NS 2 FRESHWATER PEARL MUSSEL SUB-BASIN
MANAGEMENT PLANS

REPORT ON MORPHOLOGICAL MONITORING AND
CATCHMENT WALKOVER RISK ASSESSMENTS IN THE
GLASKEELAN CATCHMENT

September 2009
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1.0 INTRODUCTION

In order to assess the hydromorphological alterations within the Glaskeelan catchment the EPA WFD classification tool called the River Hydromorphology Assessment Technique (RHAT) was utilised by RPS. This tool was developed through the North South Share project, to classify rivers in terms of their morphology. It is a field technique which assigns a channel typology. This influences the rivers physical attributes assessed in the field. The technique assigns a morphological classification directly related to that of the WFD – high, good, moderate, poor and bad.

RHAT surveys were carried out at high risk areas located within pearl mussel populations. The methodology classifies river hydromorphology based on a departure from naturalness, and assigns a morphological classification, based on semi-quantitative criteria. It is designed to be a rapid visual assessment based on information from desktop studies, using GIS data, aerial photography, historical data and data obtained from previous field surveys as well as observations in the field.

A catchment walkover risk assessment survey sheet was also designed by the project team in conjunction with NPWS in order to focus the collation of the pressure data in the field with respect to the Freshwater Pearl Mussel. The risk sheet was divided into eight categories designed to highlight the main pressures within the catchment. The eight categories are as follows:

- Source of erosion
- Diffuse Nutrient
- Diffuse Silt
- Current Riparian Zone
- Field Drainage
- Outfalls
- Abstractions
- Barriers to Migration
Each sub-pressure within the eight categories is analysed and an overall risk assessment of High, Medium or Low is assigned to that category. The “one out all out principle” is then used to assign the river stretch or point an overall risk category. A detailed description, together with a series of photographs outlining the pressures is also taken. The risk assessment sheets will assist the project team in focussing the specific freshwater pearl mussel measures within the catchment.

Location of survey stretches and points are shown in Figure 1

2.0 METHODOLOGY

Sampling was carried out on the 28th of May 2009.

2.1 CATCHMENT WALKOVER RISK ASSESSMENT

During the development of the draft sub-basin management plans throughout 2008 a complete desk study was conducted of all relevant biological, water quality and pressure source data within the Glaskeelan catchment. Best use was made of all available datasets such as the pressure source data collated by the River Basin District Projects for the Article V Characterisation and Programme of Measures Studies. This work allowed the NS 2 project team to assess the catchment through the combined availability of aerial imagery and digitised pressure information. Where gaps in this data existed together with areas that required ground truthing such as physical barriers to migration, catchment walkover risk assessments were focussed throughout the 2009 field survey season.

The catchment walkover risk assessment sheet (See Appendix 3) covers eight main categories or pressures which are subsequently sub-divided into the various sources. Each source is ticked if present and an overall risk assessment for each pressure assigned from High to Medium to Low over the survey length or point. All eight pressures are combined to give an overall risk assessment to the catchment based on the “one out all out principle”.

4
3.0 RESULTS

3.1 Catchment Walkover Risk Assessment Results

A total of three sites were surveyed in the Glaskeelan sub-basin catchment, with a risk assessment carried out at all three of these sites. Figure 1 outlines the locations of the High to Low Risk Assessment from the Catchment Walkover Risk Assessments. Two high risk sites were recorded out of the three that were assessed. The remaining site was recorded as medium risk, meaning no low risk sites were recorded within this catchment. Figure 2 outlines the percentage of sites classified at high and medium risk throughout the catchment.

The most frequent high risk category identified was:

- Diffuse Nutrient – evident at 100% of high risk sites,

The most common source of diffuse nutrient was forestry evident at both high risk sites. A break-down of the individual sources of diffuse nutrient at high risk sites is given in Figure 4.
Figure 1 Location of Catchment Walkover Risk Assessments
Figure 2 Risk Assessment Overview

The break-down of pressure categories identified as high risk are outlined in Figure 3

Figure 3 Breakdown of High Risk Categories
Some representative photographs for the three sites which were surveyed can be found below.

**Site 1, Photo 2 – New and old forestry**

**Site 2 – Photo 7 Deep slow moving channel – possible historically drained.**
Site 3, Photo 5 – Old stone culvert

Site 3, Photo 6 – Peaty soils, peat stain channel
4.0 CONCLUSIONS

The Glaskeelan sub-basin catchment is the smallest Freshwater Pearl Mussel sub-basin catchment in Ireland. As a result only three risk assessments were undertaken with two being carried out in locations where Freshwater Pearl Mussel populations are known to exist. Both these risk assessments were high risk with the remaining medium risk site located further upstream. Diffuse nutrient appears to be the greatest issue within this catchment with forestry detected at all high risk sites. If this pressure can be remediated it will greatly assist this catchment in returning to favourable conservation status.
APPENDIX 1

PHOTOGRAPHS

Photographs of site locations and catchment pressures on the Glaskeelan River and tributaries 2009. All field work photographs can be found in the accompanying electronic appendix.

Overall Risk * uses the “one out all out” principle
<table>
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<th>Site No.</th>
<th>Catchment Name</th>
<th>Location</th>
<th>X</th>
<th>Y</th>
<th>Photo No.</th>
<th>Bank Erosion</th>
<th>Diffuse Nutrient</th>
<th>Diffuse Silt</th>
<th>Field Drainage</th>
<th>Outfalls</th>
<th>Abstraction</th>
<th>Barriers to Migration</th>
<th>Current Riparian Zone</th>
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<th>Pressure/Photo Details</th>
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*Overall Risk: High, Medium, Low
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Peaty soils and peat staining
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**Photograph details include IGR or approximate location.**

* Select as appropriate
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