Shared Waters – Shared Landscapes Project

Final Report

Prepared by

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Acknowledgements

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Executive summary and recommendations

"We want our waters to be clean and full of life, with access agreed by all parties, to enable learning and safe play, and which are the pride of the region."

This is the overarching vision developed by the communities of Cullyhanna, Forkhill and Mullaghbane, South Armagh, Northern Ireland, for the future of their local water resources. The overarching vision is underpinned by four supporting visions which identify a pathway as to how the overarching vision can be achieved: 'We want better access along our rivers and lakes'; 'We want cleaner rivers and lakes'; 'We want to educate the children about our rivers and water safety'; and 'We want to increase tourism to our lakes and rivers'.

The objective of the Shared Waters – Shared Landscape project was to re-engage the local community of Forkhill, Mullaghbane and Cullyhanna with their water resources by creating a community-led vision for their local waters. By re-establishing this connection with the rivers and lakes within the localities, the communities can gain a better understanding of the importance of water in the local environment and how they can be involved in its management.

The project was delivered through a number of events and workshops which were held over a ten week period from 2nd January to 15th March 2017. The first workshop launched the project and identified the importance of developing a community-led vision for the local rivers, lakes and streams. The final workshop relayed the outcomes of the project and presented the draft vision for discussion and comment. In between these two workshops, further events were held, including: creative workshops in the local primary schools with the children; free soil nutrient and pH testing; a community survey; a river restoration course; and a mini-environmental fair celebrating the local waters and wildlife. Interest and attendance at events increased as the project progressed, with recognition of the value and importance of the project and community members were keen to share their memories and ideas regarding the local waterways in order to develop their vision.

This project has provided the platform to show that local communities have a strong interest in their local waters and want to play a significant role in managing and protecting them into the future. Shared thinking and facilitating local community engagement in an integrated manner throughout the decision-making process will provide multiple short- and long-term benefits across both local communities and governing agencies/local authorities. In addition, the outputs of this project can be used to potentially leverage future funding and to develop partnerships into the future in order to achieve the supporting and subsequently the overarching visions.

The following recommendations are made:

1. Use the overarching and supporting key visions to inform future partnership development and funding applications.
2. Tailor future funding applications to delivering actions designed to achieve the community visions.
3. Provide feedback to the local communities as to:
    a. How management actions are being developed to achieve the visions.
    b. How community members can be involved in management actions.
4. Develop a communications and engagement delivery strategy that can be used for future engagement projects.
5. Continue to engage landowners in the region to work towards further improving local land and nutrient management.
6. Encourage community involvement with the currently developing Dundalk Bay Rivers Trust/Catchment Partnership.
7. Explore the potential for the formation of a local community environmental group that can operate independently of governing agencies. This may be a stand-alone group, or one that is associated with the currently developing Dundalk Bay Rivers Trust/Catchment Partnership.
8. Establish an annual community water-related event such as an environmental fair or water festival to maintain interest and involvement in local water resources.
9. Appropriately monitor all future engagement initiatives and ensure that feedback loops are in place to inform adaptive management of future actions.

1. Introduction

Water management is transitioning from the traditional top-down approach to more integrated initiatives with a focus on community-led action (Rolston *et al*. 2016). The Shared Waters – Shared Landscapes Project was developed based on this concept by integrating environmental, economic and social issues within a region into a coherent community-led vision. The project was funded by the Northern Ireland Environment Agency (NIEA) Challenge Fund and ran from 2nd January – 14th March 2017. The project's concept aligns with Newry, Mourne and Down District Council's corporate plan which encourages citizen and community engagement, particularly in unlocking their enterprise spirit as well as playing their part in contributing to the region's social, economic and environmental development (NMADDC, 2015). The project focused on the rivers and lakes associated with the Forkhill, Mullaghbane and Cullyhanna communities in County Armagh, Northern Ireland, all of which eventually flow into Dundalk Bay, Republic of Ireland (Figure 1). The rivers and lakes in the region have a number of water quality and land management issues which have the potential to be improved through local community involvement and natural resource management actions. A key feature of undertaking an ecosystem approach to environmental management is involving people and communities in the nature that surrounds them and encouraging them to realise how dependant they are upon its health (NIEA, 2011). This project aimed to build on this outlook and to actively engage the local communities to come together and develop a shared vision for their local water resources. As well as providing environmental benefits, implementing this vision will also help to create positive social and environmental impacts, both locally and downstream.

2. Project objectives

Within the Forkhill, Cullyhanna and Castletown sub-catchments there are a number of locally important lakes, rivers and streams. The over-arching objective of the project was:

"*To re-engage the community with their local water resources and encourage a better understanding of the importance of water in the local environment.*"

The project will act as an initial pilot scoping study and its outcomes and outputs will help to inform the development of further partnerships with other communities in the larger Dundalk Bay catchment, with the overarching aim of sequentially helping to deliver an overall better water environment for Dundalk Bay and its wider catchments. In addition, the overarching objective of the Shared Waters, Shared Landscapes Project was supported by a number of key sub-objectives:

- To develop a community-led vision for the local water resources by delivering various events and workshops within the communities.

- To re-engage landowners, farmers and residents with the land to enable them and the environment to reap the benefits of good land management practices.
- To encourage an integrated approach to actions to safeguard and improve the water environment, by bringing people and organisations together at the right scale in order to be beneficial to the region's ecology, communities and economy.

3. Sub-catchment descriptions

A river catchment is the geographical area from which water flows to the sea. A sub-catchment is a sub-section of the larger geographical area of a catchment and usually relates to a specific portion of a river or a tributary. The Forkhill, Mullaghbane and Cullyhanna communities are located within three sub-catchment areas: Forkhill (55.9 km2); Cullyhanna (51.9 km2); and Castletown (117.2 km2). These sub-catchments form part of the larger Dundalk Bay catchment (1502.2 km2), which is situated in the Neagh Bann River Basin District (Figure 1). The Forkhill, Cullyhanna and Castletown sub-catchments are predominantly situated within Northern Ireland, with a small section (southern end) lying within the Republic of Ireland.

3.1 Castletown sub-catchment

The Castletown sub-catchment is the most westerly water body of the three study sub-catchments (Figure 1). The main river which flows through the sub-catchment is the Creggan River, the headwaters of which rise in the coniferous forest upstream of Newtownhamilton (NIEA, 2015). The main land cover in this sub-catchment is pasture, with some urban areas present throughout the southern section (Figure 2). The geology underlying the Castletown sub-catchment is predominantly sandstone (Gala group sandstone to the north and Hawick group sandstone in the south: Figure 3). The dominant superficial/subsoil classification within the sub-catchment is diamicton till (till is material resulting from glacial erosion) with small areas of sand, silt and peat scattered throughout the region (Figure 4). Soil types vary within the sub-catchment, partially as a result of the different classification systems used in the Republic of Ireland and Northern Ireland (Figure 5).

The main geomorphological features of the rivers include cascading stepping pool typology within the headwaters and a mixture of pool riffle glide and lowland meandering types within the main channel (NIEA, 2015). The EU Water Framework Directive (WFD) 2014 assessment classifies the river as poor status due to macrophytes, which could be as a result of habitat or chemical issues, and subsequently the Creggan river has been prioritised for further water quality analysis in 2017/18 (NIEA, 2015).

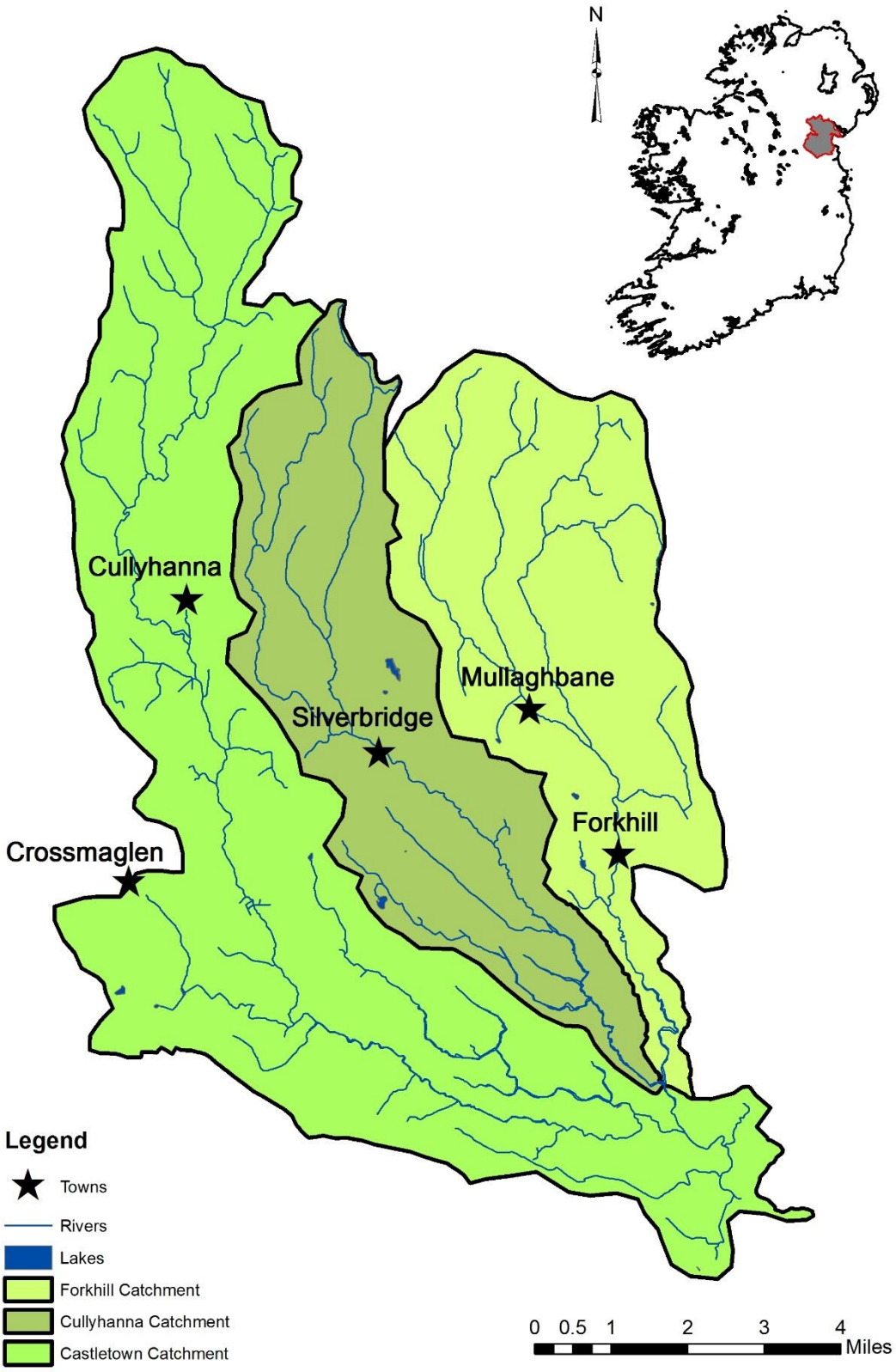

Figure 1: Forkhill, Cullyhanna and Castletown sub-catchments, Co. Armagh, situated in the larger overall Dundalk Bay catchment (Top right of figure).

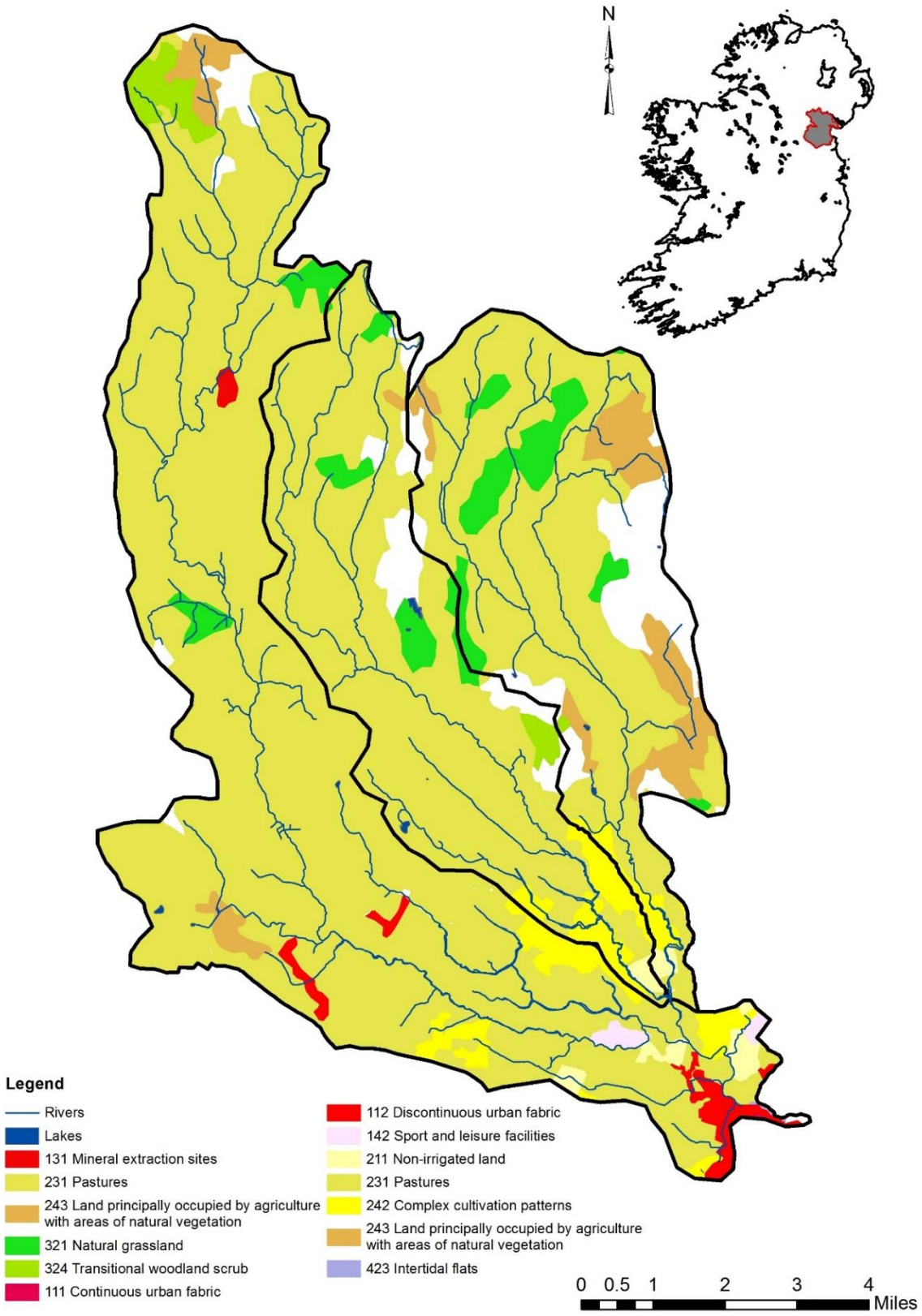

Figure 2: CORINE land cover data for the Forkhill, Cullyhanna and Castletown sub-catchments, County Armagh.

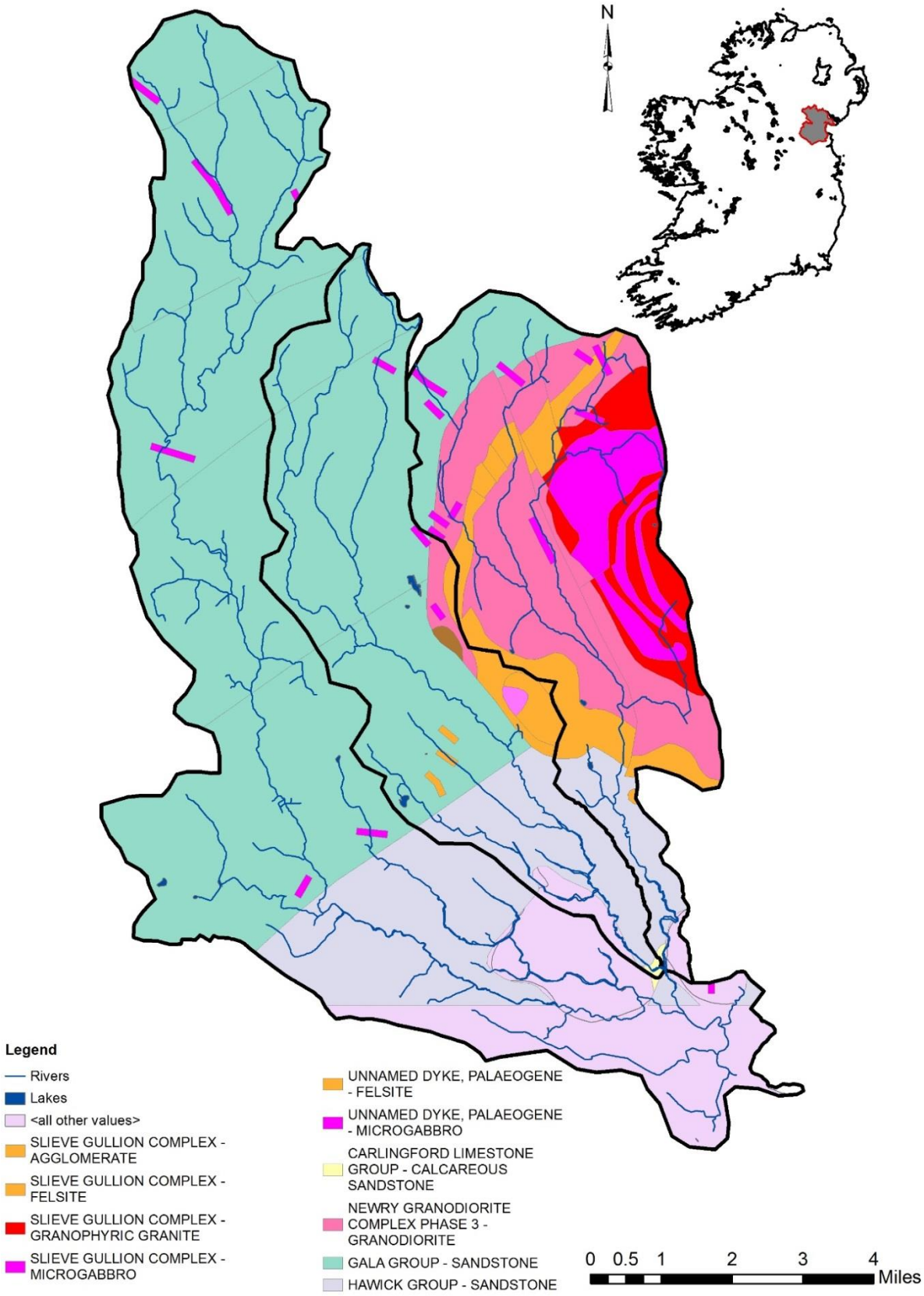

Figure 3: Geological bedrock categories underlying the Forkhill, Cullyhanna and Castletown sub-catchments, County Armagh. Northern Ireland data is Crown Copyright and is reproduced with the permission of Land & Property Services under delegated authority from the Controller of Her Majesty's Stationery Office, © Crown copyright and database right 2017 CS&LA156.

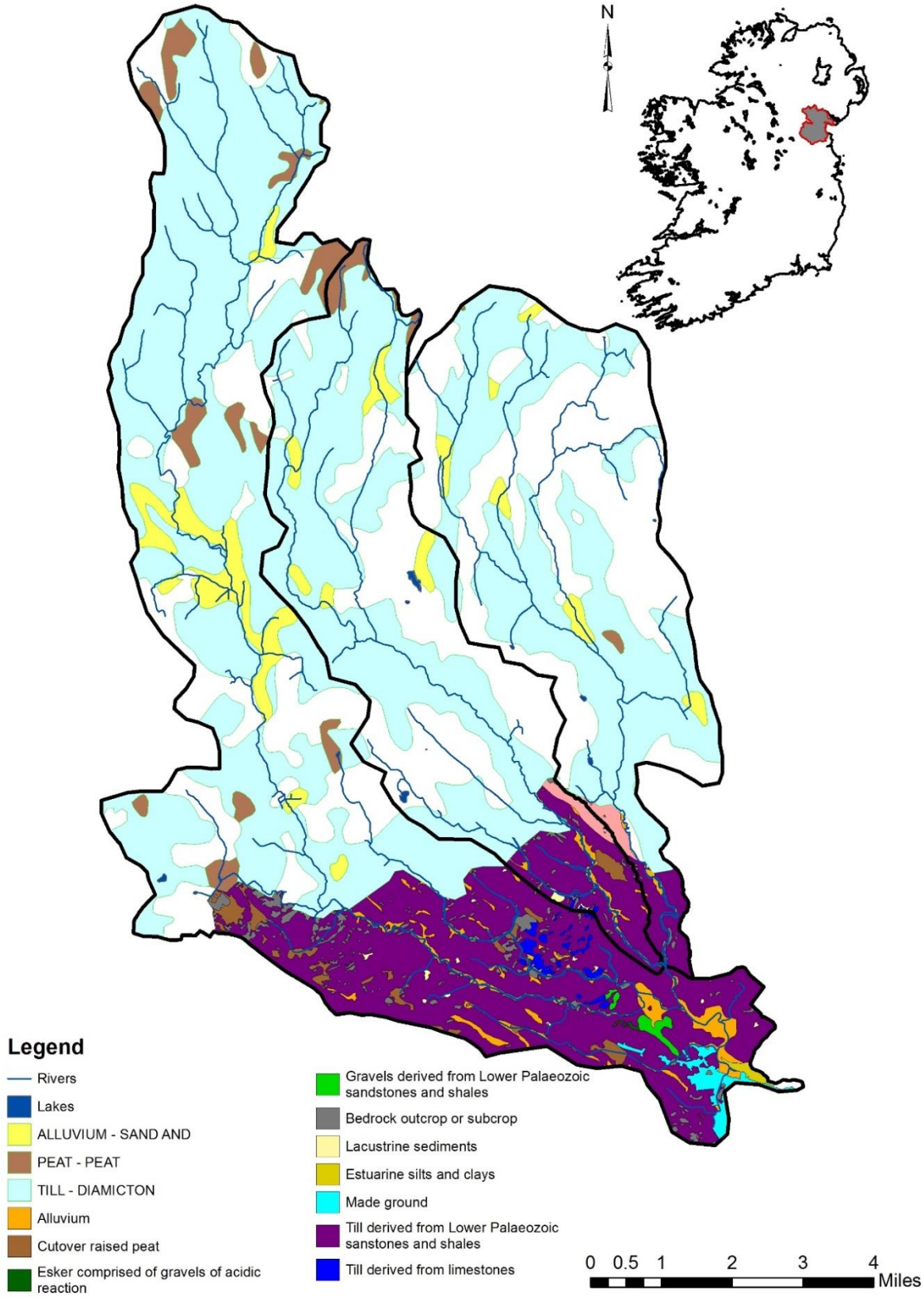

Figure 4: Subsoil categories underlying the Forkhill, Cullyhanna and Castletown sub-catchments, County Armagh. Note the different subsoil (superficial) classifications used in Northern Ireland and Republic of Ireland. Northern Ireland data is Crown Copyright and is reproduced with the permission of Land & Property Services under delegated authority from the Controller of Her Majesty's Stationery Office, © Crown copyright and database right 2017 CS&LA156.

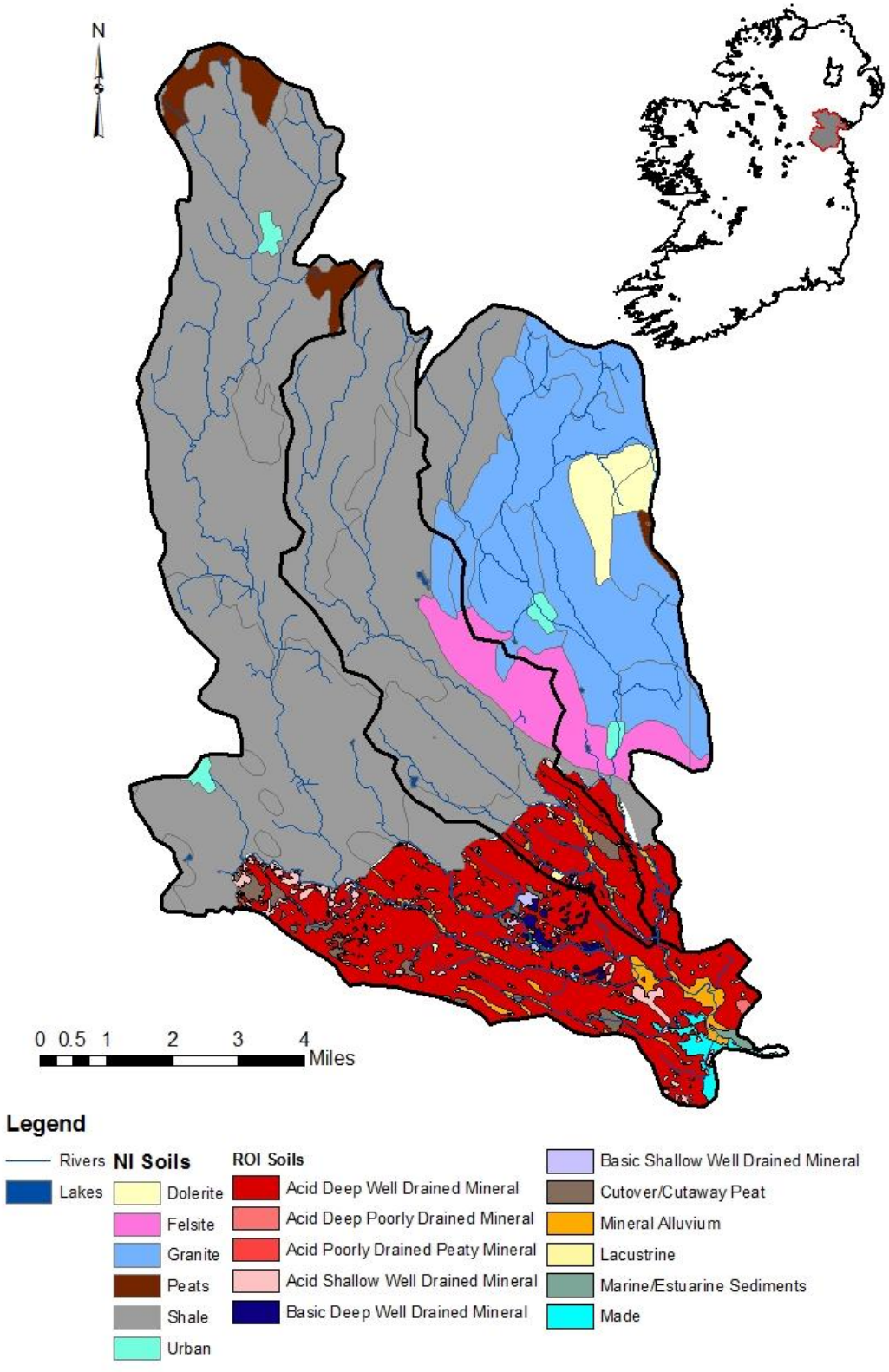

Figure 5: Soil categories underlying the Forkhill, Cullyhanna and Castletown sub-catchments, County Armagh. Note the different soil classifications used in Northern Ireland and Republic of Ireland. Northern Ireland data is Crown Copyright and is reproduced with the permission of Land & Property Services under delegated authority from the Controller of Her Majesty's Stationery Office, © Crown copyright and database right 2017 CS&LA156.

3.2 Cullyhanna sub-catchment

The Cullyhanna sub-catchment is located between the Castletown and Forkhill sub-catchments (Figure 1). The Cully Water is the main river which flows through the sub-catchment, rising near the A25 between Carrickcullion and Carrowmannan. The main channel of the Cully Water is pool riffle glyde typology with sections of cascade step pool along areas of greater slope (NIEA, 2015). The status of the river is good in accordance to the 2014 WFD classification, with an objective of maintaining this status until 2027 (NIEA, 2015). The Ring of Gullion Area of Outstanding Natural Beauty (ANOB) is present within this sub-catchment (NIEA, 2015). Pasture is the main land cover within the Cullyhanna sub-catchment with small areas of natural grassland scattered throughout the northern section and areas of urbanisation in the south (Figure 2). The bedrock geology is dominated by sandstone (Gala group to the north and Hawick group in the south), with a small area of granodiorite and felsite toward the east of the sub-catchment (Figure 3). The main superficial/subsoil type is diamicton till with patches of sand, silt and peat (Figure 4). Soils within Northern Ireland are generally shale with small areas of felsite and granite located in the east of the sub-catchment associated with the Slieve Gullion complex. Soils in the Republic of Ireland section of the sub-catchment are dominated by acidic, well-drained mineral soils (Figure 5).

3.3 Forkhill sub-catchment

The Forkhill sub-catchment is the most easterly of the three study sub-catchments (Figure 1). The main Forkhill River flows from the hills south of Belleek and through Slieve Gullion Forest Park (NIEA, 2015). The Slieve Gullion region is designated as an AONB, an Area of Special Scientific Interest (ASSI) and a Special Area of Conservation (SAC) (NIEA, 2015). Pasture is the dominant land cover within the Forkhill sub-catchment with areas of natural grassland scattered throughout the northern section and areas of urbanisation at Forkhill village (Figure 2). The bedrock of the geologic rings of Slieve Gullion consists of granodiorite, microgabbro and granophiric granite, with a sandstone perimeter (Figure 3). The dominant superficial/subsoil classification within the sub-catchment is diamicton till with small areas of sand, silt and peat scattered throughout (Figure 4). Soils in the Forkhill sub-catchment are dominated by the granite and felsite associated with Slieve Gullion, with areas of shale in the north and south of the Northern Ireland region of the sub-catchment. The small area of the sub-catchment that is located within the Republic of Ireland is dominated by well-drained acidic mineral soil. There are a range of river typologies in the Forkhill River, with areas of cascading stepping pool channels in the upland areas and pool riffle glides sequences in the flatter lowland areas (NIEA, 2015). There was no data in relation to the 2014 WFD classification of the Forkhill River, however, samples taken during this study (23 February 2017) by

the NIEA showed the Forkhill River to be of good water quality in accordance to the current WFD guidelines (NIEA, 2015).

The rivers in all three sub-catchments have areas which are at low, medium and high agricultural runoff risk (NIEA, 2015). All three sub-catchments have a number of areas which do not possess buffers strips along the channel lengths, which may leave water bodies vulnerable to agricultural run-off and subsequently potential decline in future classification.

4. Outline of engagement activities

A number of local engagement activities were undertaken in the Forkhill, Mullaghbane and Cullyhanna communities over the 10 week duration of the Shared Waters – Shared Landscapes Project. These included:

- Project launch workshop
- Community survey
- Free soil testing
- Schools engagement
- River restoration course
- StreamScapes mini-environmental fair
- Final workshop

The purpose of these events were to create a number of varying initiatives to attract all members and ages within the communities to develop their visions for the rivers and lakes within the Forkhill, Cullyhanna and Castletown sub-catchment.

Various marketing actions were used to promote the project during the initial weeks (Figure 6). Articles were published in local newspapers to promote the launch of the project as well as the free soil testing being offered to the local farmers and landowners in the areas. Word was passed through different groups associated with the communities such as the Ulster's Farmers Union. Leaflets were distributed throughout the local schools within the communities outlining the project details and up and coming events taking place. In addition leaflets were distributed at the local cattle sales and community groups. Further advertising for the project consisted of posters displayed in local shop windows and door to door promotion.

Figure 6: Illustration of promotional material.

4.1 Project launch

The project was launched with a one and a half hour workshop held in the Mullaghbane Community centre on the 2nd February 2017. The purpose of the workshop was to provide details on the project and how it can encourage community ownership of the local water resources. Attendees were welcomed and offered tea, coffee and biscuits on arrival to the workshop, allowing for informal introductions to be made between both project facilitators and community members. A brief presentation was then given outlining the aim and possible outcomes of the project and how the community could get involved. This provided the opportunity to engage in a general discussion, sharing and recalling people's memories of their local rivers and lakes within the study area. The conversation discussed the visions people had for their water bodies, how they could be achieved and who needed to be involved to deliver the visions. During the workshop, participants were asked to fill out an anonymous community survey which was developed to collect data on past and current information about the sub-catchments. In addition, participants were asked if they wanted to avail of free soil nutrient testing which would be undertaken during the project, with a discussion on the test results and their nutrient management implications provided at the final workshop. The free soil testing was predominantly made available to farmers and landowners bordering the rivers and lakes within the sub-catchment areas. Before concluding the workshop, an outline of further events planned in the sub-catchments for the subsequent weeks was provided.

4.2 Schools engagement

The local primary schools in the sub-catchments (St Oliver Plunkett's, Forkhill; St Mary's, Mullaghbane; and St Patrick's, Cullyhanna) were contacted to gain permission for the school children

to participate in developing their own visions, through art media, for the local water resources (Figure 7). Children were grouped into pairs and given a large cut out of a water drop on which these visions could be created. A small introduction was given to the children about the project and the importance their roles played in portraying the overall community-led visions for the rivers and lakes in their sub-catchments. The final art pieces where displayed to the rest of the community at the final workshop held on the 11th of March.

Figure 7: Visions for the Shared Waters – Shared Landscapes Project produced by the P7A and P7B class in St Marys Primary School, Mullaghbane 2nd and 3rd of February 2017, with local artist Tracey McVerry.

4.3 River restoration course

Following the project launch a River Restoration Course was held on Saturday the 4th of February 2017 in the Forkhill Women's Resource Centre. The course was provided by the River Restoration Centre (RRC), Cranfield University, England and delivered by Marc Naura and Rosie Steadman. In 2015, the RRC secured funding from the Esmée Fairbairn Foundation, allowing them to provide free support to various UK groups, including community groups, on topics such as local river restoration projects. In relation to the Shared Waters - Shared Landscapes Project, the RRC course aimed to encourage the local community to engage in their local water environment through re-establishing natural stream and river processes to restore biodiversity. The course was divided into a morning session which provided technical background to natural river processes and how these have changed over time; and an afternoon field trip session which identified local issues impacting the Forkhill River and how these may be addressed (Figure 8).

Figure 8: River Restoration Course run in the Forkhill Women's Resource Centre on the 4th February 2017.

4.4 StreamScapes mini-environmental fair

A mini-environmental fair celebrating local waters and wildlife, was held in the Cullyhanna Community Centre on Saturday the 4th of March 2017, run in conjunction with StreamScapes (Figure 9). Developed in Ireland, StreamScapes is an environmental education resource which is utilised by schools and communities throughout the Republic of Ireland and Northern Ireland to promote awareness of local water and wildlife. The fair saw interested locals and families attend over the course of the afternoon to learn about water quality, pollinators, birds, trees, red squirrels and local salmonids and other fish in the area. Entertainment on the day was provided by local drama group Scor na Og, 2017 All Ireland finalist St Patrick's G.F.C Cullyhanna, and songs and storytelling by local man Peter Carragher.

Figure 9: StreamScapes mini-environmental fair, Cullyhanna Community Centre, Saturday 4th March 2017.

4.5 Final workshop

The last workshop was held in the Mullaghbane Community Centre on Saturday the 11th of March 2017 (Figure 10). The purpose of the workshop was to present for discussion and comment the visions developed by the communities over the previous 10 weeks. On arrival people where welcomed with refreshments, at which time they had the opportunity to admire the children's visions developed through art media, as part of the local schools engagement events displayed around the meeting hall. The meeting began with a brief presentation recapping the purpose of the project and the various events which took place around the sub-catchments over the course of the project. The presentation was followed by a group discussion focusing on the supporting and overarching visions to see if people felt that they captured the public's general opinion in relation to their rivers and lakes.

After the general discussion a brief presentation by Michael Calvert was given based on the free soil testing carried out in the sub-catchments. This presentation outlined the benefits of soil testing and the format and meaning of the results participants would receive. A final and third presentation was given by Gregor Fulton from the Woodlands Trust, outlining various remedial actions aimed at flood and erosion mitigation and nutrient reduction.

Figure 10: Final workshop held in the Mullaghbane Community Centre, Saturday 11th March 2017.

5. Outputs of engagement activities

5.1 Project launch

Despite extensive promotion of the project and the launch event through multiple media avenues, community attendance at the project launch was disappointing (six persons). Attendance may have been influenced by the adverse weather conditions which presented on the night. At the entrance to the meeting room, OSI maps with an outline of the sub-catchments were displayed. These acted as a great focal point for discussion, particularly during the informal introductions. The

maps provided a visual aid for people to share and discuss memories and point out where these occurred along the rivers and lakes in their localities

It was apparent during the general introductory discussion, that people were very passionate about their water resources. People felt that their opinions were important and that the meeting provided the perfect platform to discuss and air any concerns they may have had. Individual concerns appeared to be reciprocated throughout the group, which increased confidence amongst individuals. The memories and topics discussed on the night fell into four main categories: angling, education, tourism and aesthetics.

Angling appeared to be at the heart of the community, with many memories shared centring on this topic. One memory included how salmon used to be collect in the Cully Waters, near Tullydonnel, with the supply being so plentiful that they would be eaten for breakfast, lunch and dinner. Further, not so fond memories highlighted a fish kill which occurred near Glebe on the Creggan River, which destroyed the fish populations. One person in particular mentioned:

"*Still, to this day, it is not known if it was due to a diesel spill or slurry. However, the damage is still recognisable as there are no fish swimming past Tierney's Junction*".

Another memory described how a dam on the Forkhill River stopped the salmon going up the river to spawn, although this dam has since been removed. Both the Cully Water and Forkhill River have been recognised for their importance in angling and water recreation (NIEA, 2011). In relation to the lakes of the region, mink were highlighted as a significant problem in the area, due to their killing of fish, particularly in the Cashel Lake area. However, it was discussed that mink are not as big an issue around the rivers as traps are currently in place to help with this problem. The main visions derived on the night in relation to angling were associated with better access to rivers for fishing and to reintroduce salmon in the area.

In relation to education one community member stated:

"*There is a lost generation associated with our rivers*".

It was discussed that a fear has been instilled in the children's' minds, with the perception of adventures in or around rivers being a dangerous activity. One of the ideas shared by the group was to reintroduce children to the waterways, by bringing them back down to the rivers, teaching water safety and bringing water-related education into the local schools. One such programme which is already being rolled out in the local schools on a voluntary basis is teaching children how to fish. However, this activity has become costly due to the travelling costs associated with bus hire to the neighbouring lakes in Castleblayney, Co. Monaghan. It was proposed by the group that a platform or

jetty could be installed around some of the local lakes in the area, particularly Lough Ross, which could be then used not only for general angling but also to accommodate teaching children about fishing and water safety.

A keen interest was also expressed in developing tourism in the area. The area is rich in tourism assets and natural beauty, and strengthening this is a high priority for the local council (NMADDC, 2017). People proposed that debris could be removed from the Forkhill River in particular to re-introduce kayaking in the area. The community of the neighbouring Lough Muckno, County Monaghan, was identified as potentially providing direction and ideas as to how to promote local water resources to entice tourists to the region. The tourist industry was perceived to be thriving in the Lough Muckno area and this commodity should be explored more to see how it may be approached and adapted for the local waterways of the Cullyhanna, Forkhill and Castletown sub-catchments.

Further topics discussed by the group were in relation to the aesthetics of the area, such as a general clean up (cutting back shrubs and litter picking) along the rivers and lakes. Tidying up the existing walkways behind the local shop in Mullaghbane, as currently it is unfit for purpose due to a slippery surface, with the possibility of extending the current walkway up to the graveyard was suggested as an additional action.

A final discussion topic was to include the lakes outside the Castletown sub-catchment in any future management actions. These lakes are located within the neighbouring Fane catchment and it was recognised that these lakes (Lough Patrick, Lough Philip, etc.) lay within Northern Ireland and were not utilised by the communities in the Republic of Ireland portion of the Fane catchment, thus highlighting the issue of cross boarder relations. Overall there was general agreement that attendees had a renewed enthusiasm for their local water ways as a result of this project launch.

5.2 Survey

A community survey was distributed at the launch workshop but due to the limited community attendance it was decided to circulate copies of the survey at the various other events being run as part of the project. Overall, a total of 25 surveys, consisting of 16 questions, were completed and returned and the survey questions are presented in Appendix 1. The first half of the survey questions related to the rivers and lakes in the three sub-catchments. The survey showed that 24% of respondents lived near or along a water body, with a further 28% of respondents stating that they enjoyed walking around their rivers and lakes (Figure 11a). Over 80% of respondents rated the health of their water bodies as being of good or average status (25% and 56% of respondents respectively), with only 8% attributing a poor status (Figure 11b). However, no definition of good,

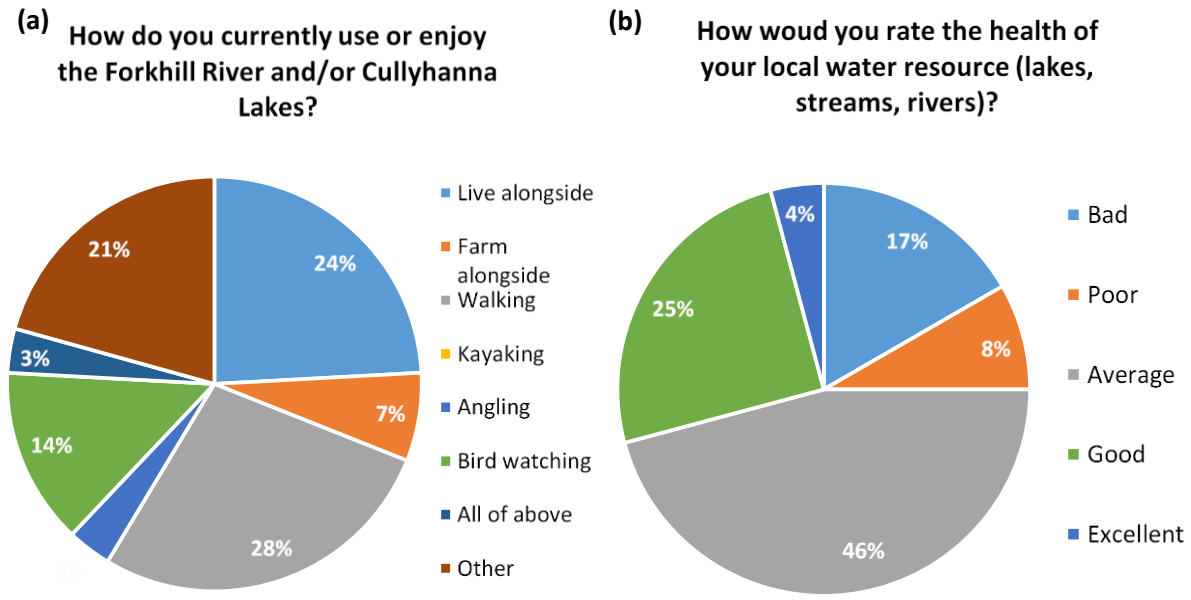

Figure 1: Survey question on (a) how are the rivers and lakes currently used or enjoyed, and (b) how would people rate the health of their river and lakes.

average or poor status was provided. Overall, 61% of respondents considered their water bodies to have changed over time, with the changes mainly attributed to more pollution and debris in the rivers (53% of respondents) (Figure 12a). When asked what changes people would like to see in their rivers and lakes, 44% of respondents suggested that the waterways should be cleaned while 16% of respondents desire better access to waterbodies (Figure 12b). The majority of respondents (79%) have never reported any issues they may have had with their water bodies, however, of the 21% of people who did report problems, all felt that their concerns were not dealt with in a suitable manner. When asked about the Newry Mourne local Biodiversity Action Plan, 70% of respondents were unaware of the plan, nor have ever partaken in any biodiversity related activities in their localities. However, 86% of respondents expressed an interest in knowing more about biodiversity and initiatives to be implemented under the Local Biodiversity Action Plan.

Landowners bordering the lakes and rivers in the sub-catchments were asked what influences their land use, with 63% or respondents reporting problems with flooding and the remaining experiencing issues with erosion. Overall, 67% of land owners farm lands in the sub-catchments, with 47% of farm land attributed to cattle and 40% sheep farming practices. Farms in the sub-catchments ranged from less than 25 acres (38%) to between 25 to 75 acres (50%).

5.3 Free soil testing

Less than 10% of farmland within Northern Ireland has up-to-date soil analysis, with less than 64% not being at optimum pH 6.5 (DAERA, 2014). The project proposal of free soil testing was

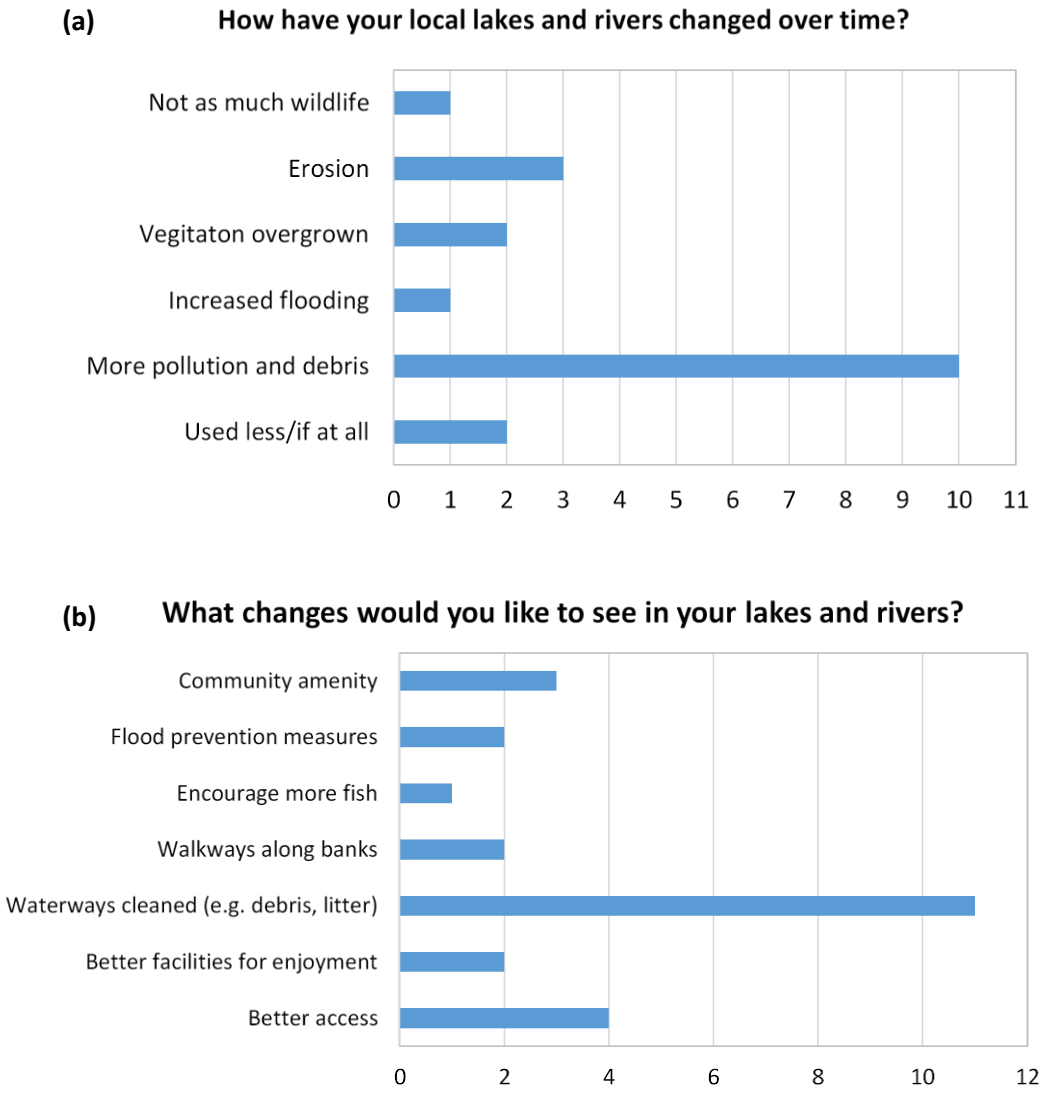

Figure 2: Survey question on (a) changes seen in the local water bodies, and (b) what changes people would like to see in their local water bodies.

intended to help farmers within the overall study sub-catchments to improve their overall soil health; deliver a better environmental performance; and potentially reduce nutrient run-off to local waters. A total of 17 participants availed of the free soil testing. Individuals were initially very sceptical of the incentive even when informed that any information collected would be anonymous and that there would not be any enforcement repercussions resulting from participation. Results of the soil nutrient analyses were not available at the time of delivering this report.

5.4 Schools engagement

The children were very enthusiastic and really enjoyed partaking in the art media engagement exercise. The children had limited memories of themselves enjoying the rivers and

lakes, highlighting the disconnect children have with their local water resources as expressed by the adults who attended the first workshop. However, the visions put forward by the children were similar to those discussed with the older generations in the community. The children showed real responsibility in creating their visions for their rivers and lakes and were delighted that their voices and opinions mattered to the community. The overall vision, which has a very clear message, derived by the children was:

"Clean our water."

A total of 36 visions were created by the children in the community, which could be summarised into four main categories: angling, nature, aesthetics and recreational. Examples of the visions developed by the children were:

- Provision of nature lookouts
- Removal of overgrown vegetation
- Provision of camping sites along the rivers and lakes
- Partaking in canoeing and water safety events
- Swimming in the lakes
- Litter picking

5.5 River restoration course

The river restoration course was attended by 11 people. The course provided much insight into the various river restoration methods available in particular in relation to flood management and how these approaches have been adopted by other catchments to try and restore rivers to their natural state. It allowed people to see how the various approaches have either worked or failed, and what the causes for these successes and failures may be. People were very engaged and asked many questions in relation to flooding problems associated with rivers in their own areas, and possible solutions which may be available to them.

5.6 StreamScapes mini-environmental fair

Throughout the day, people passed through the hall of the Cullyhanna Community centre to visit the various stands and displays set up relating back to theme of the local rivers and lakes. Exhibits ranged from wildlife photography to identification of native trees, animals and bugs living within or around the local waterways. People were excited to see the various displays and spent a great deal of time walking around and partaking in the various activities. Children in particular enjoyed the eco art activity, which involved making and decorating fish made out of willow, allowing the parents and guardians to walk around the room at their own leisure. On asking various

community members if they found the event enjoyable and informative the general consensus was very positive, with people expressing an interest in attending further such events.

5.7 Final workshop

The final workshop focused on delivering the outcomes of the project and in particular presenting the community-led vision for discussion and comment. The meeting was well represented with a total of 35 community members participating. Overall people seemed very pleased with the visions developed by the Shared Waters-Shared Landscapes project, and found that the overarching vision represented the feeling of the community with regards to their waterways. However, significant concerns were raised in regards to land ownership and public access to water bodies, with the primary concern relating to the responsibility and rights of landowners in the event of an accident occurring on their land. One participant was concerned that including access in the overarching vision suggested that access is open to all, whereas access can only be achieved if agreed by multiple parties.

Further concerns shared by the group related to:

- Government bodies not working together with communities to achieve the same goal when it comes to utilising the waterways.
- Where and how assistance may be gained in order to put these visions into action?
- Would fly tipping (identified as an issue in the sub-catchments) increase, particularly if creating parking facilities to improve access to water bodies?

Overall attendees felt that the process of involving the community to discuss and develop a shared vision was an important step in order to utilise the lakes and rivers within their sub-catchments, as currently people feel the waterways are being underutilised.

6. Creating a community-led vision

The data collated from each of the engagement initiatives undertaken throughout the project was used to develop an overarching vision for the local waters of the Castletown, Cullyhanna and Forkhill sub-catchments:

> ***"We want our waters to be clean and full of life, with access agreed by all parties, to enable learning and safe play, and which are the pride of the region."***

This overarching vision is underpinned by four key visions:

"We want better access along our rivers and lakes"

Community members identified a desire for more paths along river banks, platforms around lakes for angling and improved off-road car parking facilities. This may help encourage local people and tourists to come and experience the beauty of the region's environment. The complex and sensitive issue of land ownership and liability for gaining access to the rivers and lakes is recognised, with the location, design and management of any new facility, requiring input from community members. These issues relating to freshwater access have also been highlighted in the local council report, through proposed plans for the potential development of a long distance 'Blueway'. However, this proposal is yet to be fully recognised and embraced (NMADDC, 2017). Furthermore, the local council are working to identify strategies which will improve access to freshwaters particularly in areas where tourism could benefit, and these may apply to the sub-catchments of this study.

"We want cleaner rivers and lakes"

Reducing pollution, litter and debris within and along the banks of local waters, as well as removing overgrown vegetation causing obstruction were identified as important issues. Pollution entering rivers comes from a variety of different sources, so reducing pollution requires the co-operation of government departments, businesses, land owners, households and visitors to the area. The community have expressed interest in becoming more involved in taking action and responsibility of their own water resources, and have conveyed a particular interest in developing a community river and lakes group, which may be able to co-ordinate such activities. There is potential for such a group to feed into the larger Dundalk Bay Rivers Trust/Catchments Partnership that is currently in the process of developing.

"We want to educate the children about our rivers and water safety"

Educating young people about the rivers and the safety associated with them was identified as an important component for providing a legacy for future environmental stewardship. There is a perception among community members that many within the community are not aware of their local water resources and that children are key in overcoming this disconnect. The community have voiced that they would like to bring water-related education to the classroom as well as developing projects to take them out to explore their local waters. Through educating the children it may inadvertently bring back the love of a lost generation with their local environment.

"We want to increase tourism to our lakes and rivers"

Community members stated that developing tourism around the waterways and lakes in the locality would help to develop both social and economic benefits for the region. People have seen such benefits being delivered in neighbouring catchments and feel that there is strong potential to develop similar initiatives in their own localities. The community have described how they are proud of the beauty and history associated with the area and would like to share this with others. The Newry, Mourne and Down Tourism Strategy 2017 – 2021 has highlighted the emphasis on developing new visitor experiences and that there is a market for increasing inland water-based recreational opportunities within the area (NMADDC, 2017). The community proposed the idea of developing waterway tours within the area in combination with the strong cultural heritage associated with the sub-catchments. Achieving the key visions associated with better access and cleaner waters, developing various recreational activities (e.g. angling and kayaking), would help to develop tourism in the area. Identifying future funding sources and developing key partnerships would help in achieving this vision. For example the Natural Resource Rural Tourism Initiative (NRRTI) has previously funded projects which help to develop sustainable tourism infrastructure particularly in the areas of lake surveys to establish angling potential and guided tours (NIEA, 2011).

7. Summary

The Shared Waters – Shared Landscapes Project has provided a focus for the communities of the Forkhill, Cullyhanna and Castletown sub-catchments to identify how their local waters can be managed and enjoyed into the future. The visions developed identify future pathways and initiatives that can help to bring social, environmental and economic benefits to the region. This project has provided the platform to show that local communities have a strong interest in their local waters and want to play a significant role in managing and protecting them into the future. Shared thinking and facilitating local community engagement in an integrated manner throughout the decision-making process will provide multiple short- and long-term benefits across local communities and governing agencies/local authorities. In addition, the overarching vision and underpinning key visions described above can be used to develop partnerships and leverage funding into the future.

7.1 Key learnings

A number of key learnings were identified throughout the course of the project:

1. People may initially be sceptical of externally-driven projects and subsequently a project may be slow to gain momentum. Government-branded initiatives may lead to fears of environmental enforcement. It is therefore important to establish a good relationship with key members of the community prior to commencing a project, particularly one of such short duration. Establishing relationships with key members of the different community groups (angling, farming, youth groups, women's groups etc.), may increase confidence within the community and minimise any outsider status.
2. Despite multiple avenues of promotion, community attendance at events was often limited. This may reflect the scepticism outlined in learning 1.; potential disinterest in the events provided; an inability to attend due to prior commitments; or a fear of being asked to commit time and/or money. Further avenues for successful event promotion need to be explored. An additional option which was not explored through this project is to give a short 5 – 10 minute summary of the project at various community group meetings (angling, farming, youth groups, women's groups etc.), allowing people to put a face and name to any associated promotional leaflets and posters distributed.
3. Involving children is crucial for engaging the wider local community, as by working with children it is possible to engage with other generations. Engaging local schools and getting them involved in this project provided an excellent avenue for raising awareness of the project and its aims and outputs. Furthermore, encouraging the enthusiasm of the children

and involving them in as many events as possible can attract parents and other family members to also attend events.

8. Recommendations

The following recommendations are made:

1. Use the overarching and supporting key visions to inform future partnership development and funding applications.
2. Tailor future funding applications to delivering actions designed to achieve the community visions.
3. Provide feedback to the local communities as to:
    a. How management actions are being developed to achieve the visions.
    b. How community members can be involved in management actions.
4. Develop a communications and engagement delivery strategy that can be used for future engagement projects.
5. Continue to engage landowners in the region to work towards further improving local land and nutrient management.
6. Encourage community involvement with the currently developing Dundalk Bay Rivers Trust/Catchment Partnership.
7. Explore the potential for the formation of a local community environmental group that can operate independently of governing agencies. This may be a stand-alone group, or one that is associated with the currently developing Dundalk Bay Rivers Trust/Catchment Partnership.
8. Establish an annual community water-related event such as an environmental fair or water festival to maintain interest and involvement in local water resources.
9. Appropriately monitor all future engagement initiatives and ensure that feedback loops are in place to inform adaptive management of future actions.

9. References

DAERA (2014). Delivering Our Future, Valuing Our Soils: A sustainable Agriculture Land Management Strategy for Northern Ireland. Department of Agriculture, Environment and Rural Affairs (Northern Ireland).

NMADDC (2015). Newry, Mourne and Down District Council Corporate Plan.

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Rolston, A, Jennings, E. and Linnane, S. (2016). "Towards Integrated Water Management (TIMe)". Report to the Environmental Protection Agency of Ireland. URL: http://erc.epa.ie/safer/resource?id=d23959f3-1cdf-11e6-ab63-005056ae0019.

Appendix 1

Shared Waters - Shared Landscapes

Consent Form

This questionnaire forms part of the Department of Agriculture, Environment and Rural Affairs project entitled Shared Waters – Shared Landscapes, funded through the Northern Ireland Environment Agency's Challenge Fund. Working in partnership with the communities of Mullaghbawn and Cullyhanna, the project aims to raise awareness of local water quality issues and to develop a community-led vision for the Mullaghbawn and Cullyhanna catchment areas.

One of the key deliverables of this project is to undertake a survey to gain a better understanding of past and current land uses and management practices within the Mullaghbawn and Cullyhanna catchment areas.

As a member of the Mullaghbawn and Cullyhanna community, you are invited to participate in this questionnaire.

Your participation in this project is voluntary. You may choose not to participate. If you choose to participate in this survey you may withdraw at any time by returning the questionnaire to one of the project facilitators. You will not be penalized for withdrawing from this survey.

The procedure involves completing this questionnaire, which will take less than ten minutes and when finished handing it back to one of the project facilitators. Your responses will be confidential and identifying information such as your name, address or email will not be collected.

The results of this survey will be used solely to inform the Shared Waters – Shared Landscapes Project. You will not be identified in any report or other publication resulting from the project.

If you have any questions about the research study, please contact one of the project facilitators. Further queries may be forwarded on to therese.hamill@nmandd.org.

By continuing with this questionnaire, you provide consent of participation.

1

Shared Waters - Shared Landscapes

Introduction

The Shared Waters – Shared Landscapes project focuses on the Forkhill River which runs through the Mullaghbawn and Cullyhanna Catchment in County Armagh. The Forkhill River feeds into the larger overall catchment of Dundalk Bay. This project aims to actively engage the Mullaghbawn and Cullyhanna communities to come together and develop a shared vision for their local waters. As well as providing local environmental benefits, implementing this vision will, in time, also help to create positive environmental impacts downstream. Additionally, the outcome of this project aims to highlight the importance of community-led involvement in managing local environments.

This survey will allow us to gain a better understanding of past and current land uses and managment practices within the Forkhill and Cullyhanna catchment areas allowing us to help the communities to move forward and achieve their visions.

Shared Waters - Shared Landscapes

Survey Questions

1. How do you currently use or enjoy the Forkhill River and/or Cullyhanna Lakes?
(If appropiate tick more than one)

- ◯ Live alongside or near the river or lakes
- ◯ Farm alongside or near the river or lakes
- ◯ Walking
- ◯ Kayaking
- ◯ Angling
- ◯ Bird watching
- ◯ All of the above
- ◯ Other

2. If other can you please specify:

3. How would you rate the health of your local water resources (lakes, streams, rivers)?

Bad ☆ ☆ ☆ ☆ ☆ Healthy

4. In your view have your local lakes or rivers changed over time?

- ◯ Yes
- ◯ No

5. If so how have they changed?

3

6. What changes if any would you like to see in your lakes or rivers?

7. Have you reported any problems or concerns you may have had about your lakes or rivers?

- ◯ Yes
- ◯ No

8. If so did you feel your concern was responded to in a suitable manner?

- ◯ Yes
- ◯ No

9. Are you aware of the Newry and Mourne local Biodiversity Action Plan?

- ◯ Yes
- ◯ No

10. Have you ever been involved with any biodiversity related activities in the Mullaghbawn / Cullyhanna area?

- ◯ Mullaghbawn
- ◯ Cullyhanna
- ◯ Both
- ◯ No

11. Would you be interested in knowing more about biodiversity and initiatives under the local Biodiversity Action Plan?

- ◯ Yes
- ◯ No

12. If you own land bordering the Forkhill River or Cullyhanna Lakes do you feel one or more of the following can influence how you use your land?

(If appropriate tick more than one)

- ◯ Forestry or woodland
- ◯ Flooding
- ◯ Erosion
- ◯ Wetlands/Bogs

Other (please specify)

13. Do you farm in the the Mullaghbawn / Cullyhanna area?

- ◯ Yes
- ◯ No

14. If so what are your main farming practices?

- ◯ Cattle
- ◯ Sheep
- ◯ Pig
- ◯ Poultry
- ◯ Arable
- ◯ Other

15. What is your approximate farm size?

- ◯ less than 25 acres
- ◯ 25 to 75 acres
- ◯ 75 to 125 acres
- ◯ 125 to 225 acres
- ◯ greater than 225 acres

16. Do you have any further comments regarding your local water resources (rivers, lakes and streams)?