buildings and archaeological features. It develops a digital register with risk categories, condition ratings, and recommended interventions. The register informs prioritisation for investment, conservation action, and adaptive reuse opportunities.

Community Conservation Micro-Grant Scheme

This initiative provides signposting to small grants to owners or community groups to address urgent conservation needs for buildings, monuments, and historic features. It includes technical advice clinics and on-site support to ensure works meet conservation standards. The scheme encourages proactive care, preventing further deterioration.

Area-Based Heritage Conservation Plans

This action develops conservation plans for priority areas such as historic shoreline settlements, industrial and military landscapes, or archaeological clusters. Plans include detailed assessments, community consultation, and design guidance. They

align conservation aims with local development frameworks, guiding future investment decisions.

Heritage-Sensitive Planning Guidance Toolkit

The project produces a toolkit for planners, architects, and developers to integrate heritage considerations into planning applications. It includes checklists, case studies, and guidelines for appropriate design interventions. Training workshops ensure consistent application across all councils surrounding the Lough.

Adaptive Reuse Pathfinder Programme

This initiative identifies vulnerable heritage buildings suitable for adaptive reuse as community hubs, cultural spaces, or social enterprises. It matches owners with designers, funders, and user groups to deliver pilot projects. Each pilot demonstrates how heritage assets can be repurposed to meet contemporary community needs.

Strategic Objective 2.2: Safeguard and revitalise intangible and vernacular heritage

Strategic Actions

Lough Neagh Living Heritage Register

This action documents oral histories, place names, crafts, music, folklore, and ecological knowledge unique to the Lough Neagh region. It engages elders, tradition-bearers, and cultural groups through interviews and workshops. The register becomes a foundational resource for education, cultural programming, and future heritage initiatives.

Traditional Skills Apprenticeship and Training Programme

This apprenticeship network trains young people and career changers in traditional crafts such as boatbuilding, net-making, thatching, and vernacular carpentry. Master practitioners lead hands-on workshops supported by bursaries and toolkits. Participants gain pathways into heritage construction, conservation projects, and artisan enterprise.

Intergenerational Storytelling and Memory Circles

This action brings together elders, schools, and community groups to share stories, songs, and local knowledge in structured storytelling circles. Sessions are recorded to create a digital archive. The initiative strengthens cultural continuity and fosters cross-generational connection.

Lough Neagh Cultural Tourism Integration Project

This initiative incorporates folklore, eel fishing traditions, historical narratives, and local crafts into visitor experiences. It supports businesses and guides to embed cultural storytelling within tours and activities. The project enhances cultural visibility while generating income for local practitioners.

Lough Neagh Heritage and Tradition Festival

This festival showcases music, crafts, food traditions, boat displays, and performances rooted in the cultural identity of the Lough. It rotates between shoreline communities yearly to ensure inclusivity. The festival strengthens regional pride and provides a platform for tradition-bearers and artisans

Strategic Objective 2.3: Enhance interpretation, education, and cultural tourism

Strategic Actions

Lough Neagh Thematic Heritage Trail Network

This action develops a suite of interlinked trails - industrial, ecological, mythological, and archaeological - around the Lough. Trails include interpretive signage, digital media, and community-led storytelling elements. The network provides a unified visitor experience while showcasing local heritage diversity.

Digital Heritage Interpretation and AR Experience Hub

This initiative creates immersive digital interpretation tools such as augmented reality overlays, audio guides, and interactive maps. Visitors can explore historical landscapes, folklore tales, and archaeological features through mobile devices. Local creatives collaborate on content to ensure authenticity.

Artist–Tradition Bearer Creative Interpretation Programme

This project pairs local artists with cultural practitioners and knowledge-holders to co-create interpretive artworks and installations. Outputs may include murals, sculptures, films, or performances rooted in local stories. Installations are placed in visitor hubs, trails, and community spaces.

Community Micro-Interpretation Centres

This project develops small-scale interpretive centres or “heritage micro-hubs” in strategic shoreline communities. Hubs showcase local stories, craft demonstrations, and place-based exhibitions. They provide focal points for visitors and anchor heritage-led regeneration.

Schools and Education Heritage Integration Scheme

This initiative embeds local heritage into school curricula through class modules, site visits, creative projects, and teacher training. It strengthens children’s connection to their local environment and identity. Schools partner with heritage groups to deliver co-designed learning experiences.

Strategic Objective 2.4: Strengthen partnerships to support cultural and built heritage

Strategic Actions

Heritage Partnership Forum for Lough Neagh

This action establishes a formal forum bringing together councils, Historic Environment Division, NGOs, researchers, and community groups. The forum coordinates joint

priorities, shares data, and develops collaborative projects. It ensures heritage conservation is strategically aligned across the region.

Shared Stewardship Agreements for Key Heritage Sites

This initiative pilot's stewardship agreements where community organisations jointly manage heritage assets with councils or landowners. Agreements set out roles, maintenance plans, and access arrangements. The model strengthens community ownership and reduces the burden on public bodies.

Community-Led Conservation Co-Design Workshops

This action delivers workshops enabling local people to co-design conservation interventions for buildings, monuments, or cultural landscapes. Experts translate community input into conservation plans. The process builds trust and ensures that heritage interventions reflect local priorities.

Integrated Heritage–Tourism–Climate Action Alignment Project

This action ensures that heritage, tourism development, and climate adaptation strategies are fully aligned. Cross-sector task groups review policies, identify synergies, and produce integrated action plans. It strengthens the consistency and long-term coherence of regional planning.

Cross-Sector Cultural Heritage Working Group

This working group convenes stakeholders from arts, heritage, environment, tourism, and academia to coordinate cultural initiatives. It supports collaborative funding bids, shared programming calendars, and integrated marketing. The group enhances partnership culture and avoids duplication.

GOAL 3: CREATING AN INTEGRATED, COLLABORATIVE GOVERNANCE FRAMEWORK FOR HERITAGE, ENVIRONMENT, AND CLIMATE ACTION

Lough Neagh suffers from one of the most fragmented governance environments in Northern Ireland. Responsibilities for water, planning, cultural heritage, economic development, agriculture, community engagement, environmental enforcement, and climate adaptation are dispersed across multiple departments and councils, with no statutory basin-wide authority to coordinate or direct action. This fragmentation undermines effectiveness, slows progress, and creates public confusion. A shared governance framework is essential to deliver coherent, long-term resilience. Integrated governance strengthens accountability, ensures consistent planning, aligns funding, and fosters collaboration across statutory bodies, NGOs, communities, and businesses. It enables the Lough to be managed as a connected landscape rather than as discrete administrative units. This goal proposes working strongly with the Forever Lough Neagh Group and integrating this resilience plan with the Forever Lough Neagh Recovery Road Map plan and creating and overseeing a new governance framework, creating the structural foundation necessary for collective action, data integration, and long-term resilience planning.

Strategic Objective 3.1: Establish a Lough Neagh Heritage and Environmental Partnership Framework

Strategic Actions

Resilience Plan Partnership Establishment

This action forms a partnership composed of councils, governmental agencies, NGOs, landowner representatives, and community groups. A shared governance charter, decision-making framework, and operating procedures are co-developed. Regular multi-agency meetings and working groups ensure coordinated delivery of priority actions.

Shared Governance Strategy and Operating Protocols with Forever Lough Neagh

This initiative produces a unified partnership strategy outlining responsibilities, collaborative workflows, and cross-sector priorities. Standard protocols for conflict resolution, information sharing, and joint project management are adopted. The framework supports clarity and accountability across all partners.

Thematic Sub-Committee Coordination Programme

This project establishes specialist sub-committees on ecology, heritage, climate, community engagement, and tourism. Each group develops action plans, shares technical expertise, and reports into the overarching partnership. The structure enables coordinated delivery while retaining sector-specific depth.

Annual Multi-Agency Action Plan Development Project

This initiative produces an annual shared action plan identifying key project, leads, milestones, and resourcing requirements. Collaborative workshops ensure priorities are agreed across all partners. The plan becomes the central tool for aligning work programmes and measuring progress.

Lough Neagh Partnership Public Reporting and Transparency Initiative

This project publishes annual public-facing reports summarising progress, ecological trends, heritage investments, and partnership achievements. Reports are accompanied by infographics, short films, and community briefings. Increased transparency builds trust and supports stakeholder engagement.

Strategic Objective 3.2: Develop shared data, monitoring, and accountability systems

Strategic Actions

Catchment Data Observatory

This initiative creates a centralised digital platform storing ecological, heritage, climate, and socio-economic data relevant to Lough Neagh. It integrates information from agencies, councils, universities, and citizen scientists. The Observatory supports evidence-based decision-making and long-term monitoring.

Open-Access Heritage and Environment Dashboard

The project produces a user-friendly dashboard displaying indicators such as water quality, biodiversity status, heritage conditions, and community engagement metrics. Interactive visualisations enable public, academic, and government users to explore trends. Transparency strengthens accountability and understanding.

Standardised Resilience Indicator Development

This initiative develops consistent indicators for ecological integrity, heritage condition, stewardship participation, and climate resilience. Workshops with experts ensure scientific robustness and practical use in reporting. Indicators become the basis for monitoring progress across all partnership activities.

Cross-Agency Data Sharing Agreement

This action establishes formal agreements that enable secure, ethical sharing of data between councils, agencies, researchers, and NGOs. Protocols define responsibilities, data governance, and quality assurance standards. Shared datasets reduce duplication and improve coordination.

Citizen Science Integration Programme

This initiative builds a system for incorporating data from community monitoring such as species sightings, water sampling, and heritage condition reporting into official datasets. Training and toolkits support volunteers to collect reliable data. The programme enhances public participation and expands monitoring coverage.

[Strategic Objective 3.3: Improve alignment of policy, planning, and regulatory systems](#)

Strategic Actions

Heritage Resilience Integration in Local Development Plans

This action supports councils to embed heritage, landscape sensitivity, and resilience indicators into Local Development Plans. It includes technical guidance, workshops, and cross-council policy alignment sessions. Integrated planning ensures a consistent approach to landscape-scale protection.

Cross-Council Planning Harmonisation Initiative

This initiative develops shared planning policies across the councils bordering Lough Neagh to manage cross-boundary impacts. Joint policy statements, design standards, and environmental criteria are developed collaboratively. Harmonisation reduces inconsistency and strengthens landscape-scale planning.

[Strategic Objective 3.4: Strengthen funding integration, innovation, and long-term investment](#)

Strategic Actions

Lough Neagh Resilience Fund Development

This action establishes a multi-source funding pot combining contributions from councils, DAERA, Forever Lough Neagh Recovery Road Map, other government agencies, philanthropy, and grants. The fund supports cross-cutting heritage and environmental projects with measurable outcomes. A governance board oversees allocation, transparency, and annual reporting.

Blended Finance and Social Investment Exploration Initiative

This initiative investigates innovative funding models such as green bonds, social finance, and philanthropic investment. Feasibility studies and pilot projects test the potential for large-scale restoration financing. Findings guide long-term investment strategies and unlock new capital.

Joint Funding Bid Coordination

This project assembles cross-sector teams to co-develop high-quality funding applications to national and international programmes. It provides technical support, bid-writing expertise, and partnership coordination. Joint applications increase competitiveness and attract larger investments.

Community Benefit-Focused Heritage Grants Programme

This initiative supports community groups to access funding for heritage stewardship, built heritage repairs, and cultural programming. It prioritises projects with measurable social and environmental outcomes. Capacity-building workshops help applicants navigate funding processes.

Non Farming Outcome-Based Payment Pilot for Ecological Improvement

This action tests a model where non farming landowners receive payments based on verified improvements in nutrient reduction, biodiversity, or habitat condition. Monitoring protocols ensure transparency and credibility. If successful, the pilot informs future catchment-wide schemes.

Good Friday Agreement

It is important to raise the issue that Lough Neagh was never been an integrated part of the Good Friday Agreement and that this Northern Ireland political legacy has never been addressed. There should be a formal lobbying by Forever Lough Neagh of MLAS and the North South Ministerial Council to raise the issue and expand the remit of Waterways Ireland to include Lough Neagh.

GOAL 4: EMBEDDING COMMUNITY STEWARDSHIP, PARTICIPATION, AND SKILLS DEVELOPMENT IN HERITAGE AND LANDSCAPE MANAGEMENT

Communities around Lough Neagh possess generations of ecological knowledge, cultural insight, and resilient traditions that form the living identity of the landscape. Yet, despite this wealth of knowledge, community groups often lack resources, structured support, or pathways to influence decision-making. Long-term resilience demands that communities become active co-stewards, not passive consultees. Embedding community participation within governance, monitoring, heritage

management, and economic development strengthens social cohesion, builds trust, and fosters a shared sense of ownership. Furthermore, developing skills in conservation, interpretation, monitoring, and nature-based enterprise offers new livelihood opportunities. This goal emphasises the importance of intergenerational learning, local capacity building, and community-led action. By empowering communities to lead heritage restoration, stewardship, and cultural revival, Lough Neagh becomes not just a place to be protected but a landscape shaped and cherished by those who call it home.

Strategic Objective 4.1: Build community capacity for heritage stewardship

Strategic Actions

Community Heritage Skills Training Academy

This action creates a training academy offering practical workshops in conservation skills, ecological monitoring, oral history collection, and community mapping. Delivered through local hubs, it partners with experts to ensure high-quality instruction. Participants become a skilled volunteer base for stewardship projects across the Lough.

Local Heritage Forums Network

This initiative establishes heritage forums in each council area, enabling local groups to coordinate activities, share knowledge, and develop joint projects. Forums convene quarterly and feed into wider partnership structures. The network strengthens collaboration and amplifies community voices.

Micro-Grants for Community Stewardship Projects

The action offers small, accessible grants for community-led initiatives such as shoreline clean-ups, heritage training, invasive-species removal, or oral-history recording. Technical support is provided to ensure good project design and heritage sensitivity. Micro-grants empower grassroots action and foster local pride.

Youth Heritage Leadership Pathway

This action builds a pathway combining mentoring, skills training, volunteering, and involvement in decision-making forums. It targets young people across shoreline communities, helping them develop leadership and stewardship skills. Participants support local projects and act as youth ambassadors.

Strategic Objective 4.2: Institutionalise community participation in governance

Strategic Actions.

Annual Community Heritage Assembly

This event brings together community groups, councils, agencies, and researchers to review progress, discuss priorities, and shape upcoming action plans. Assemblies rotate across shoreline towns and include workshops, site visits, and public discussions. The Assembly becomes a flagship tool for participatory governance.

Community Stewardship Charter Development Project

This action co-develops a charter outlining shared values, responsibilities, and expectations for community involvement in heritage stewardship. It is drafted through workshops and endorsed by councils, agencies, and groups. The charter guides future collaboration and strengthens trust.

Lough Neagh Citizens' Assembly

Work closely with the Lough Neagh Citizens Assembly launched in 2025 to build local public confidence in how the Lough is managed, find wider consensus and a wider voice to the Lough.

Rights of Nature

Examine the potential for a pilot area to become a Rights of Nature region . Work closely with a local council planning authority, QUB and the Earth Law Centre. Also draw up a paper on the possibility of transferring rights to the wider landscape in the long term

[Strategic Objective 4.3: Support community-led cultural revitalisation and place-making](#)

Strategic Actions

Community Cultural Festivals Seed Fund

This action provides seed funding and organisational support for local festivals that celebrate crafts, food traditions, ecological heritage, and local stories. Events are co-designed with residents and held in community-led venues. Festivals build identity, attract visitors, and strengthen local networks.

Co-Designed Heritage Trails and Placemaking Installations

This action helps communities design local trails, sculptures, murals, or interpretive signs reflecting their cultural stories. Collaborative workshops ensure authenticity and cultural sensitivity. Installations enhance public space while expressing community identity.

Schools and Community Hub Intergenerational Learning Programme

This project links schools with elder community members to share ecological knowledge, crafts, and local history. Activities include storytelling, craft demonstrations, environmental monitoring, and collaborative art. The programme strengthens intergenerational relationships and preserves cultural continuity

[Strategic Objective 4.4: Enhance local economic opportunities linked to heritage resilience](#)

Strategic Actions

Heritage-Based Local Enterprise Accelerator

This action supports new and existing enterprises rooted in cultural and ecological heritage, such as guiding, craft production, and eco-tourism. Entrepreneurs receive mentoring, marketing support, and micro-grants. The accelerator fosters jobs that reinforce local heritage.

Training in Heritage Tourism, Guiding, and Craft Enterprise

This initiative provides structured training for individuals seeking careers in heritage guiding interpretation, traditional craft production, or nature-based tourism. Training includes business planning, customer experience, and market development. Graduates gain accreditation and access to promotional networks.

Heritage Product and Experience Branding Support Programme

This initiative develops a unified “Lough Neagh Heritage” brand for products, crafts, experiences, and tours. It includes marketing assets, packaging design support, and collaborative promotion. The brand increases visibility, consumer trust, and value for local enterprises.

Business and Heritage Officer

Employ an officer and develop strong linkages between local businesses and develop specific sponsorship arrangements to carry out heritage protection site projects with on the business’s sites or on wider strategic projects. Attract sponsorship and resilience funds for a wider heritage resilience pot of funding

Bird Watching Stations

This action will build on preparation and planning work already carried out by the Partnership on the development of a number of strategic bird watching stations that also act as community hubs for small community and environmental groups. This will increase participation of local people in the management of new local environmental facilities that will connect with more local people. It will also help broaden the image of Lough Neagh as a place where people with different interests—including birdwatchers, conservationists and the wildfowling community—can share an appreciation of its birdlife and work together to support the sustainable management and protection of its habitats and species.

GOAL 5: ENSURING CLIMATE-ADAPTIVE AND FUTURE-PROOFED HERITAGE LANDSCAPES THROUGH NATURE-BASED AND CULTURAL RESILIENCE APPROACHES

Climate change represents one of the most significant long-term threats to both the ecological and cultural fabric of Lough Neagh. Rising temperatures, altered precipitation patterns, increased algal blooms, erosion, and extreme weather events place stress on habitats, built heritage, vernacular structures, and traditional livelihoods. A climate-adaptive approach must integrate scientific evidence, community knowledge, and heritage sensitivity. Protecting the Lough’s future depends on embedding adaptation across planning, governance, land management, and heritage conservation. Nature-based solutions including peatland restoration, riparian buffers, and floodplain reconnection offer multiple co-benefits including carbon storage, water buffering, and cultural landscape preservation. Climate-proofing heritage infrastructure and supporting adaptive reuse strengthens resilience. This goal ensures that climate adaptation is not an add-on but a core principle shaping every dimension of the heritage landscape. Through an integrated climate-heritage

approach, Lough Neagh can become a national exemplar of climate-resilient cultural environmental management.

[Strategic Objective 5.1: Integrate climate adaptation into heritage planning and management](#)

Strategic Actions

Climate Risk Assessment for Priority Heritage Assets

This action undertakes climate risk assessments for key built, cultural, and archaeological sites around Lough Neagh. Assessments consider flooding, erosion, temperature impacts, and structural vulnerability. Outputs guide conservation priorities and inform climate-proofing interventions.

Climate-Responsive Conservation Practitioner Training

This action delivers specialised training for conservation professionals on adapting heritage buildings and sites to withstand climate pressures. It includes technical modules on materials, moisture management, and landscape buffering. Trainees gain practical tools for implementing climate-smart conservation.

Climate-Proofing Guidance for Built and Archaeological Heritage

This initiative produces technical guidance on protective interventions, such as drainage upgrades, shoreline stabilisation, and microclimate management. Illustrated case studies demonstrate how resilience can be improved without compromising heritage value. Planners and practitioners use the guide to inform decision-making.

[Strategic Objective 5.2: Expand nature-based solutions that support climate mitigation and adaptation](#)

Strategic Actions (Linked to Obj. 1.2)

Peatland Carbon and Hydrology Restoration Programme

This action restores carbon-rich peatlands through rewetting, bunding, and revegetation, improving resilience to drought and reducing wildfire risk. It measures carbon benefits and hydrological impact over time. Restored peatlands contribute to climate mitigation and water buffering.

Riparian Woodland and River Naturalisation Scheme

This project plants riparian woodlands and re-meanders selected tributaries to stabilise banks, improve shade cover, and support ecological resilience. Naturalised channels reduce flood peaks and enhance habitat diversity. Community planting days encourage wider engagement.

Nature-Based Solutions in Tourism and Infrastructure Planning

This initiative integrates nature-based solutions such as green roofs, bioswales, and natural buffers into new tourism facilities, trails, and public infrastructure. It demonstrates how climate resilience and visitor experience can be aligned. Pilot sites serve as demonstration models for the wider region.

Nature-Based Solutions Demonstration Sites Network

This action creates a network of demonstration sites showcasing peatland restoration, wetland expansion, wet grassland and wet woodland management, and climate-adaptive shoreline design. Interpretive displays and guided tours explain the science and benefits. The network supports public education and professional training.

Strategic Objective 5.3: Enhance climate literacy and public awareness

Strategic Actions

Climate–Heritage Schools Education Programme

This action integrates climate change and heritage resilience into school curricula through classroom modules, field trips, and hands-on conservation activities. Teachers receive training and resources. The programme builds early awareness and stewardship among young people.

Local Climate Resilience Media Campaign

This project develops short films, social media content, and radio features showcasing community resilience stories, restoration initiatives, and climate challenges. The campaign promotes practical actions residents can take. Media content encourages widespread public engagement.

Climate Change Citizen Science Network

This project trains community volunteers to monitor climate-linked indicators such as shoreline habitat change, seasonal changes, species movement, and flood patterns. Data feeds into regional adaptation planning. The network broadens public participation in climate science.

Strategic Objective 5.4: Support adaptive, resilient economic and cultural practices

Strategic Actions

Climate-Smart Farming Transition Programme

This project supports farmers to implement climate-resilient practices including soil regeneration, water retention, carbon sequestration, and drought-resistant cropping. Demonstration farms and tailored advisory services guide transitions. Economic incentives encourage long-term adoption.

Adaptive Innovation in Fishing and Water-Based Industries

This initiative supports eel fishers, boating operators, and aquaculture enterprises to adapt to changing water temperatures, species shifts, and water quality conditions. Innovations may include gear modifications, seasonal adjustments, or diversification. Resilience planning strengthens long-term viability.

Cross-Sector Climate-Smart Economic Transition Working Group

This working group brings together heritage, tourism, agriculture, fisheries, and local businesses to co-develop climate-smart transition strategies. Collaborative planning

identifies risks, opportunities, and shared solutions. The group supports coordinated economic resilience across the region.

GOVERNANCE AND MANAGEMENT FRAMEWORK

Effective governance is fundamental to delivering the Heritage Resilience Plan for Lough Neagh. The landscape is complex, spanning multiple councils, government departments, agencies, landowners, community groups, economic sectors and heritage interests. No single organisation currently holds the authority, capacity or remit to address the ecological, cultural, social and climate challenges of the lake in isolation. This Governance and Management Framework therefore establish a coordinated, basin-wide, multi-stakeholder model designed to deliver the Resilience Plan in an integrated, transparent and accountable manner. To do this, the framework brings together the strategic architecture of the Heritage Resilience Plan with the strategic, public-facing, stewardship-focused ambition of the “Forever Lough Neagh” model currently being developed by the National Trust and a suite of partners. Rather than treating the two as separate systems, this framework integrates them to form a single governance ecosystem. The Forever Lough Neagh Board provides strategic oversight, long-term direction and public leadership. Lough Neagh Partnership functions as the operational Secretariat, enabling coordination, reporting, data management, funding administration and day-to-day delivery. Thematic sub-committees provide specialist oversight, and Local Delivery Hubs anchor the work in communities.

The result is a governance model that is both vertically aligned, from strategic direction to local implementation, and horizontally integrated across ecology, heritage, community development, climate resilience and economic transition. Through this structure, the Heritage Resilience Plan becomes more than a document: it becomes a shared commitment, a coordinated programme of action and a platform for generating trust, participation and long-term stewardship. This framework ensures that partners work collaboratively, that communities have a meaningful role in stewardship, and that decision-making is guided by evidence, shared learning and long-term commitments.

Roles and Responsibilities of Key Stakeholders

The following sets out the principal actors and their Governance and Management Framework responsibilities in relation to ecological restoration, cultural heritage, built heritage, community capacity building and climate adaptation.

“Forever Lough Neagh” Board

At the centre of the governance framework is the Forever Lough Neagh Board, which provides strategic leadership for the landscape. The Forever Lough Neagh Board will be responsible for setting a renewed strategic ambition for Lough Neagh, structured around ten strategic pillars. The Lough Neagh Heritage Resilience Plan will form one of these core pillars, contributing to the delivery of the overall vision within the ‘Lough Neagh Roadmap to Recovery Plan’ to be developed by Spring 2027.

Conceived as a broad, inclusive and forward-looking alliance, the Board departs from traditional governance models that rely primarily on statutory agencies. Instead, it

brings together senior representatives from councils, government departments, environmental and heritage agencies, community sectors, landowners, the farming and fishing industries, NGOs, tourism and business leaders, youth representatives and academic advisors. This wide-ranging membership ensures that diverse perspectives, knowledge systems and community interests are embedded at the highest level of decision-making. The Board's role extends beyond overseeing implementation; it acts as the long-term custodian of the shared vision for the ecological and cultural renewal of Lough Neagh.

The Board's strategic responsibilities include approving annual and multi-year action plans, setting resilience priorities in response to emerging evidence, and ensuring alignment with regional and national policy frameworks. It champions investment in environmental restoration, heritage revitalisation, community capacity building and climate adaptation, providing the authority and coordination needed to overcome the fragmentation that has historically limited catchment-wide progress. As the highest decision-making forum for the Resilience Plan, the Board ensures that governance remains coherent, integrated and forward-facing. Operating under the Forever Lough Neagh identity strengthens the Board's public legitimacy and visibility. It signals a long-term commitment to the landscape's wellbeing and provides a unifying narrative for residents, visitors and stakeholders. The banner also offers a platform for communicating achievements, marking milestones, mobilising volunteers and attracting philanthropic or corporate investment. Through this model, governance becomes both a technical process grounded in evidence and a civic process rooted in public engagement, ensuring that leadership is shared, inclusive and responsive to the evolving needs of the Lough Neagh landscape.

Lough Neagh Partnership (LNP)

As core key member of the Forever Lough Neagh Board the Lough Neagh Partnership will act as the primary coordinating organisation for the Heritage Resilience Plan, offering leadership, facilitation and hands-on project delivery. Its responsibilities include serving as the operational hub for the implementation of the Strategy, ensuring alignment across councils, agencies and community stakeholders. The Partnership coordinates funding applications, oversees grant programmes and supports blended-finance initiatives. It delivers programmes relating to heritage, ecology, community capacity and climate adaptation, chairs thematic sub-groups and promotes cross-sector collaboration. LNP also provides specialist expertise in heritage, ecology, tourism, community engagement and environmental planning, and leads communication and reporting efforts to stakeholders and the wider public. The Secretariat also serves as the institutional memory of the plan, maintaining continuity as Board membership evolves over time. Through its staff, networks and partnerships, LNP ensures that the Resilience Plan retains momentum, coherence and operational capacity.

Local Councils

Councils play a critical role in planning, place-making, cultural development and regulatory oversight across the Lough Neagh landscape. Their responsibilities will include integrating the Heritage Resilience Goals into Local Development Plans and regeneration strategies, and providing regulatory oversight for planning, heritage

conservation and environmental protection at district level. Councils also lead community engagement, cultural programming and local stewardship initiatives, and are responsible for delivering or supporting community micro-grant schemes and skills development programmes. They facilitate local forums to capture community perspectives and strengthen decision-making, while also maintaining key assets such as trails, parks, cultural centres and local heritage sites, and work collaboratively across council boundaries to support catchment-wide coordination and consistency.

Government Departments

Government departments such as DAERA, NIEA, the Department for Communities' Historic Environment Division, DfI Rivers and others hold statutory responsibilities central to the success of the Resilience Plan. Their duties involve providing regulatory oversight related to environmental quality, water regulation, heritage protection and planning. They support the delivery of major ecological restoration projects, including peatland recovery, wetland restoration and nature-based solutions. These bodies also embed resilience priorities within regional planning, climate adaptation and agricultural policies, while offering technical expertise, regulatory compliance, enforcement and environmental monitoring. They co-fund significant infrastructure, conservation and nature restoration schemes and ensure that departmental initiatives align with the objectives of the Resilience Plan.

NGOs, Environmental Organisations and Community Groups

Non-governmental organisations, environmental bodies and community groups contribute essential local knowledge, carry out practical restoration work and help build community capacity. Their responsibilities encompass co-delivering habitat restoration programmes, managing invasive species and supporting citizen science initiatives. They also lead community-based heritage and cultural activities, engage volunteers, youth groups and local networks in stewardship work, and provide valuable input into monitoring and evidence gathering. These organisations advocate for ecological and cultural resilience priorities and often manage local nature reserves, heritage hubs and community spaces that serve as focal points for community engagement.

Academic Institutions & Research Bodies

Universities and research institutes play a vital role in ensuring that decisions are informed by robust and up-to-date evidence. They contribute ecological, hydrological and heritage research that shapes intervention strategies and lead long-term monitoring programmes, including biodiversity modelling. Academic partners help develop standardised resilience indicators and mentor students and citizen scientists engaged in data collection and analysis. They also evaluate project outcomes and support adaptive management by ensuring that learning is fed back into ongoing planning and delivery.

Landowners, Farmers, Fishers, Businesses and Industry Stakeholders

Private landowners, agricultural interests, fisheries, businesses and industrial stakeholders hold key land and water rights and heavily influence both ecological conditions and the local economy. Their responsibilities include participating in voluntary environmental stewardship schemes and implementing regenerative agricultural practices, nutrient management measures and land-use changes that

support ecological health. They cooperate in habitat restoration, the creation of buffer zones and biodiversity initiatives, while engaging in sustainable tourism, cultural enterprise and place-based branding that reinforces local identity. These stakeholders also contribute to climate adaptation measures and flood resilience actions, and they participate actively in governance forums and community assemblies.

Local Residents, Volunteers and Citizen Scientists

Local residents form the backbone of heritage stewardship across the Lough Neagh landscape. Their responsibilities include participating in monitoring activities, festivals, heritage trails and environmental restoration efforts. They provide invaluable lived knowledge of cultural traditions, place history and landscape change, contributing perspectives that are central to effective heritage management. Residents also engage in the co-design of projects and community planning processes and support local resilience campaigns and stewardship charters that help embed long-term, community-led care for the landscape.

Multi-Stakeholder Governance Structure

The Governance Structure is designed to ensure coherence, transparency, accountability and partnership across the 10-year strategy. The governance architecture can be described as a layered, interconnected system that links strategic leadership with operational delivery and community participation. At the top sits the Forever Lough Neagh Board, charged with long-term direction, policy alignment, major investment decisions and collective accountability. Directly beneath it sits the Lough Neagh Partnership Secretariat, providing coordination, administrative capacity, technical support and continuity. Beneath the Secretariat operate the four thematic sub-committees, each responsible for advancing a major strand of the Resilience Plan: ecological restoration, cultural and built heritage, community stewardship and skills development, and data, monitoring and climate adaptation. Alongside this tier sit delivery partners from councils, agencies, NGOs and academic institutions who provide technical skills, implement projects and gather evidence. At the base of the structure are Local Delivery Hubs and community forums, which act as the democratic and participatory foundation of the plan. Through this system, governance flows from the strategic to the local level while information, experience and community knowledge flow back upward, creating a dynamic and adaptive partnership.

IMPLEMENTATION PLAN

The Implementation Plan sets out how the Lough Neagh Heritage Resilience Plan will be delivered over a ten-year period through coordinated, integrated and adaptive action. It translates the vision, goals and objectives of the strategy into a practical delivery programme supported by a governance structure, a partnership framework and an investment pipeline. Its purpose is to ensure that ecological recovery, cultural renewal, heritage protection, community empowerment and climate resilience are advanced in a systematic and measurable manner. The plan is based on collaborative leadership from the Forever Lough Neagh Board at the strategic level, operational coordination from the Lough Neagh Partnership Secretariat, specialist oversight from Thematic Sub-Committees, and place-based implementation through Local Delivery Hubs and Community Forums. The Implementation Plan sets out the operational

rhythms, roles, responsibilities and monitoring mechanisms required to turn the 10-year strategy into a programme of real-world change. Because resilience is dynamic, the Implementation Plan is designed to be iterative and adaptable. Annual Action Plans will be produced to translate high-level goals into annual priorities, supported by regular monitoring cycles and evaluations in Years 5 and 10. By structuring workflow into clear phases, partners can respond to evolving ecological conditions, emerging research, changing policy environments and community feedback while keeping long-term objectives intact.

Partnership Framework for Delivery

The success of the Resilience Plan depends on a strong, collaborative partnership framework capable of bridging the institutional, ecological and cultural complexities of Lough Neagh. At the apex of the framework sits the Forever Lough Neagh Board, which provides strategic leadership, sets priorities, and ensures alignment across councils and government agencies. The Board's role is to maintain long-term continuity, ensure policy coherence and champion resourcing. Its broad membership ensures that statutory, community, private and civic perspectives inform decisions. Lough Neagh Partnership acts as the Secretariat, responsible for operational coordination, programme management, reporting, funding administration, procurement, and monitoring. It is the central engine that ensures actions move from strategy to delivery, and from delivery into measurable outcomes. Four Thematic Sub-Committees provide technical leadership aligned to the key pillars of the strategy: ecology and water quality, cultural and built heritage, community stewardship and capacity building, and data, climate and monitoring. These committees translate strategy into technical plans, offer expert guidance, and provide risk assessment and quality assurance. Beneath these tiers sit the Local Delivery Hubs, partnerships of community organisations, volunteers, landowners, cultural groups, schools, research institutions and local businesses. These hubs serve as implementation engines for place-based projects, co-design programmes with communities and ensure that local voices shape the delivery process. National agencies, including DAERA, NIEA, HED and others, play vital roles in statutory oversight, environmental regulation, infrastructure delivery and heritage protection. Their technical inputs ensure compliance and help embed the strategy within wider national priorities. This multi-layered partnership framework ensures that strategic leadership, operational coordination, technical expertise and community stewardship function together as a coherent whole.

Implementation Phasing Plan (Years 1–3, 3–7, 7–10)

Implementation of the strategy is phased over ten years to ensure that foundational structures are built first, followed by large-scale delivery and then long-term consolidation. Each phase represents a progression from establishment to expansion to sustainability.

Phase 1: Heritage Fund Application Foundation and Development (Years 1–2)

The first phase focuses on building the institutional structures, governance mechanisms and early demonstration projects needed to establish momentum. It also involves the application for the plan to The National Lottery Heritage Fund.

The Forever Lough Neagh Board is also formally constituted, the Secretariat is expanded, and thematic sub-committees are established. The Forever Lough Neagh Recovery Plan development stage will also run in parallel to the Resilience Plan. Baseline data is collected, monitoring frameworks are developed, more detail is worked up over and initial pilot projects begin. This phase also includes early ecological restoration pilots, heritage asset mapping, community engagement programmes, and the launch of the Forever Lough Neagh brand. Foundational funding streams are secured, including National Lottery Heritage Fund development grants, early government commitments, philanthropic engagement and local match funding. Importantly, Phase 1 establishes confidence, visibility and shared identity.

Phase 2: Expansion and Scaling (Years 3–7)

Phase 2 sees delivery accelerate significantly. Full-scale ecological restoration is rolled out through nutrient reduction interventions, riparian buffers, wetlands, peatland revival and invasive species management. Major heritage projects such as conservation works, interpretation networks, skills training and restoration schemes move to implementation. Community stewardship expands through volunteer networks, heritage hubs and micro-grant programmes. The Catchment Data Observatory becomes fully operational, enabling real-time reporting to feed adaptive management. Economic initiatives, including heritage-led tourism and climate-smart enterprise development, also mature. During this phase, multi-year investment packages and blended finance models are deployed to support large-scale capital and landscape scale projects.

Phase 3: Consolidation and Long-Term Stewardship (Years 7–10)

In the final phase, the emphasis shifts to ensuring long-term resilience, stewardship and self-sustaining governance. Ecological projects transition from active restoration to monitoring and maintenance. Cultural programmes focus on legacy, safeguarding and intergenerational transmission. Community stewardship is strengthened through long-term agreements, business models and governance representation. The Forever Lough Neagh identity becomes embedded as a long-term movement supporting stewardship and fundraising beyond the life of the plan. The final evaluation in Year 10 assesses outcomes, identifies lessons learned and positions the landscape for the next decade of resilience planning.

Implementation Goals, Objectives, Actions, Ownership, Cost and Phasing

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
Goal 1: Ecological Restoration & Water Quality Recovery	1.1 Reduce Nutrient Inflows	The Sustainable Catchment Programme	DAERA	UFU, LNP, Rivers Trusts, Angling Groups	NI Executive Annual budget	1–10
		Wastewater Modernisation and Pollution Compliance Initiative	NI Water	NIEA, Councils	NI Executive Annual budget	1–10
		The Regenerative Farming Accelerator for the Lough Neagh Basin (Linked to Farming with Nature Transition Scheme)	DAERA	UFU, LNP	NI Executive Annual budget	1–7
		Nutrient Trading and Ecosystem Services Pilot Scheme	LNP	DAERA, UFU, Farming community	£45,000	1-7
		Lough Neagh Water Quality Transparency Dashboard	DAERA	AFBI, NIEA, NGOs, Local Communities	£45,000	1-3
	1.2 Restore Priority Habitats	Wetland Restoration Programme	NGOs	NIEA, LNP, Land Owners, RSPB	£750k–£1.5m	2–10
		Lough Neagh Peatland Rewetting and Carbon Recovery Project	NGOs	NIEA, LNP	£750K–£1.5m	3–10
		Riparian Buffer and Riverbank Regeneration Scheme	LNP	NGOs, Landowners	£750k–£1.5m	1–7
		Mosaic Habitat Demonstration Landscape	LNP	NGOs, Landowners, NIEA	£250k–£500k	3–10
		Bi annual Community Wetland Action Week	LNP	NGOs, Councils, Community organisations	£80k	3-10
		Species Focus on breeding wetland birds, barn owls, migratory fish to river systems	LNP	DAERA, RSPB, Councils	£80k	1- 10
		Land Purchase and Transfer Bank	LNP	Businesses, NGOs, DAERA	£300K	1- 10
		Rights of Nature study/Recovery	Earth Law Centre	NGOs, QUB	£5K	3- 10
		River Barrier removal and migratory fish bed enhancement pilot on one main river	DAERA	NGO, s	£200k	3-10
	1.3 Manage invasive species	Invasive Species Response Team	DAERA	NIEA, LNP, NGOs	£250k - £500k	1–10

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
	and enhance biodiversity resilience	Volunteer Invasive Species Ranger Training	LNP	Landowners, Community Groups, NGOs	£45k	1–7
		Catchment-Wide Invasive Mapping & Risk Assessment Programme	LNP	DAERA, NIEA, RSBPNGOs, Universities	£200k	1–5
		Native Species Recovery Programme	NGOs	LNP, NIEA	£150k	2–10
		Lough Neagh Biodiversity Atlas	LNP	NGOs, NIEA, Landowners	£100k	2–5
	1.4 Integrate ecological recovery into economic and recreational planning	Eco-Sensitivity Assessment for Tourism and Development	Councils	LNP, NIEA, DAERA	£70k	1–3
		Eco-Tourism Reinvestment Model	LNP	Tourism NI, Local Businesses, Councils	£20k	2–7
		Nature-Based Visitor Experience Programme	LNP	Community Groups, NGOs, Tour Operators	£20k	1–7
		Navigation and Water Recreation Zoning Plan	LNP	Councils, NIEA, Boating Associations	£400K	1–3
		The Sustainable Business Accreditation and Support Scheme	LNP	Business Owners, Councils	£30k	1–5
		Industrial Nature Network	LNP	Businesses around the Lough	£150	3–7
Goal 2 Safeguarding and Revitalising Built, Cultural, and Intangible Heritage	2.1 Protect and enhance vulnerable built and archaeological heritage	Lough Neagh Heritage-at-Risk Survey and Register	LNP	Councils, HED, Community Organisations	£100k	1–3
		Community Conservation Micro-Grant Scheme	LNP	HED, Councils	£200k	3–7
		Area-Based Heritage Conservation Plans	LNP	Councils, HED, Community Organisations, Landowners	£200k	1–3
		Heritage-Sensitive Planning Guidance Toolkit	LNP	Councils, Planners	£40k	3–7

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
	2.2 Safeguard and revitalise intangible and vernacular heritage	Adaptive Reuse Pathfinder Programme	LNP	Community Groups, Businesses	£50k	3-10
		Lough Neagh Living Heritage Register	LNP	Community Groups, Creative Sector, Councils	£100k	2-7
		Traditional Skills Apprenticeship and Training Programme	LNP	Councils, HED, Heritage Businesses,	£400k	2-6
		Intergenerational Storytelling and Memory Circles	LNP	Community Groups	£50k	2-7
		Lough Neagh Heritage and Tradition Festival	LNP	Community Groups	£60k	3-10
		Lough Neagh Cultural Tourism Integration Project	LNP	Heritage Businesses	£30k	1-3
	2.3 Enhance interpretation, education, and cultural tourism	Lough Neagh Thematic Heritage Trail Network	LNP	Councils, Community Groups	£500k	2-10
		Digital Heritage Interpretation and AR Experience Hub	LNP	Councils	£500k	3-10
		Artist-Tradition Bearer Creative Interpretation Programme	LNP	Community Groups, Local Artists and Cultural Practitioners	£250k	1-7
		Community Micro-Interpretation Centres	LNP	Community Organisations	£200k	3-6
		Schools and Education Heritage Integration Scheme	LNP	Schools	£50k	2-7
	2.4 Strengthen partnerships to support cultural and built heritage	Heritage Partnership Forum for Lough Neagh	Forever Lough Neagh	LNP, NIEA, HED, Councils, NGOs	£10k	1-3
		Shared Stewardship Agreements for Key Heritage Sites	LNP	Councils, Landowners, Community Groups	£10k	2-7
		Community-Led Conservation Co-Design Workshops	LNP	Community Groups	£50k	3-10

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
Goal 3: Integrated, Shared-Governance for Heritage and Environmental Stewardship		Integrated Heritage–Tourism–Climate Action Alignment Project	Forever Lough Neagh	LNP, NIEA, HED, Councils, NGOs	£50k	1-3
		Cross-Sector Cultural Heritage Working Group	Forever Lough Neagh	LNP, NIEA, HED, Councils, NGOs	£50k	1-3
	3.1 Lough Neagh Heritage and Environmental Partnership Framework	Lough Neagh Basin-Wide Partnership Establishment	Forever Lough Neagh	LNP, Councils, governmental agencies, NGOs, landowner representatives, and community groups	£50k	1–10
		Shared Governance Strategy and Operating Protocols Project	Forever Lough Neagh	LNP	£15k	1–3
		Thematic Sub-Committee Coordination Programme	Forever Lough Neagh	LNP, Councils, governmental agencies, NGOs, landowner representatives, and community groups	£10k	1–3
		Annual Multi-Agency Heritage Action Plan Development.	Forever Lough Neagh	LNP, Sub-Committees	£10k	2–10
		Lough Neagh Partnership Public Reporting and Transparency Initiative	Forever Lough Neagh	LNP, Sub-Committees	£50k	2-10
	3.2 Shared data, monitoring, and accountability systems	Catchment Data Observatory	Forever Lough Neagh	DAERA, LNP, Councils, NGOs	£200k	1–10
		Open-Access Heritage and Environment Dashboard	Forever Lough Neagh	DAERA, LNP, Councils, NGOs	£100k	1–10

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
		Standardised Resilience Indicator Development	Forever Lough Neagh	LNP, Councils, governmental agencies, NGOs,	£40k	2–10
		Cross-Agency Data Sharing Agreement	Forever Lough Neagh	LNP, Councils, governmental agencies, NGOs,	£20k	2–10
		Citizen Science Integration Programme	Forever Lough Neagh	LNP, Community Organisations, NGOs	£100K	1-10
	3.3 Improve alignment of policy, planning, and regulatory systems	Heritage Resilience Integration in Local Development Plans	Councils	LNP	£20k	2–10
		Cross-Council Planning Harmonisation Initiative	Councils	LNP	£20k	1–7
		Regional Strategy Alignment Group	Forever Lough Neagh	LNP, Councils, Government Departments	£20k	3–10
	3.4 Strengthen funding integration, innovation, and long-term investment	Lough Neagh Resilience Fund Development	Forever Lough Neagh	LNP, Councils, Governmental Departments, Funders	£10k	3–10
		Blended Finance and Social Investment Exploration Initiative	LNP	Councils, Governmental Departments, Funders	£50k	3–10
		Joint Funding Bid Coordination	Forever Lough Neagh	LNP, Councils, Governmental agencies, NGOs, Community Groups	£50K	3–10
		Community Benefit-Focused Heritage Grants Programme	LNP	Councils, Community Groups	£200k	3–8
		Outcome-Based Payment Pilot for Ecological Improvement	Forever Lough Neagh	LNP, Landowners, DAERA, NGOs,	£300K	3-8
		Good Friday Agreement	Forever Lough Neagh	LNP, Forever Lough Neagh	£0	1- 3

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
Goal 4: Community Stewardship, Skills, and Participation	4.1 Build community capacity for heritage stewardship	Community Heritage Skills Training Academy	LNP	Community Groups	£50k	3–10
		Local Heritage Forums Network	LNP	Councils, Community Groups	£20k	2–10
		Micro-Grants for Community Stewardship Projects	LNP	Councils, Community Groups	£100k	3–10
		Youth Heritage Leadership Pathway	LNP	Community Groups	£50k	1–5
	4.2 Institutionalise community participation in governance	Linkage with LN Citizens Assembly	Forever Lough Neagh	LNP, Councils, Governmental agencies, NGOs, Community Groups	£50k	1–10
		Community Stewardship Charter Development Project	LNP	Community Groups	£10k	1–3
	4.3 Community-led cultural revitalisation and place-making	Community Cultural Festivals Seed Fund	LNP	Councils, Community Groups	£30k	1–3
		Co-Designed Heritage Trails and Placemaking Installations	LNP	Councils, Community Groups	£50k	1–5
		Schools and Community Hub Intergenerational Learning Programme	LNP	Schools, Community Groups	£50k	3–10
	4.4 Enhance local economic opportunities linked to heritage resilience	Heritage-Based Local Enterprise Accelerator	LNP	Businesses	£60k	2–7
		Training in Heritage Tourism, Guiding, and Craft Enterprise	LNP	Councils, Tourism NI, Businesses	£40k	3–10
		Heritage Product and Experience Branding Support Programme.	LNP	Businesses	£20k	2–8
		Business Heritage Officer	LNP	Businesses	£250	3- 10
		Bird Hide Station Community	LNP	Local Communities	£500K	3- 10
Goal 5: Climate-Adaptive and Future-Proofed Heritage Landscapes through Nature-	5.1 Integrate climate adaptation into heritage planning and management	Climate Risk Assessment for Priority Heritage Assets	LNP	HED, Universities	£100k	3–10
		Climate-Responsive Conservation Practitioner Training	LNP	Councils, Architects, Planners	£15k	2–7
		Climate-Proofing Guidance for Built and Archaeological Heritage	LNP	HED, Councils, NGOs	£10k	1–10

Strategic Goal	Strategic Objective	Action	Lead	Partners	Indicative Cost	Phasing
Based and Cultural Resilience approaches	5.2 Expand nature-based solutions that support climate mitigation and adaptation	Peatland Carbon and Hydrology Restoration Programme (Linked to Obj. 1.2)	NGOs	NIEA, LNP, Landowners	£750K–£1.5m	3–10
		Riparian Woodland and River Naturalisation Scheme	NGOs	LNP, Landowners, RSSPB DAERA, Fishing Associations,	£250k	2–8
		Nature-Based Solutions in Tourism and Infrastructure Planning	Councils	LNP, Landowners	£100k	3–7
		Nature-Based Solutions Demonstration Sites Network	LNP	NGOs, NIEA, RSPB	£200k	3–10
	5.3 Enhance climate literacy and public awareness	Climate–Heritage Schools Education Programme	LNP	Schools	£30k	1–3
		Local Climate Resilience Media Campaign	LNP	Community	£30k	3–7
		Climate Change Citizen Science Network	LNP	Community	£30k	1–10
	5.4 Support adaptive, resilient economic and cultural practices	Climate-Smart Farming Transition Programme	LNP	DAERA, UFU, Farming community	£200k	2–10
		Adaptive Innovation in Fishing and Water-Based Industries	LNP	Community, Businesses	£50k	3–10
		Cross-Sector Climate-Smart Economic Transition Working Group	LNP	Community, Businesses	£50k	1–10

Staff and Running Costs

There is a need for the long-term employment of specialised staff to help coordinate, manage and deliver the main actions identified in the Resilience Action Plan. The information below outlines a structured summary job description for each of the core roles in the Heritage Resilience Plan, followed by cost estimates for annual salaries based on Northern Ireland Civil Service (NICS) grading scales. These costs are exclusive of employer NI contributions and pension commitments.

1) Heritage Resilience Plan Manager (DP – Senior Executive Officer)

Role Purpose

- Lead and coordinate the delivery of the Heritage Resilience Plan for Lough Neagh.
- Provide strategic leadership to the project team and ensure delivery against project milestones and funding requirements (e.g., The National Lottery Heritage Fund).
- Liaise with partners (public bodies, councils, community groups, environmental organisations) to manage governance structures.
- Oversee research, planning, reporting and partnership engagement.
- Manage risks, resolve issues and represent the project in stakeholder forums

Key Responsibilities

- Lead development and implementation of the overall 10-year plan.
- Manage the project team, budgets, schedules and deliverables.
- Regular reporting to funders and partners.
- Ensure compliance with legal, regulatory and funding conditions.
- Strategic stakeholder engagement with public agencies, community groups and landowners (e.g., exploring future ownership/management).

Skills/Experience

- Strong project management and leadership experience.
- Experience in cultural heritage, environmental management or community planning.
- Excellent communication and partnership skills.

Estimated Annual Salary (NICS DP Grade)

- £43,500 – £47,000 (full-time equivalent) under current NICS pay scales.

2) Heritage Resilience Plan Finance Officer (EO2 – Executive Officer 2)

Role Purpose

- Provide financial and administrative support to the Heritage Resilience Plan.
- Track project expenditure, ensure budget compliance, and prepare financial reports for funders.

Key Responsibilities

- Prepare and monitor budgets, process invoices and claims.
- Produce regular financial reports for internal and external stakeholders.
- Assist with audit preparation and compliance checks.
- Support any financial elements of grant applications or reporting.

Skills/Experience

- Experience in public sector financial management or accounting.
- Excellent numeracy and organisational skills.

Estimated Annual Salary (NICS EO2 Grade)

- £28,000 – £32,000 per annum (full-time equivalent), consistent with typical NICS EO2 range.

3) Heritage Resilience Plan Cultural Heritage Officer (SO – Senior Officer / Higher Executive Officer)

Role Purpose

- Support documentation, interpretation and conservation planning for the cultural and historic elements of Lough Neagh's heritage.

Key Responsibilities

- Research cultural heritage assets (built heritage, archaeological sites, intangible traditions like eel fishing).
- Work with communities to document historical knowledge and cultural practices.
- Contribute to development of conservation proposals and resilience strategies.
- Attend heritage consultations and specialist forums.

Skills/Experience

- Qualifications/experience in heritage conservation, archaeology, history or related field.
- Strong research, writing and engagement skills.

Estimated Annual Salary (NICS SO Grade)

- £36,000 – £37,000 per annum (full-time equivalent).

4) Heritage Resilience Plan Community Engagement Officer (SO – Senior Officer / Higher Executive Officer)

Role Purpose

- Lead community consultation and engagement activities that inform delivery of the resilience plan.

Key Responsibilities

- Design and deliver community engagement events, surveys and workshops.
- Build and maintain relationships with local residents, cultural groups, schools and volunteers.
- Ensure engagement outcomes are integrated into planning.
- Produce engagement reports and communications materials.

Skills/Experience

- Experience in community outreach, stakeholder engagement or public consultation.
- Excellent interpersonal skills and ability to engage diverse groups.

Estimated Annual Salary (NICS SO Grade)

- £36,000 – £37,000 per annum (full-time equivalent).

5) Heritage Resilience Plan Restoration Officer x2 (SO – Senior Officer / Higher Executive Officer)

Role Purpose

- Two roles focused on ecological and natural heritage restoration actions identified in the resilience plan.

Key Responsibilities

- Work on conservation and restoration projects (e.g., habitat restoration, shoreline improvement, heritage repair).
- Coordinate with environmental bodies, specialists and contractors.
- Monitor progress of restoration activities and report results.
- Support volunteers and community groups participating in practical restoration.

Skills/Experience

- Experience in ecology, conservation management or natural heritage restoration.
- Skills in project coordination and practical restoration planning.

Estimated Annual Salary (NICS SO Grade, each)

- 36,000 – £37,000 per annum each (full-time equivalent).

Summary of Salary Costs for Resilience Plan Delivery (approximate per annum)

Post Title	NICS Grade	Salary (including 'ers and Pension (5%) contributions and annual pay increase of 3%)										Total
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
Heritage Resilience Plan Manager	DP	£ 55,121.00	£ 56,774.63	£ 58,477.87	£ 60,232.20	£ 62,039.17	£ 63,900.35	£ 65,817.36	£ 67,791.88	£ 69,825.63	£ 71,920.40	£ 631,900.49
Finance Officer	EO2	£ 30,733.00	£ 31,654.99	£ 32,604.64	£ 33,582.78	£ 34,590.26	£ 35,627.97	£ 36,696.81	£ 37,797.71	£ 38,931.64	£ 40,099.59	£ 352,319.40
Cultural Heritage Officer	SO	£ 43,139.00	£ 44,433.17	£ 45,766.17	£ 47,139.15	£ 48,553.32	£ 50,009.92	£ 51,510.22	£ 53,055.53	£ 54,647.19	£ 56,286.61	£ 494,540.29
Community Engagement Officer	SO	£ 43,139.00	£ 44,433.17	£ 45,766.17	£ 47,139.15	£ 48,553.32	£ 50,009.92	£ 51,510.22	£ 53,055.53	£ 54,647.19	£ 56,286.61	£ 494,540.29
Restoration Officer	SO	£ 43,139.00	£ 44,433.17	£ 45,766.17	£ 47,139.15	£ 48,553.32	£ 50,009.92	£ 51,510.22	£ 53,055.53	£ 54,647.19	£ 56,286.61	£ 494,540.29
Restoration Officer	SO	£ 43,139.00	£ 44,433.17	£ 45,766.17	£ 47,139.15	£ 48,553.32	£ 50,009.92	£ 51,510.22	£ 53,055.53	£ 54,647.19	£ 56,286.61	£ 494,540.29
Total		£ 258,410.00	£ 266,162.30	£ 274,147.17	£ 282,371.58	£ 290,842.73	£ 299,568.01	£ 308,555.05	£ 317,811.71	£ 327,346.06	£ 337,166.44	£ 2,962,381.05
Notes on Salaries												
These are indicative ranges based on current NICS pay bands for analogue grades (EO2, SO, DP) as at the 2024–25 pay statistics.												
Actual salary within the range depends on point of entry, experience and internal policies.												
Stated salaries are inclusive of employer NI and Pension contributions												
Salaries assume an annual 3% cost of living increase												

Summary of Running Costs for Resilience Plan Delivery (approximate per annum)

Cost Centre	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Office & Admin (15% of salary costs)	£ 38,761.00	£ 39,923.83	£ 41,121.54	£ 42,355.19	£ 43,625.85	£ 44,934.62	£ 46,282.66	£ 47,671.14	£ 49,101.28	£ 50,574.31	£ 444,351.43
Travel & Accommodation costs (7% of salary costs)	£ 18,088.00	£ 18,630.64	£ 19,189.56	£ 19,765.25	£ 20,358.20	£ 20,968.95	£ 21,598.02	£ 22,245.96	£ 22,913.34	£ 23,600.74	£ 207,358.65
Computers & digital hardware	£ 7,000.00	£ -	£ -	£ -	£ -	£ 3,000.00	£ -	£ -	£ -	£ -	£ 10,000.00
Software and other licenses	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 700.00	£ 7,000.00
Mobile Phones	£ 2,484.00	£ 2,533.68	£ 2,584.35	£ 2,636.04	£ 2,688.76	£ 2,742.54	£ 2,797.39	£ 2,853.34	£ 2,910.40	£ 2,968.61	£ 27,199.11
Vehicle plus maintenance costs	£ 37,950.00	£ 1,300.00	£ 1,365.00	£ 1,433.25	£ 1,504.91	£ 1,580.16	£ 1,659.17	£ 1,742.12	£ 1,829.23	£ 1,920.69	£ 52,284.53
Equipment - tools, drones etc	£ 5,000.00	£ 600.00	£ 660.00	£ 726.00	£ 798.60	£ 878.46	£ 966.31	£ 1,062.94	£ 1,169.23	£ 1,286.15	£ 13,147.69
PPE	£ 4,600.00			£ 4,600.00			£ 4,600.00				£ 13,800.00
Publicity, marketing and promotion	£ 10,000.00	£ 10,100.00	£ 10,201.00	£ 10,303.01	£ 10,406.04	£ 10,510.10	£ 10,615.20	£ 10,721.35	£ 10,828.57	£ 10,936.85	£ 104,622.13
Training	£ 2,000.00		£ 2,000.00		£ 2,000.00		£ 2,000.00		£ 2,000.00		£ 10,000.00
Accountancy, legal etc	£ 1,100.00	£ 1,122.00	£ 1,144.44	£ 1,167.33	£ 1,190.68	£ 1,214.49	£ 1,238.78	£ 1,263.55	£ 1,288.83	£ 1,314.60	£ 12,044.69
	£ 127,683.00	£ 74,910.15	£ 78,965.90	£ 83,686.07	£ 83,273.04	£ 86,529.32	£ 92,457.52	£ 88,260.40	£ 92,740.87	£ 93,301.96	£ 901,808.22

MONITORING AND EVALUATION

Purpose of the Monitoring and Evaluation Framework

The Monitoring and Evaluation Framework establishes a coherent structure for tracking progress, ensuring accountability, and enabling adaptive management across the ten-year Heritage Resilience Plan. It provides a unifying approach for monitoring ecological, cultural, social and governance outcomes, replacing previously fragmented programmes with an integrated, basin-wide system. Through alignment with the five Heritage Resilience Goals, the framework promotes the collection and analysis of diverse data types, supports transparent public reporting, and embeds evidence-based learning into annual and multi-year planning cycles. Ultimately, it ensures that all activities remain firmly anchored to the shared vision of ecological recovery, cultural renewal and community stewardship for Lough Neagh. The framework functions within the broader governance ecosystem overseen by the Forever Lough Neagh Board and coordinated daily by the Lough Neagh Partnership Secretariat.

Theory of Change

The ten-year vision guiding the Heritage Resilience Plan is a future in which Lough Neagh has positively progressed towards achieving ecological recovery, cultural revitalisation, empowered community participation and widespread climate adaptation. In this resilient landscape, environmental and cultural systems reinforce one another, supporting long-term wellbeing for both people and nature.

This vision responds to a set of interrelated challenges. Lough Neagh currently faces systemic ecological decline, weak and fragmented governance, loss of cultural continuity, and limited community involvement. Together, these pressures reduce the lake's ability to withstand shocks, sustain its heritage values, or support thriving local communities.

The pathway of change begins with key inputs including strengthened governance arrangements, secure funding, technical expertise, community engagement mechanisms, and scientific monitoring systems. These inputs enable a wide range of activities, including habitat restoration, nutrient reduction, invasive species control, cultural heritage protection and revitalisation, skills and youth development, climate adaptation planning, and the creation of shared baselines and indicators.

As activities are implemented, they produce tangible outputs: restored ecosystems, heritage surveys and festivals, governance protocols and action plans, citizen science networks, and heritage-linked economic opportunities. Over the medium term, these lead to outcomes including improved ecological integrity, strengthened heritage continuity, embedded community participation, robust monitoring practices and enhanced climate resilience. In the long term, these cumulative changes contribute to the overarching impact: a thriving, resilient cultural-ecological region shaped by integrated governance and sustained by shared stewardship. The process of change is summarised in Table 2.

Table 2: Theory of Change Process

Component	Description
Long-Term Vision (10+ years)	A resilient Lough Neagh landscape where ecological recovery, cultural renewal, empowered communities and climate-adaptive practices reinforce one another to secure long-term wellbeing for people and nature.
Problem Statement	Lough Neagh faces systemic ecological decline, fragmented governance, cultural erosion and weak community involvement. These interconnected pressures undermine the lake's capacity to absorb shocks or sustain its heritage values.
Inputs	• Governance reform and partnership coordination • Funding mechanisms and technical expertise • Community engagement, training and stewardship • Scientific monitoring and data systems
Activities	• Habitat restoration, nutrient reduction, invasive species control • Built and cultural heritage protection and revitalisation • Community capacity programmes, youth pathways and leadership structures • Climate adaptation planning and nature-based solutions • Shared data, baselines and indicator development
Outputs	• Restored ecological areas and improved water quality • Heritage surveys, festivals, interpretation and skills training • Governance protocols, annual action plans and sub-committee coordination • Citizen science networks and climate literacy programmes • Local heritage enterprise accelerators and heritage-led economic opportunities
Outcomes (3–7 years)	• Enhanced ecological integrity • Strengthened heritage continuity and intergenerational transmission • Embedded community participation in governance and stewardship • Consistent shared monitoring and transparent reporting • Improved climate resilience and adaptive local heritage economies
Impact (7–10+ years)	A thriving, resilient cultural-ecological region with integrated governance and long-term stewardship.

Logic Model

Across the five Heritage Resilience Goals, the logic model outlines how inputs, activities, outputs, outcomes and impacts interconnect.

Inputs	Activities	Outputs	Short–Medium Outcomes (3–7 yrs)	Long-Term Impact (10+ yrs)
Goal 1: Ecological Restoration & Water Quality Recovery				
DAERA Actions; NIEA regulation; NI Water infrastructure; scientific data; landowner cooperation; technical expertise; NGOs	Nutrient reduction programmes; wastewater upgrades; peatland and wetland restoration; riparian buffers; invasive species management; ecological monitoring	Restored wetlands and peatlands; nutrient reduction plans; ecological baselines; water quality dashboard; invasive species risk mapping	Reduced nutrient loading; improved water quality; restored habitat connectivity; increased native species resilience; reduced invasive spread	Regenerated, functioning freshwater ecosystem; stable biodiversity; resilient habitats capable of withstanding climate and pollution pressures
Goal 2: Safeguarding & Revitalising Built, Cultural & Intangible Heritage				
Historic Environment Division; local councils; heritage specialists; tradition-bearers; cultural NGOs; local creatives; training providers	Heritage-at-risk survey; conservation guidance; adaptive reuse pilots; skills development; cultural festivals; oral histories; interpretation trails and AR tools	Digital heritage register; restored or conserved assets; festival programme; participants trained; new interpretation; cultural tourism products	Improved heritage condition; increased cultural continuity; strengthened community identity; greater visibility of craft, folklore and local traditions; improved cultural tourism quality	A vibrant, safeguarded cultural landscape where built, archaeological and intangible heritage is continuously valued, maintained and passed on across generations
Goal 3: Integrated, Shared-Governance for Heritage & Environmental Stewardship				
Forever Lough Neagh Board; Lough Neagh Partnership Secretariat; cross-council commitment; departmental engagement; data-	Establish partnership framework; create shared governance protocols; develop annual action plans; create data-sharing systems; operate Catchment Data	Basin-wide governance structure; operating procedures; integrated data observatory; public dashboards; annual action plans; cross-	Clear accountability; coherent decision-making; reduced duplication; consistent planning across councils and agencies; improved transparency and trust;	A stable, integrated, long-term governance system capable of coordinating large-scale heritage, ecological and climate actions across the

Inputs	Activities	Outputs	Short–Medium Outcomes (3–7 yrs)	Long-Term Impact (10+ yrs)
sharing agreements; thematic sub-committees	Observatory; policy alignment workshops	council planning harmonisation	evidence-led programme delivery	entire Lough Neagh basin
Goal 4: Community Stewardship, Skills and Participation				
Local communities; volunteers; schools; community groups; training bodies; NGOs; councils; heritage practitioners	Community Skills Academy; micro-grants; intergenerational learning; youth leadership pathway; heritage forums; community assemblies; co-designed placemaking; citizen science	Skilled volunteers; youth ambassadors; community-led projects; local heritage micro-hubs; strengthened community forums; shared stewardship charter	Increased community capacity; improved participation in governance; intergenerational knowledge transfer; strong local ownership of heritage and ecological projects; increased volunteer retention	Communities act as long-term co-stewards of the Lough, with embedded skills, leadership structures and locally driven initiatives sustaining ecological and cultural resilience
Goal 5: Climate-Adaptive and Future-Proofed Heritage Landscapes				
Climate data; technical specialists; conservation practitioners; farmers and fishers; universities; councils; NGOs	Climate risk assessments; climate-proofing guidance; nature-based solutions (peatland, riparian woodland, NBS demonstration sites); climate literacy programmes; climate-smart farming & fisheries	Climate risk register; adaptation guidance; NBS demonstration network; climate education programmes; climate-smart business/farming adaptations	Increased adaptive capacity; reduced vulnerability of heritage assets; increased carbon sequestration; climate-aware communities; resilient fisheries & farming; infrastructure designed for climate impacts	A climate-resilient cultural-ecological system with protected heritage assets, strengthened natural buffers, and adaptive local economies capable of thriving under changing climate conditions

Monitoring and Reporting Timeline

The Monitoring and Reporting Timeline establishes clear cycles of accountability, learning and adaptive management across ecological, cultural, governance, community and climate-related activities. Each interval plays a distinct role in ensuring that progress is understood, risks are managed early, and adjustments are made based on robust evidence.

Quarterly monitoring forms the operational backbone of the system. Sub-committees working across ecological restoration, cultural heritage, community engagement and climate resilience meet every three months to review activity-level progress, analyse emerging ecological datasets, and track expenditure and resource allocation. These quarterly reviews provide near-real-time insight into implementation barriers, seasonal considerations, or unexpected environmental shifts. They also ensure that data from the field is consistently fed into shared dashboards managed by the Lough Neagh Partnership Secretariat. Biannual reporting deepens this picture by synthesising community-facing and volunteer-related information. This biannual lens provides a bridge between short operational cycles and longer strategic oversight, ensuring that community participation, capacity building and stewardship trends are fully represented within the monitoring system.

Annual reporting provides the formal milestone for system-wide reflection. Each year, the Secretariat and the Forever Lough Neagh Board prepare a comprehensive Basin-wide Monitoring Report, updating all key indicators, ecological trends, cultural heritage outputs and governance performance measures. This report is supported by transparent dashboards made available to partners and the public. The annual cycle also includes a full review and refresh of the Action Plan, allowing goals, budgets, activities and timelines to be adjusted based on the evidence gathered. A governance review, tracking coordination effectiveness, shared decision-making and cross-agency collaboration, ensures that structural issues are addressed and that partners remain aligned. Mid-term evaluations in Years 3 and 7 serve as critical learning checkpoints. Conducted by an external evaluator with support from the Secretariat, these assessments examine whether early outputs are translating into the anticipated outcomes. They focus on medium-term shifts such as ecological integrity improvements, strengthened cultural continuity, enhanced stewardship, and emerging resilience within local governance systems. Mid-term evaluations help determine whether the Theory of Change remains valid or requires modification based on emerging evidence or changing environmental conditions.

The final evaluation in Year 10 assesses long-term impact, sustainability pathways and lessons for the next decade. An independent evaluation team conducts a full review of ecological recovery, cultural revitalisation, community empowerment and climate-adaptive practices, while assessing the durability of new governance arrangements. Recommendations from this final assessment directly inform the development of the subsequent 10-year strategy, ensuring continuity, learning and a shared long-term vision.

RISK AND MITIGATION FRAMEWORK

Delivering a 10-year Heritage Resilience Plan for Lough Neagh requires a comprehensive understanding of the risks that could limit ecological recovery, cultural renewal, community participation or climate adaptation. This chapter sets out the major ecological, social, financial, governance and climate risks facing the region and identifies clear mitigation measures designed to protect the integrity, delivery and long-term sustainability of the strategy. The framework aligns to the plan's goals, objectives and project pipeline, ensuring risks are managed proactively through strong governance, evidence-based monitoring and robust community engagement.

Ecological Risks

Ecological risks remain among the most significant threats to the resilience of Lough Neagh. Ongoing water quality issues, habitat degradation, invasive species and biodiversity loss require coordinated mitigation. Priority actions include implementing basin-wide nutrient reduction plans, restoring wetlands and riparian corridors, and establishing rapid-response invasive species teams. Ecological monitoring, using the Catchment Data Observatory, creates early-warning mechanisms that allow interventions before thresholds are exceeded. Adaptive management ensures restoration approaches evolve in response to climate change and ecological feedback.

Risk	Likelihood	Impact	Mitigation Measures	Responsible Bodies
Continued deterioration of water quality	High	Severe	Nutrient reduction plans; wastewater compliance; riparian buffers; wetland restoration; real-time dashboards; escalation protocol	NIEA, DAERA, Councils, LNP
Habitat restoration failure	Medium	High	Pilot-test first; hydrological & biodiversity baselines; adaptive management; long-term maintenance agreements	DAERA, NGOs, LNP
Spread of invasive species	High	High	Rapid response unit; citizen science monitoring; biosecurity protocols; annual invasive status report	Councils, DAERA, NGOs, LNP
Loss of priority species	Medium	High	Species action plans; habitat connectivity corridors; climate modelling; monitoring	NGOs, DAERA

Social Risks

The success of the strategy depends on meaningful community participation. Risks include mistrust, unequal access to benefits, volunteer fatigue and the risk of cultural

heritage being diluted through commercialisation. Mitigation includes co-design processes, community seats in governance structures, micro-grants to empower local action, youth leadership pathways, and authenticity safeguards in cultural programming. Inclusive engagement ensures all communities benefit from resilience interventions.

Risk	Likelihood	Impact	Mitigation Measures	Responsible Bodies
Community mistrust or resistance	Medium	High	Community Assemblies; co-design workshops; transparent reporting; local demonstration pilots	LNP, Councils, Community Groups
Unequal access to heritage benefits	Medium	Medium	Prioritise underserved groups; youth pathways; accessible training; participation monitoring	Councils, LNP,
Cultural commodification	Medium	Medium	Authenticity safeguards; tradition-bearer involvement; heritage quality standards	HED, LNP, Arts & Cultural Organisations
Declining volunteer capacity	Medium	Medium	Skills training; leadership programmes; resource support; volunteer networks	Councils, NGOs, LNP

Financial Risks

Restoration and heritage investment requires stable, multi-year funding. Risks include funding gaps, cost overruns and reliance on short-term grants. Mitigation measures include creating the Lough Neagh Resilience Fund, developing a multi-year investment pipeline, pursuing blended finance models and using joint procurement to reduce costs. Regular financial audits strengthen accountability and ensure resources are deployed efficiently.

Risk	Likelihood	Impact	Mitigation Measures	Responsible Bodies
Insufficient or delayed funding	High	High	Resilience Fund; multi-year investment pipeline; blended finance; phased implementation	LNP, Councils, DAERA

Cost overruns or inefficiencies	Medium	High	Standardised procurement; joint purchasing; risk allowances; quarterly audits	LNP
Reliance on short funding cycles	High	Medium	Modular project design; long-term stewardship agreements; rolling funding pipeline	LNP
Lack of sustainable income streams	Medium	Medium	Heritage enterprise support; social enterprise models; eco-tourism reinvestment	LNP

Governance Risks

Without coherent governance, the impact of the strategy would be significantly reduced. Misaligned policies, fragmented decision-making, and weak data-sharing present clear risks. The strategy mitigates these through a basin-wide governance framework, shared indicators, open-access dashboards, harmonised planning policies and structured annual reporting. Community representation is strengthened through designated governance seats and transparent feedback loops.

Risk	Likelihood	Impact	Mitigation Measures	Responsible Bodies
Fragmented decision-making	High	High	Basin-wide governance framework; joint action plans; sub-committees; cross-council coordination	LNP
Lack of data transparency	Medium	High	Use Catchment Data Observatory; shared indicators; open dashboards; independent audits	LNP
Weak community representation	Medium	Medium	Community seats; stipends; transparent reporting; annual feedback surveys	LNP
Inconsistent policy alignment	Medium	High	Planning harmonisation; integrated guidance; cross-sector workshops; annual policy review	Councils, DAERA, HED

Climate Risks

Climate change intensifies ecological and social vulnerabilities, including flooding, erosion, biodiversity shifts and threats to cultural sites. Mitigation measures include nature-based solutions such as peatland restoration, floodplain reconnection, riparian woodlands and climate-proofing heritage structures. Climate literacy programmes and climate-smart economic transitions ensure communities and businesses are prepared for the challenges ahead.

Risk	Likelihood	Impact	Mitigation Measures	Responsible Bodies
Flooding, erosion, extreme weather	High	Severe	Nature-based solutions; shoreline protection; climate-risk assessments; emergency protocols	DAERA, Councils, NGOs, LNP
Climate-driven biodiversity shifts	High	High	Habitat connectivity; adaptive conservation zones; long-term monitoring; modelling	LNP, NGOs
Climate impacts on cultural sites	Medium	High	Climate-proofing grants; risk registers; heritage adaptation guides	HED, Councils
Loss of livelihoods (fishing, farming, tourism)	Medium	High	Climate-smart farming; adaptive fishing support; business transition training; diversified enterprises	DAERA, LNP

This risk and mitigation framework ensures that the Heritage Resilience Plan is robust, realistic and responsive. By integrating risk management into governance, monitoring and project delivery, partners are equipped to anticipate challenges, adjust course and ensure long-term resilience for Lough Neagh and its communities.

CONCLUSION

The Heritage Resilience Plan for Lough Neagh is more than a strategy; it is a collective commitment to the long-term wellbeing of one of Ireland's most remarkable landscapes. As the plan draws together ecological restoration, cultural renewal, community empowerment and climate adaptation into a single integrated framework, it sets out a pathway that recognises the profound interdependence of the Lough's natural, cultural and social systems. Its success relies on acknowledging that heritage in its fullest sense is not static, but dynamic, shaped by centuries of human interaction, ecological processes and the lived experiences of communities who depend upon and care for the Lough.

Throughout the development of the plan, a consistent message has emerged: no single organisation can secure the future of Lough Neagh alone. The challenges at hand - declining water quality, habitat degradation, cultural erosion, climate pressures and governance fragmentation - demand collaborative action that transcends institutional boundaries and traditional mandates. The governance model established here, centred on the Forever Lough Neagh Board and delivered through strong partnership structures, provides the architecture for this collaboration. It ensures that leadership is shared, decision-making is transparent and inclusive, and actions are coordinated across agencies, councils, community groups, landowners and academic partners. This shared governance approach is essential for achieving the scale of transformation required.

Over the next decade, the plan will guide the restoration of ecological integrity, the revitalisation of cultural heritage, the strengthening of community participation and the embedding of climate resilience. These outcomes will not emerge overnight; they will unfold through years of consistent delivery, evidence-based adaptation and sustained community engagement. The Monitoring and Evaluation Framework ensures that progress is tracked, lessons are learned and interventions evolve in response to changing ecological conditions and community needs. By grounding decision-making in shared data and transparent reporting, the plan builds trust and ensures accountability across all partners.

Central to the plan's success is the active involvement of local communities. Residents, volunteers, tradition-bearers, educators and young people bring invaluable knowledge, skills and commitment. Their participation is essential to sustaining restored habitats, safeguarding cultural traditions and strengthening local identity. The plan recognises that resilience cannot be imposed from above; it must be built from the ground up, through meaningful engagement, capacity building and support for local stewardship.

As the climate crisis accelerates, the importance of integrated nature-based solutions and climate-adaptive heritage management becomes increasingly clear. The plan positions Lough Neagh at the forefront of regional adaptation by combining scientific evidence with cultural knowledge, ensuring that both the landscape and its heritage are better prepared for future challenges. Through peatland restoration, riparian woodland expansion, climate-proofing of heritage assets and climate-smart economic

transitions, Lough Neagh can become a model of how heritage landscapes can respond proactively and innovatively to environmental change.

The conclusion of this plan marks not an end, but the beginning of a new era for Lough Neagh. It signals a shared determination to protect the lake, revive its cultural richness, empower its communities and create a thriving, resilient landscape for generations to come. The actions and commitments set out here will only succeed through ongoing collaboration, sustained investment and a shared sense of responsibility. By working together across councils, agencies, communities and sectors, the people of Lough Neagh can transform a moment of vulnerability into a decade of renewal. The future of Lough Neagh depends on the choices made today. This plan provides the foundation for those choices: a roadmap for recovery, a framework for resilience and a vision of a landscape where ecological health, cultural vibrancy and community leadership flourish together. With commitment, partnership and sustained action, Lough Neagh can once again become a place of abundance, pride and possibility.



Ballyronan Marine

