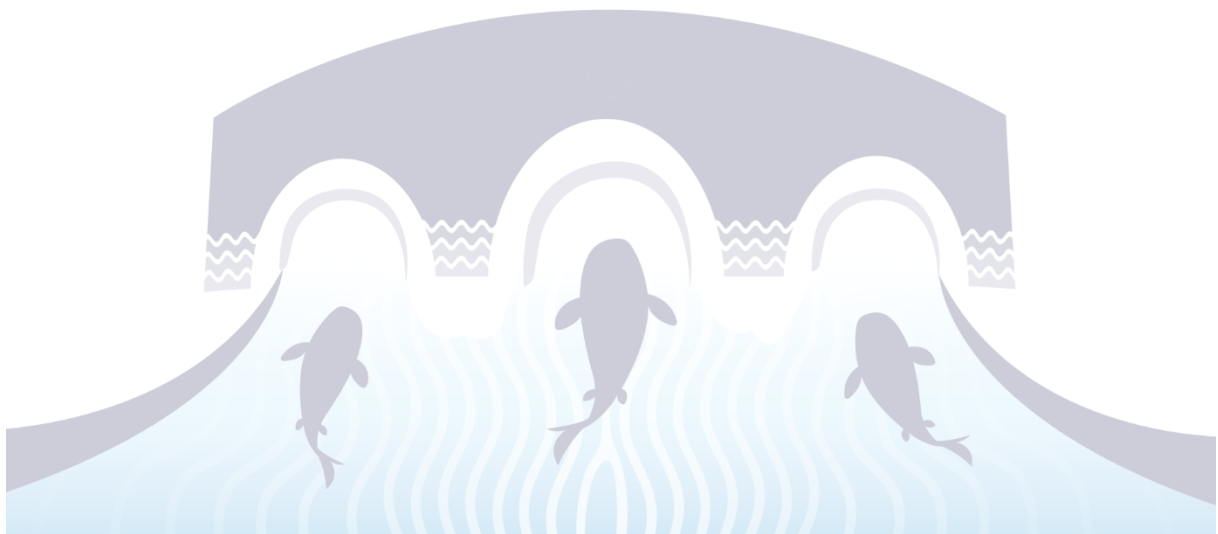




National Barrier Mitigation Programme

Barrier Mitigation Division

Barrier Photo Guidance



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1 Introduction

This document has been produced by Inland Fisheries Ireland to provide guidance for capturing on-site information on existing barrier structures. The main focus is given to photographic methods but measurement techniques, environmental issues and health and safety items are also mentioned.

2 Environmental, Health & Safety Concerns

IFI will not be responsible for people entering the water without adequate water safety training. Prior to attending site to carry out any work close to rivers or lakes the following items must be considered and addressed where applicable.

- Risk Assessment
- Safety work plan, two-person teams (Figure 1)
- Radio/mobile phone comms.
- Approvals & permissions
- Training
- Suitable PPE
- Need for biosecurity precautions to prevent spread of invasives (Figure 2)
- Low flow conditions provide the optimum situation for safe access and recording data (Figure 3)
- Common sense should apply at all times when operating close to water!



Figure 1 - Safety talk



Figure 2 - Biosecurity measures



Figure 3 - Optimum low flow conditions

3 Photographic Records

Photographs are a valuable visual record of a river feature. Generally photos should record barrier feature from a range of angles to allow a desk-based person to gain a clear understanding of the nature and extent of the structure. The following guidance should be adhered to in order to achieve the necessary standard of capture.

- Full capture photos - full extent of the feature from a variety of angles (Figures 4 & 5)
- Quality sharp focus, clear, good contrast and colour balance. Avoid shadows and sun glare.
- All photos should be in digital format
- Scaling – Endeavor to include people, staff levels or ranging poles in photos where possible.
- Extra shots of specific features e.g. fish pass, riparian corridors, access issues etc. (Figure 6)
- Aerial shots – Depending on accessibility and the scale of a feature a drone plan and angle shots may be required to achieve the necessary level of detail. (Figure 7)
- Photos of any existing fish passage that is part of or close to the barrier should also be captured.
- Ideally five barrier photographs should be provided. (see following page for explanation)
- Where possible avoid any non-related obstructions blocking the view
- Do not try and capture information too far from the obstruction such that resolution and detail is lost.
- Include date and time stamp (access camera settings if not provided in image file properties)
- Activate geo location settings on camera, if possible



Figure 4 - Full extent capture



Figure 5 - Full extent - Left bank view*



Figure 6 – Close up details



Figure 7 - Aerial photo example of mill tail and head race

*Note: The left bank of a river is the bank on your left-hand side when facing downstream

3.1 Barrier location example

Generally five number photographs is enough to visually record a typical barrier. But more photographs can be taken depending on the complexity and detail of the obstruction. The five photos should show the downstream reach, upstream reach, full extent of barrier, specific feature (fish pass, sluice, etc.) and side bank view. The range of viewpoints shown in the following captures is a good example. The labelling terms and abbreviations shown should be used as shown in figures 8 to 12.



Figure 8 - Downstream capture (DS)



Figure 9 - Upstream capture (US)



Figure 10 - Side elevation (EL)

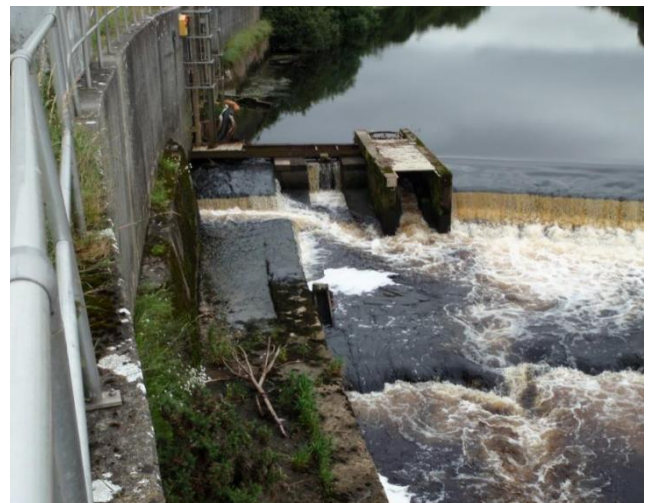


Figure 11 – Specific feature

*Figure 12 -
Zoomed in detail*



3.2 Providing Overall Scale

It is important to record the scale and extent of river barriers as this has a direct link to the extent of works, contractor resources, pricing and the quantity of material required. The following example show how the size of a structure can be measures using a telescopic levelling staff to provide a more accurate measurement reference (Figure 14)



Figure 14 - Use of levelling staff for detailed measurements

3.3 Detailed Measurements

Where access and safe conditions allow, it is usually necessary to record detailed measurements of the structure. Any combination of measuring tape, levelling staff (Figures 17 & 18) and laser measurement tools can be employed. GPS surveying equipment may also be used if required. The following photos illustrate how measurements are taken. Usually 2 or more people are needed to capture and record the information (Figures 15, 16, 18).



Figure 15 - Horizontal tape measurements



Figure 16 - Stream widths using tape measure



Figure 17 – Vertical staff readings height differences



Figure 18 - Using tape and staff to record

Culvert/Bridges Measurements for I-BAST survey

Information on measurements that can be provided where safe to do so are shown below for culverts or bridges. The plunge pool depth, downstream apron length, drop height and culvert or bridge width measurements are the most important measurements. See figure 20 for further information.

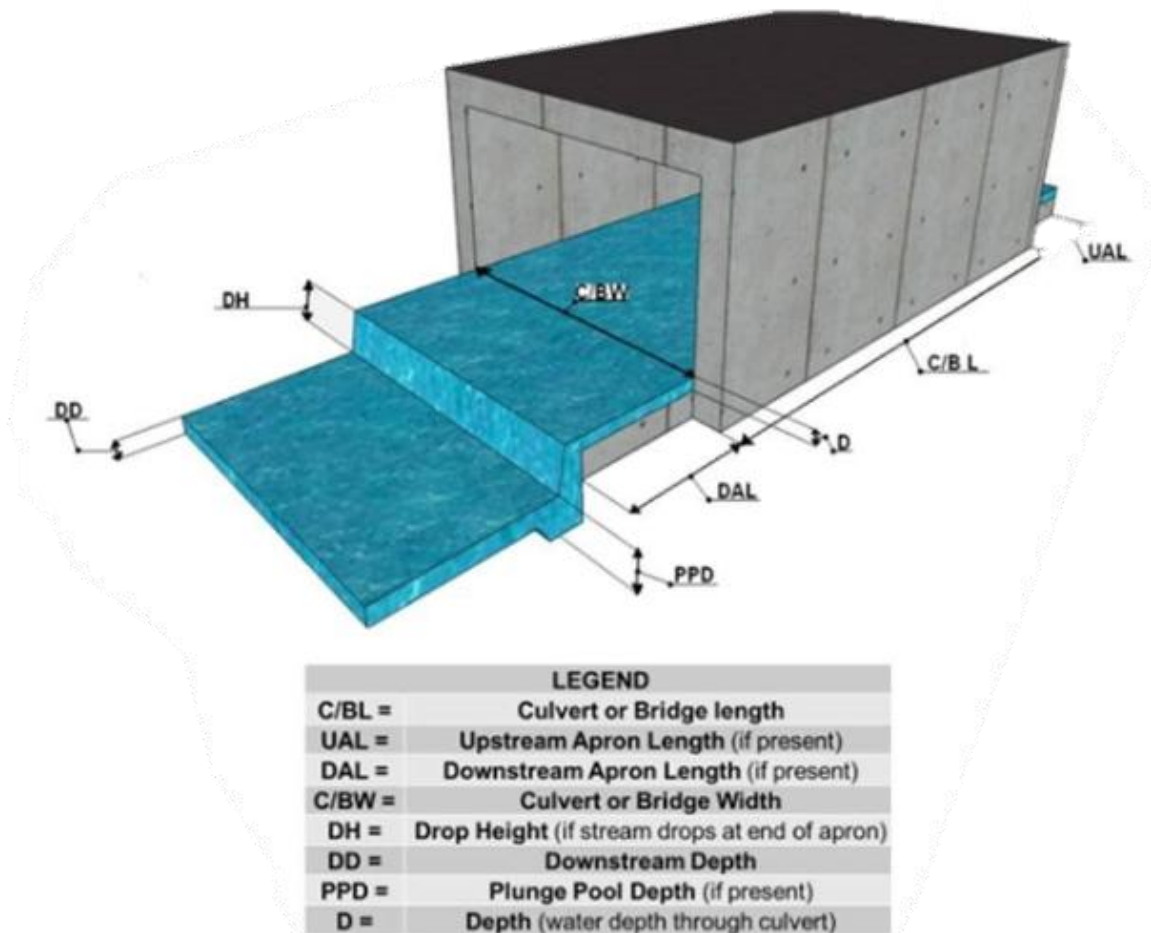


Figure 20 - Culvert measurements

Weir Barrier Measurements for I-BAST survey

Information on measurements that could be provided where safe to do so are shown below for weirs. The plunge pool depth, downstream apron length, barrier height and barrier length measurements are the most important measurements. See figure 21 for further information.

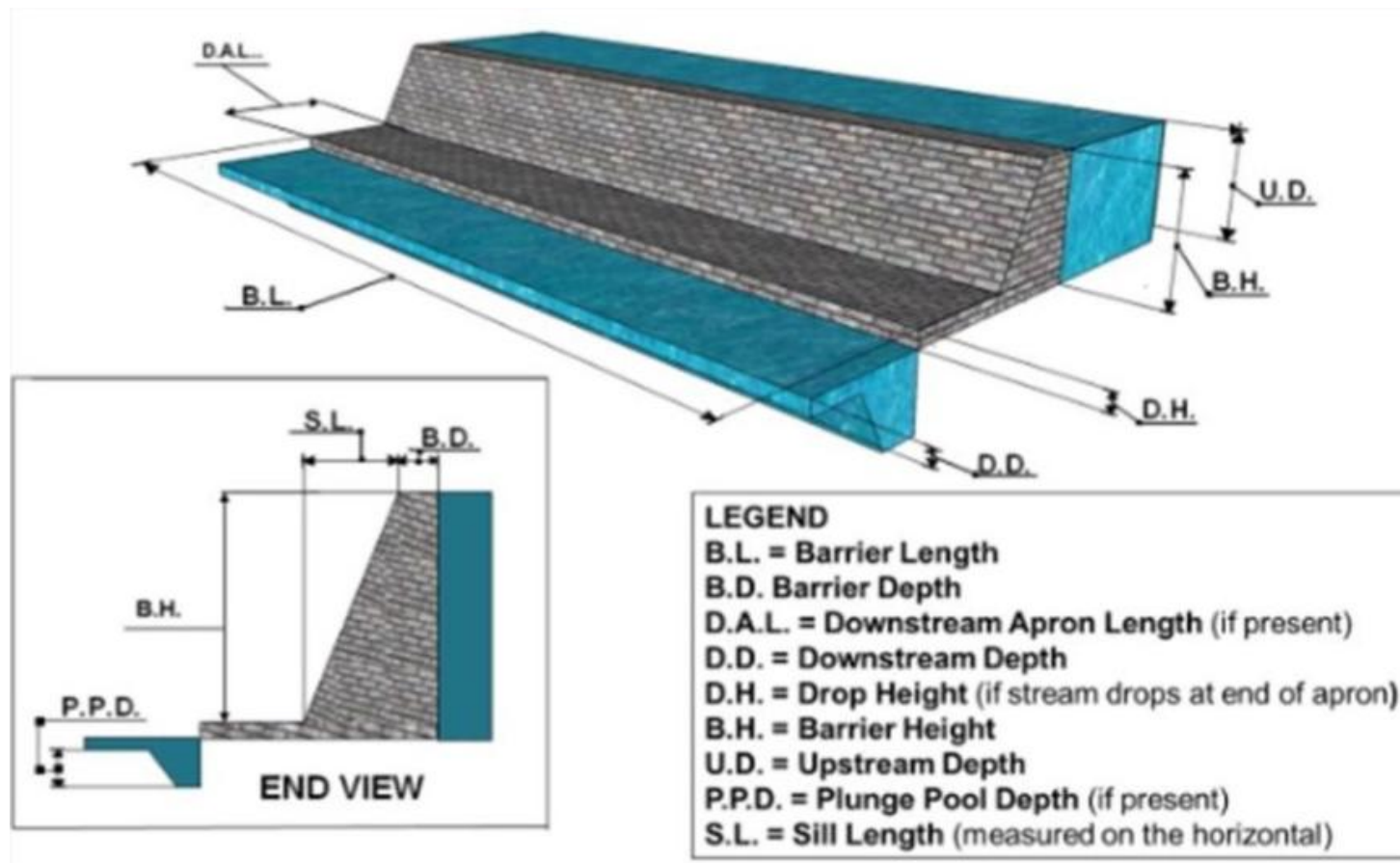


Figure 21 - Barrier measurements