Recommendations from I.F.I. to the Kilbride Anglers in relation to Salmon Enhancement Proposals for their leased Fishery on the Kells Blackwater.

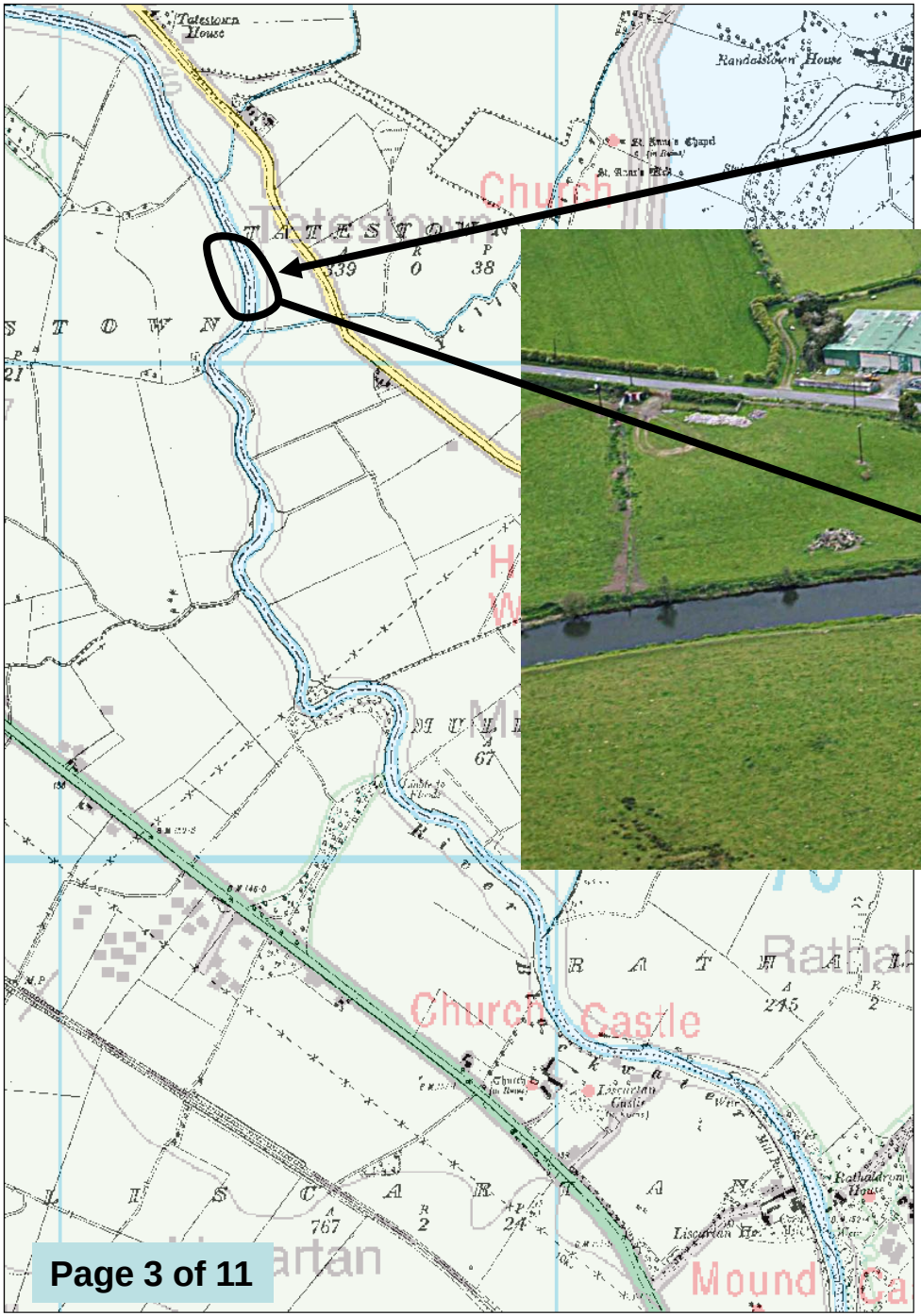
Prepared by I.F.I., July,2011

This documentation provides an outline plan for enhancing salmon stocks in specific reaches of this fishery. These proposals would benefit all life forms living in this river corridoor.Plans are provided here in order of their importance (capacity) to increase salmon production and benefit other aquatic species living in this S.A.C. – particularly, Otters, Lampreys and Kingfishers.

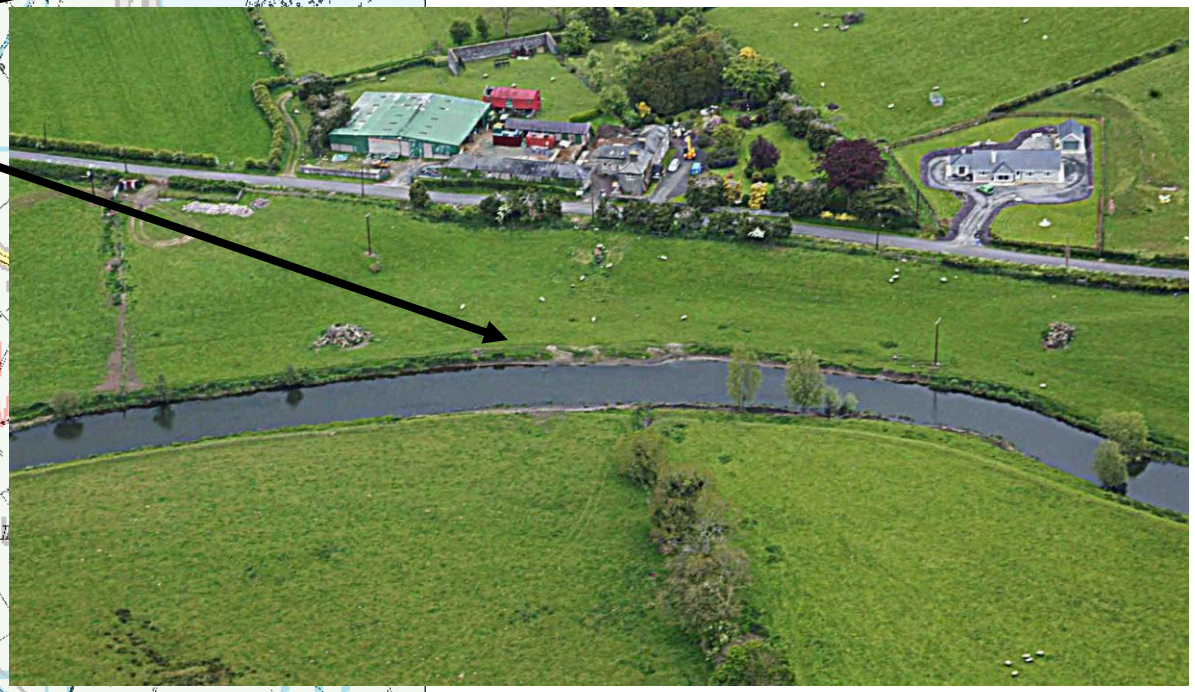
The location of the five most important reaches are illustrated and a detailed enhancement plan is provided for each reach. Additional enhancement plans can be generated for this fishery when further resources are available.

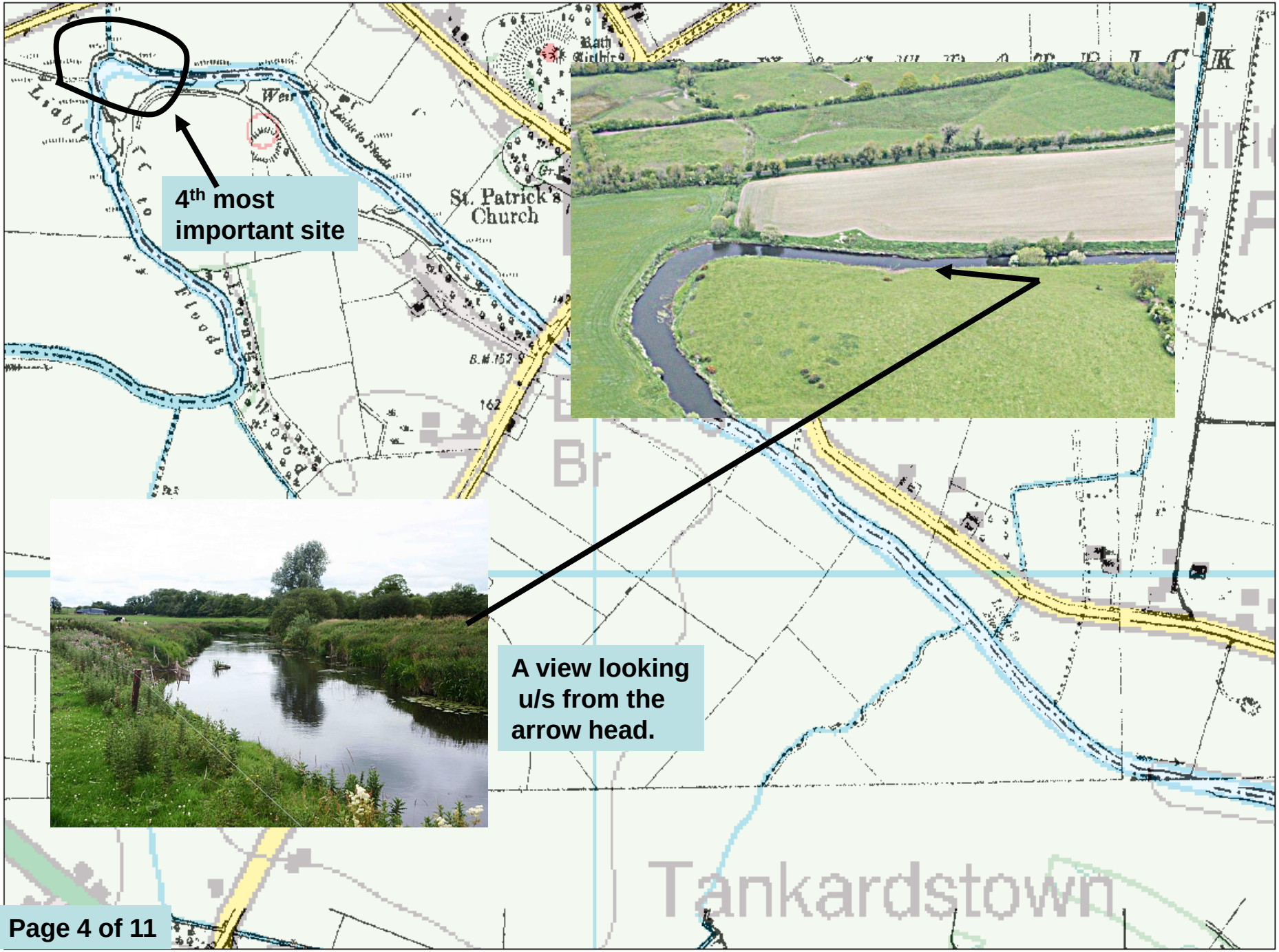
Those implementing this programme should have a copy of the guidance manual (Channels and Challenges), make reference to the detail in the appendix to this document and, most importantly, contact I.F.I. staff if they have any concerns about implementing any aspect of this programme.


This reach should be regarded as the No.1 priority in enhancement terms
No. 2 priority
Donaghpatrick Br.
St. Patrick's Church
Rectory
Parochial Hall
Weir
Tankardstown

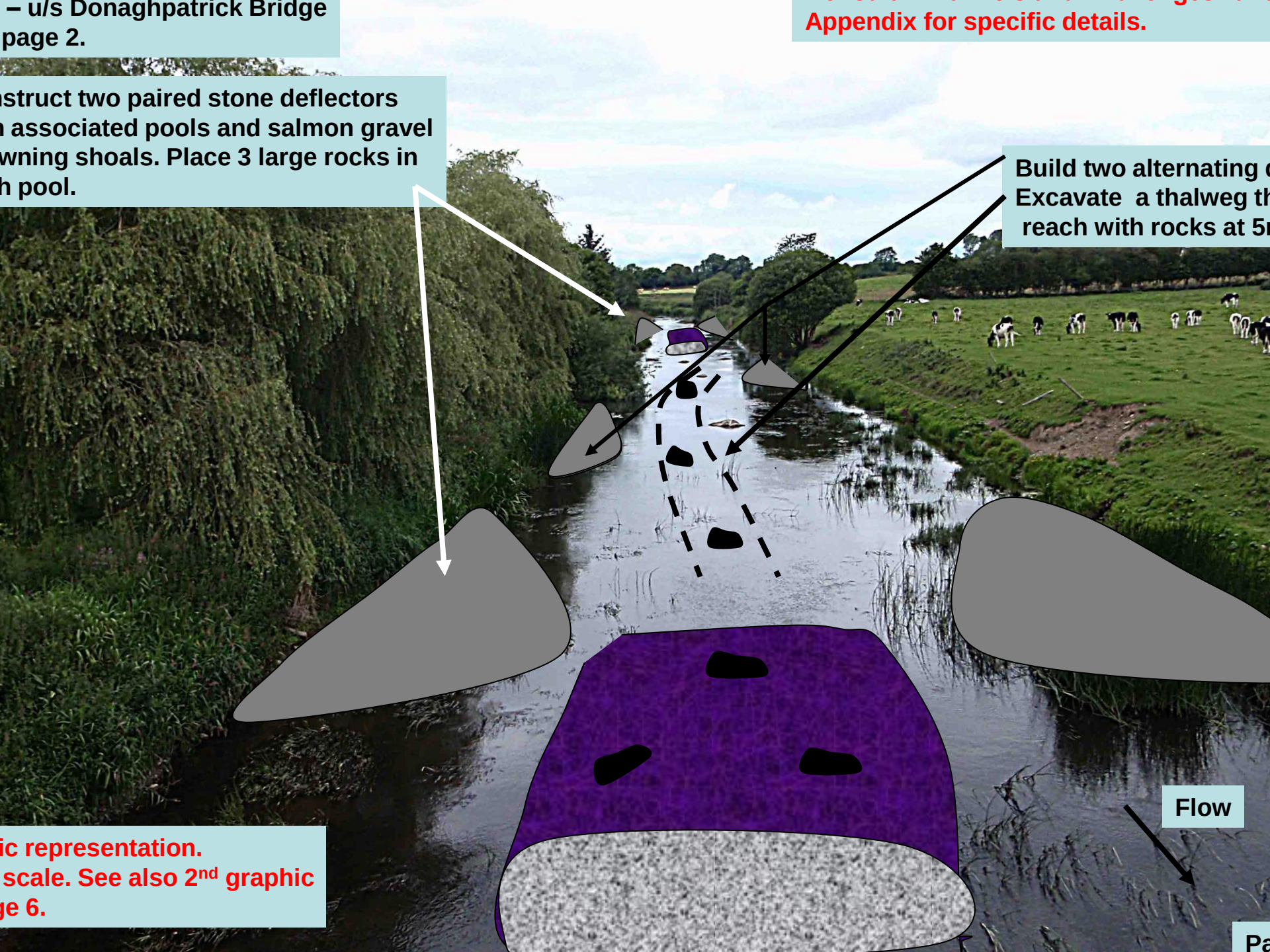


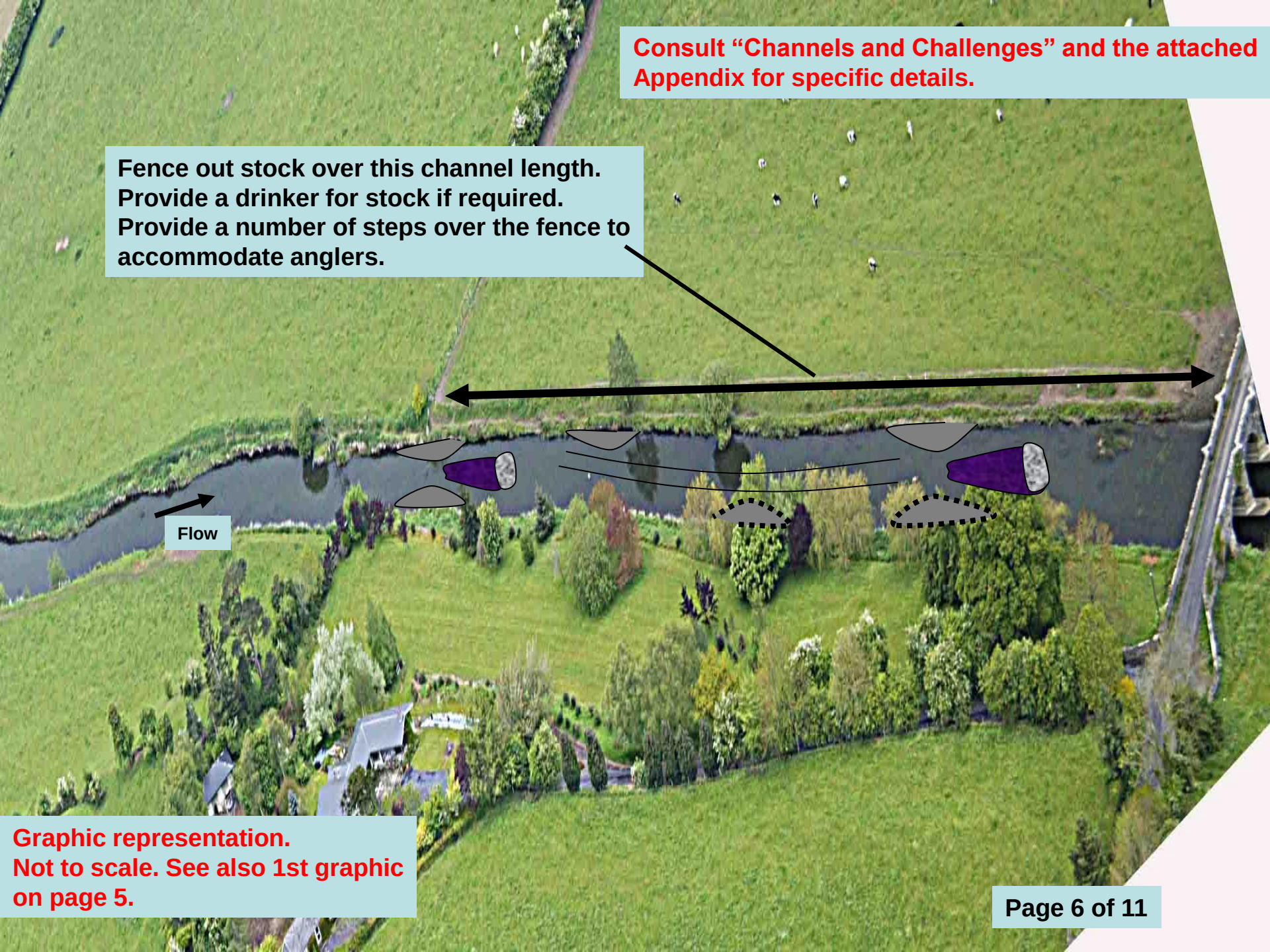
3rd most important site





A view looking u/s from the arrow head.


– u/s Donaghpatrick Bridge
page 2.
Appendix for specific details.
nstruct two paired stone deflectors
n associated pools and salmon gravel
wning shoals. Place 3 large rocks in
h pool.
Build two alternating
Excavate a thalweg th
reach with rocks at 5
ic representation.
scale. See also 2nd graphic
ge 6.
Flow


Consult “Channels and Challenges” and the attached Appendix for specific details.
Fence out stock over this channel length.
Provide a drinker for stock if required.
Provide a number of steps over the fence to accommodate anglers.
Flow
Graphic representation.
Not to scale. See also 1st graphic on page 5.

No.2 Site – d/s Donaghpatrick Bridge
See also page 2.

Construct a paired stone deflector with associated pool and salmon gravel spawning shoal. Place 3 large rocks in the pool.

Consult "Channels and Challenges" and the attached Appendix for specific details.

Graphic representations. Not to scale.

Site No.3 d/s
Donaghpatrick Br.
See page 3.

Graphic representations.
Not to scale.

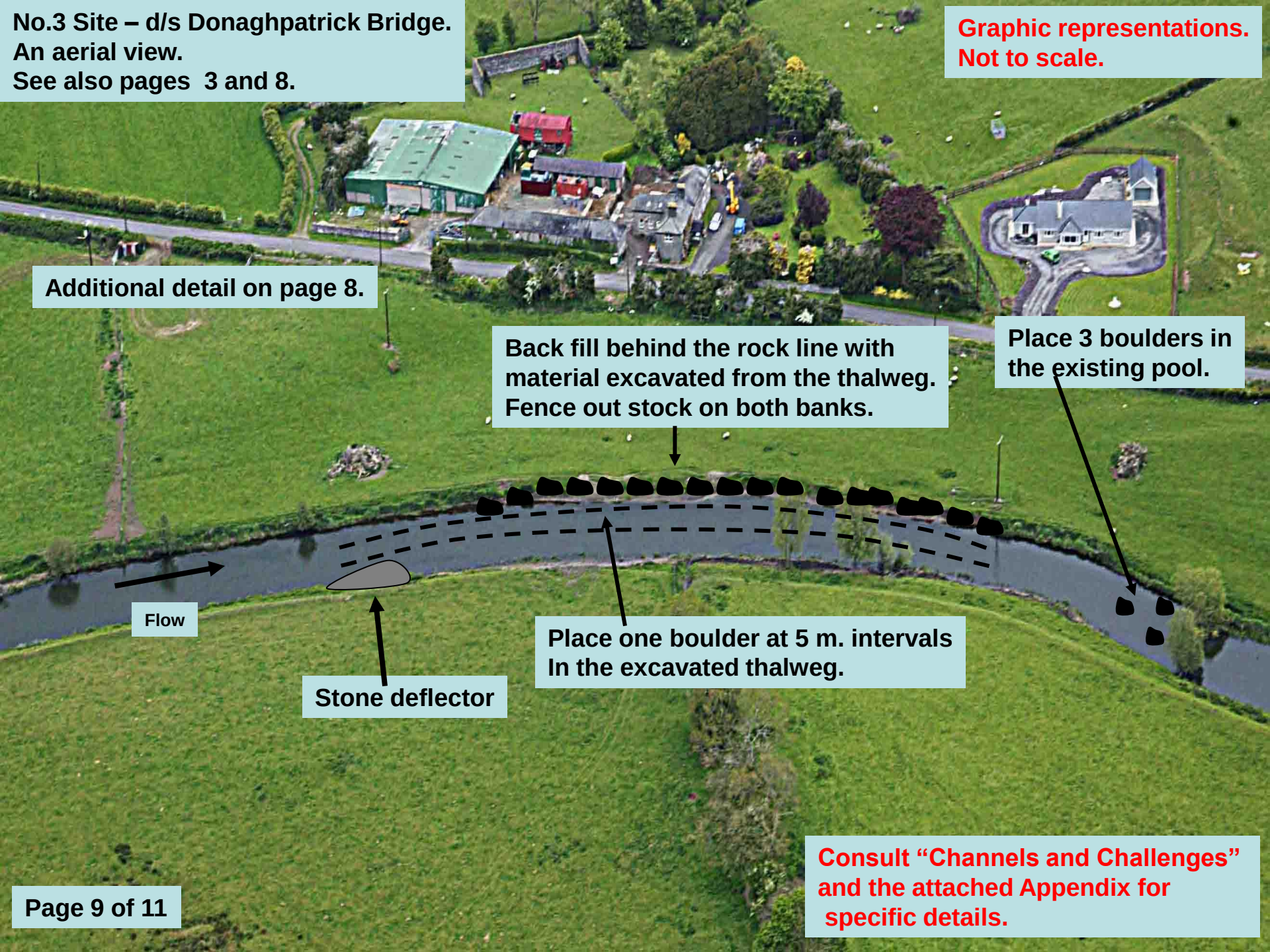
A photo taken looking d/s from the arrow head.

Construct a stone deflector

Flow

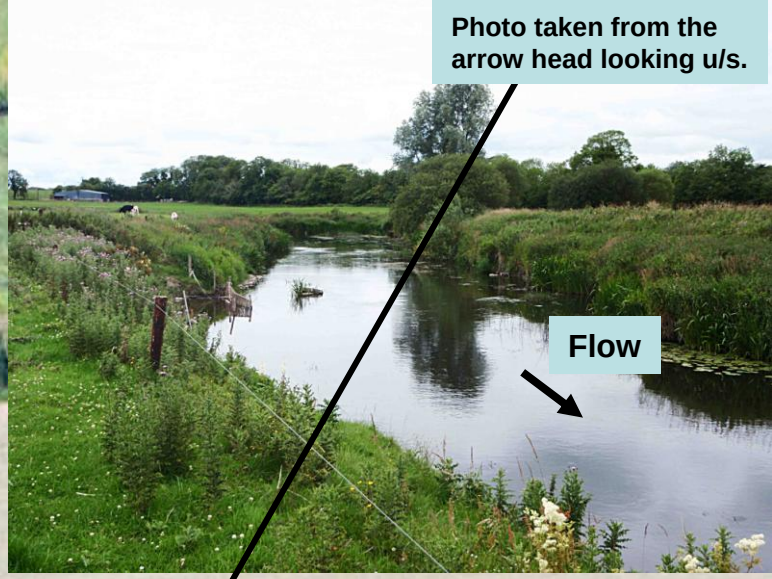
Excavate a trench along the “toe” of the trampled bank line. Place a continuous line of 1 tonne boulders in the trench. Excavate a thalweg 1/3 channel base width and back fill with this material behind the boulders to form a “new bank”. Plant this deposited material with willow slips. Fence out stock on both banks and provide “steps” for anglers. Provide drinking slips if required outside the works area. See page 9 for additional detail. See page 3 for location.

Consult “Channels and Challenges” and the attached Appendix for specific details.


No.3 Site – d/s Donaghpatrick Bridge.
An aerial view.
See also pages 3 and 8.
Graphic representations.
Not to scale.
Additional detail on page 8.
Back fill behind the rock line with material excavated from the thalweg.
Fence out stock on both banks.
Place 3 boulders in the existing pool.
Flow
Stone deflector
Place one boulder at 5 m. intervals
In the excavated thalweg.
Consult "Channels and Challenges" and the attached Appendix for specific details.
Page 9 of 11

Graphic representations.
Not to scale.

Site No.4 u/s of Donaghpatrick Br.
See page 4.



Rip rap the eroding bend with 2 tonne boulders – two stones high.

Construct a salmon gravel spawning shoal at the "tail" of the bend. Use 60 tonnes of suitable gravel.

Excavate a thalweg and place Boulders here circa 5m. apart. The thalweg should be circa 1/3 channel base width.

Build a proper cattle drink using large (3 tonne) boulders.

Construct a paired stone deflector with associated pool and salmon gravel spawning shoal. Place 3 large rocks in the pool.

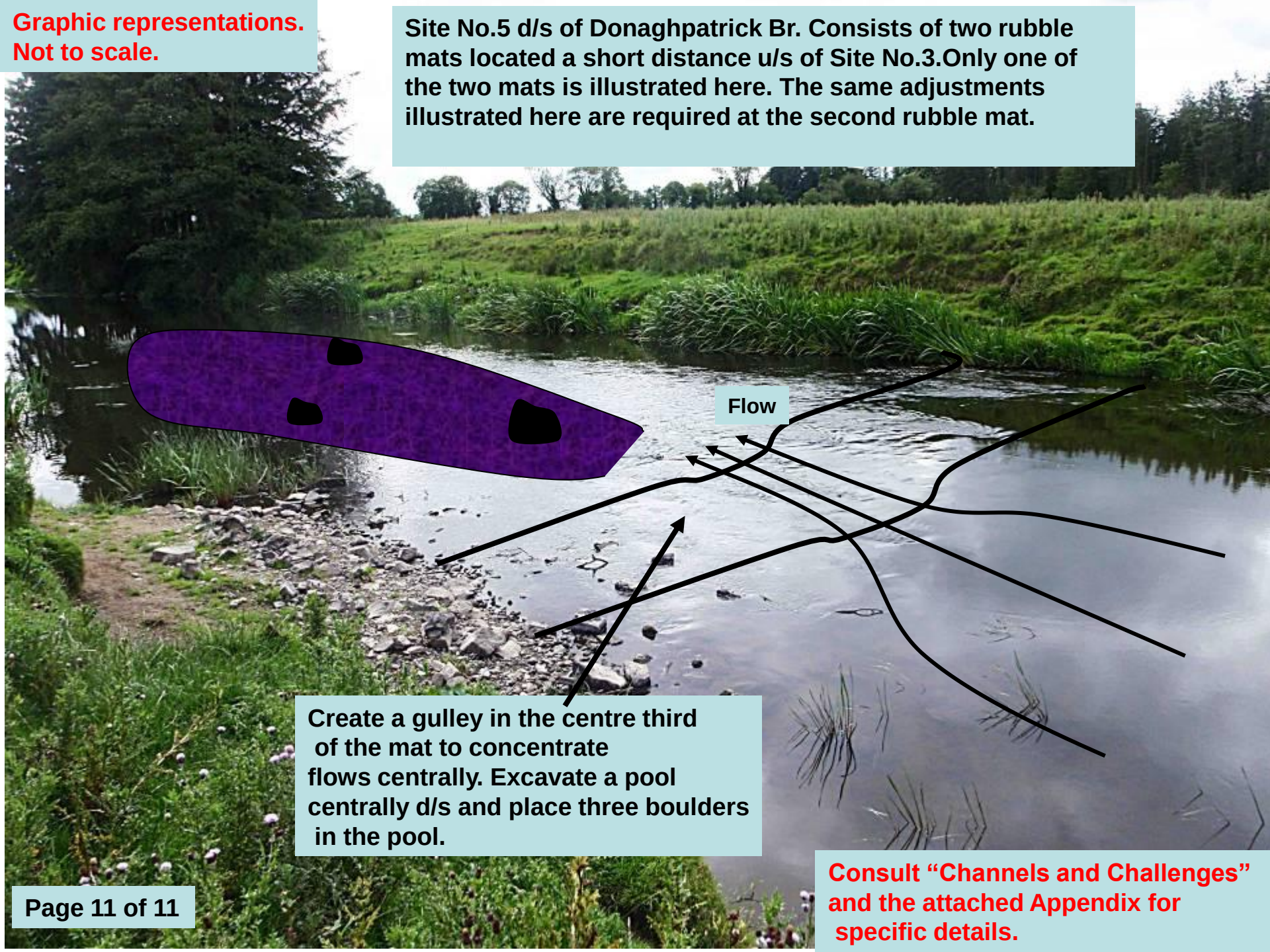
Flow

Construct a stone deflector.

Consult "Channels and Challenges" and the attached Appendix for specific details.

Graphic representations.
Not to scale.

Site No.5 d/s of Donaghpatrick Br. Consists of two rubble mats located a short distance u/s of Site No.3.Only one of the two mats is illustrated here. The same adjustments illustrated here are required at the second rubble mat.



Create a gulley in the centre third of the mat to concentrate flows centrally. Excavate a pool centrally d/s and place three boulders in the pool.

Consult “Channels and Challenges” and the attached Appendix for specific details.

Appendix to the Capital Works Programme designed for reaches of the Kells Blackwater River (Kilbride Fishery), July 2011.

The content of this appendix are intended to assist one in implementing this programme. Additional information is available in the publication "Channels and Challenges".

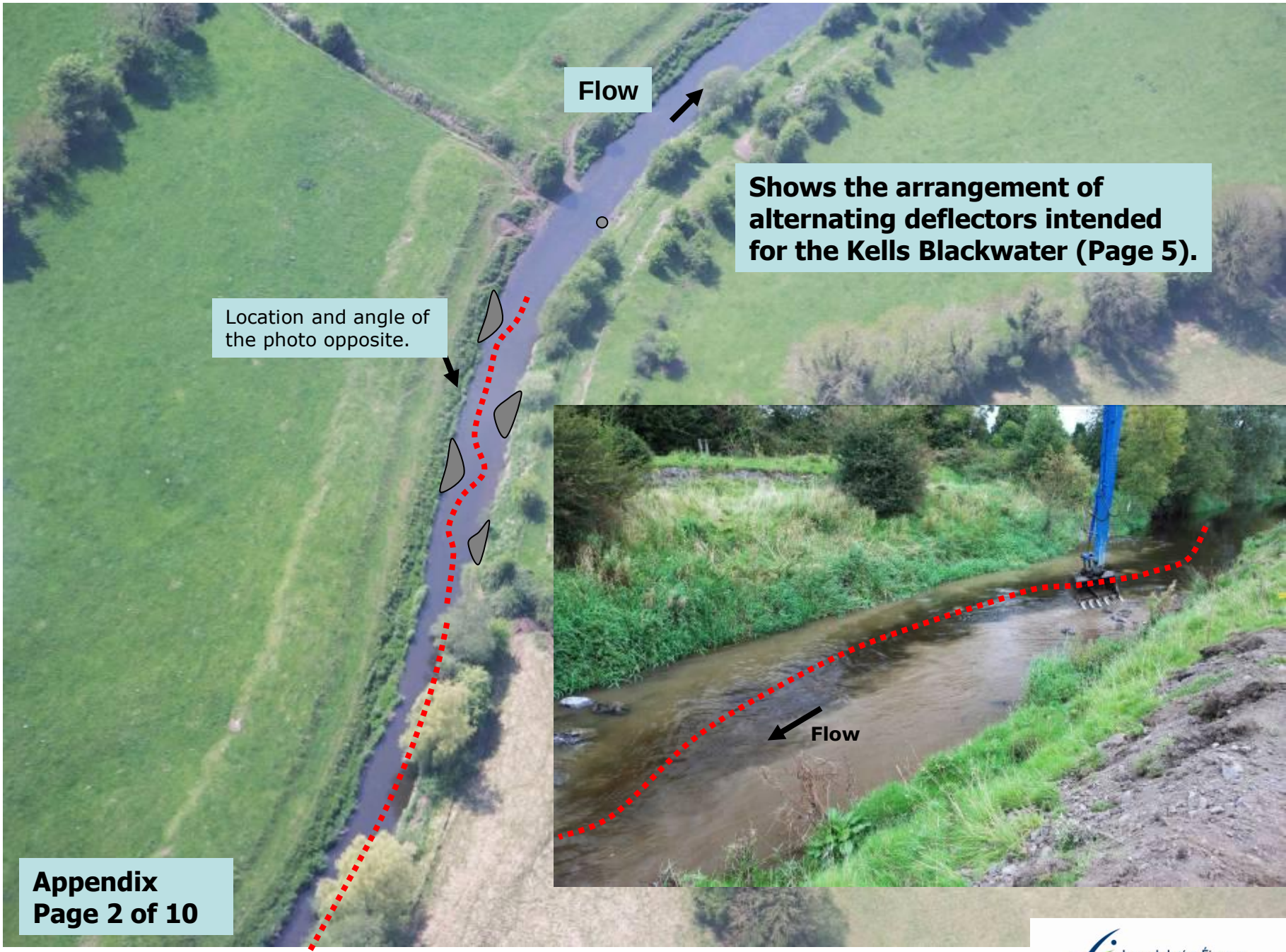
Some Specifics of importance in relation to the Stonyford Project

1. **The rocks used in the frame of all deflectors should be 1.5 to 2.0 tonnes in weight.**

2. **The area inside the frame of all deflectors should be filled with material excavated from the thalweg or newly excavated pool areas. If this material is soft and likely to scour in flood flows then it should be" blinded" on top with a layer of broken stone circa 30.0cm in diameter.**

3. **All boulders placed either in pools or in the thalweg should be 0.5 to 1.0 tonnes in weight and located subsurface. If a boulder is too high then get the machine to partially bury the stone in the bed.**

4. **Introduced spawning gravels should be a "mix" of stone sizes – use the mix described as salmon gravel on page 113 of "Channels and Challenges".**



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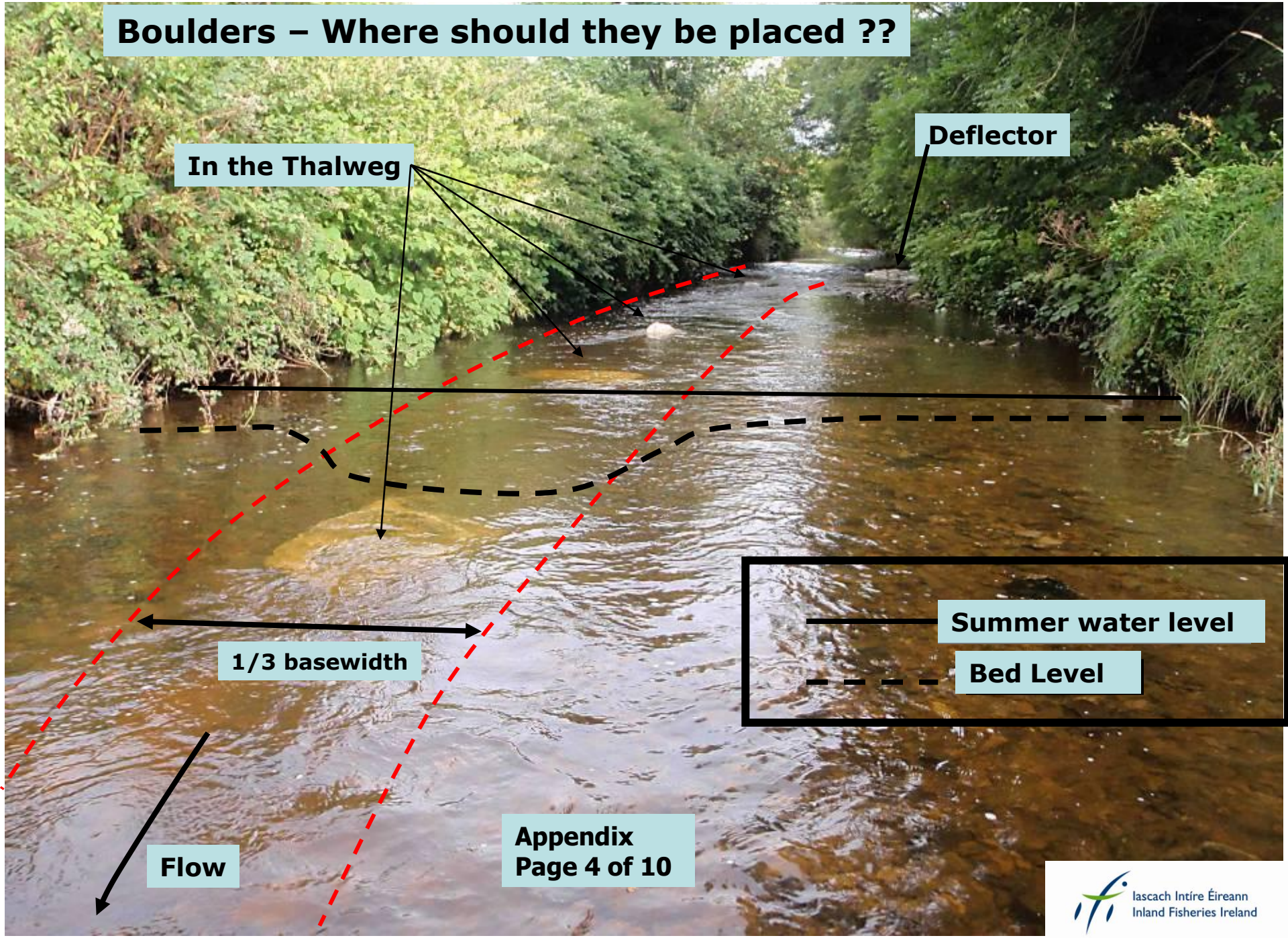
Another example of the ideal arrangement of deflectors for the reach of the Kells Blackwater. Note the placement of all boulders in the thalweg. See next page for an illustration of thalweg shape and size and boulder placement.


Boulders – Where should they be placed ??
In the Thalweg
Deflector
Summer water level
Bed Level
1/3 basewidth
Flow
Appendix
Page 4 of 10
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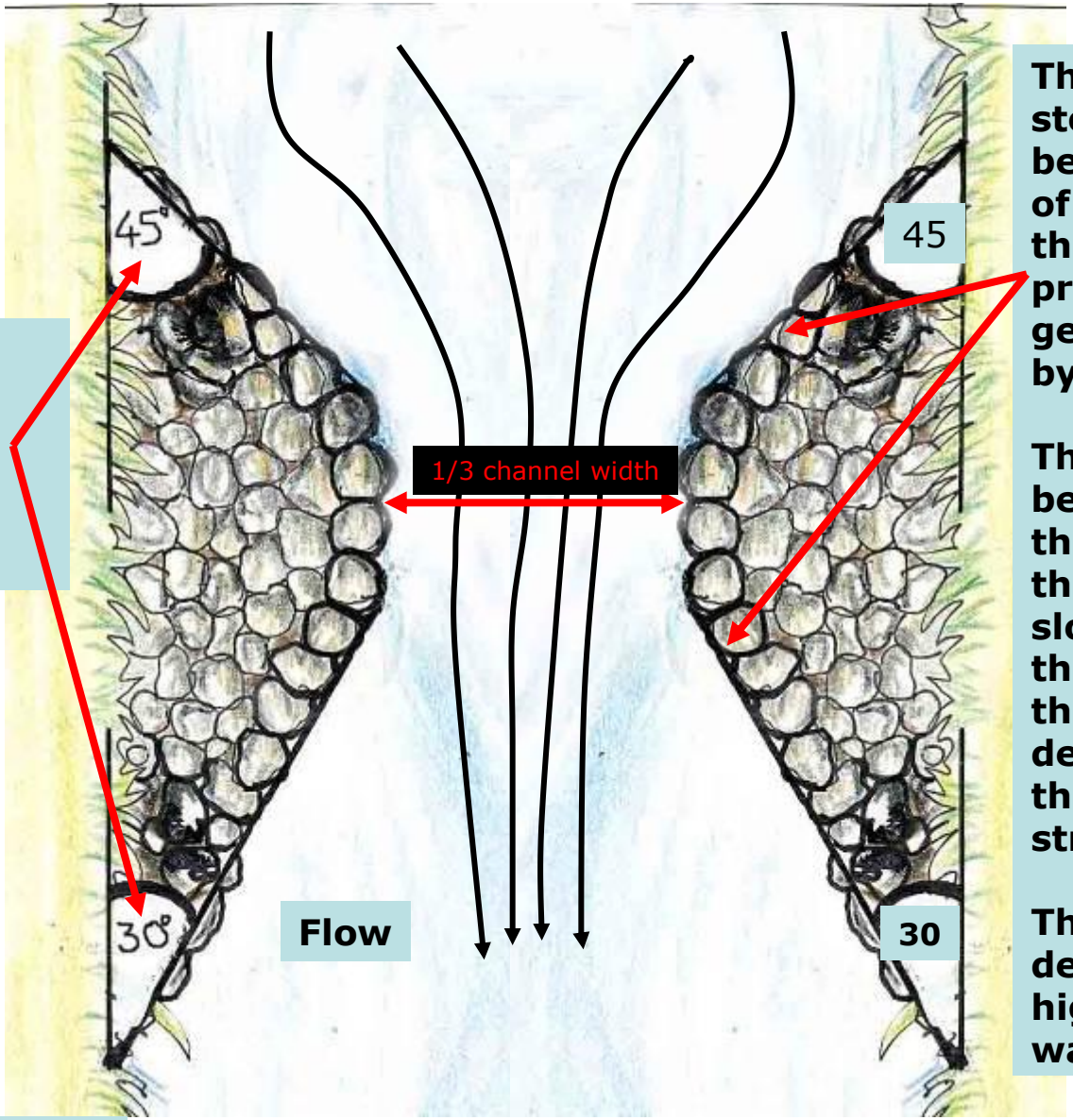
A Paired Deflector – Key Features Irrespective of Channel Size



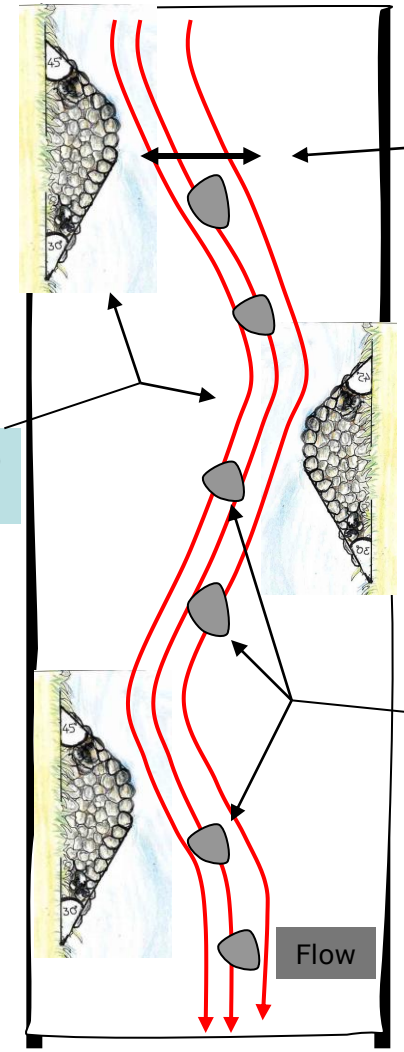
These angles are important to generate the proper flow regime.

The largest heaviest stones available should be used at the outer tip of each deflector where the maximum erosive pressure will be generated by river flows.

These stones will have to be buried a little more than the others because the structure needs to slope out and down from the bank ie.the stones at the outer tip of the deflector need to be at the lowest point of the structure.

The outer tip of each deflector should be no higher than summer water level.

The intended relative placement of alternating deflectors, a thalweg and boulders in sections of the Stonyford.

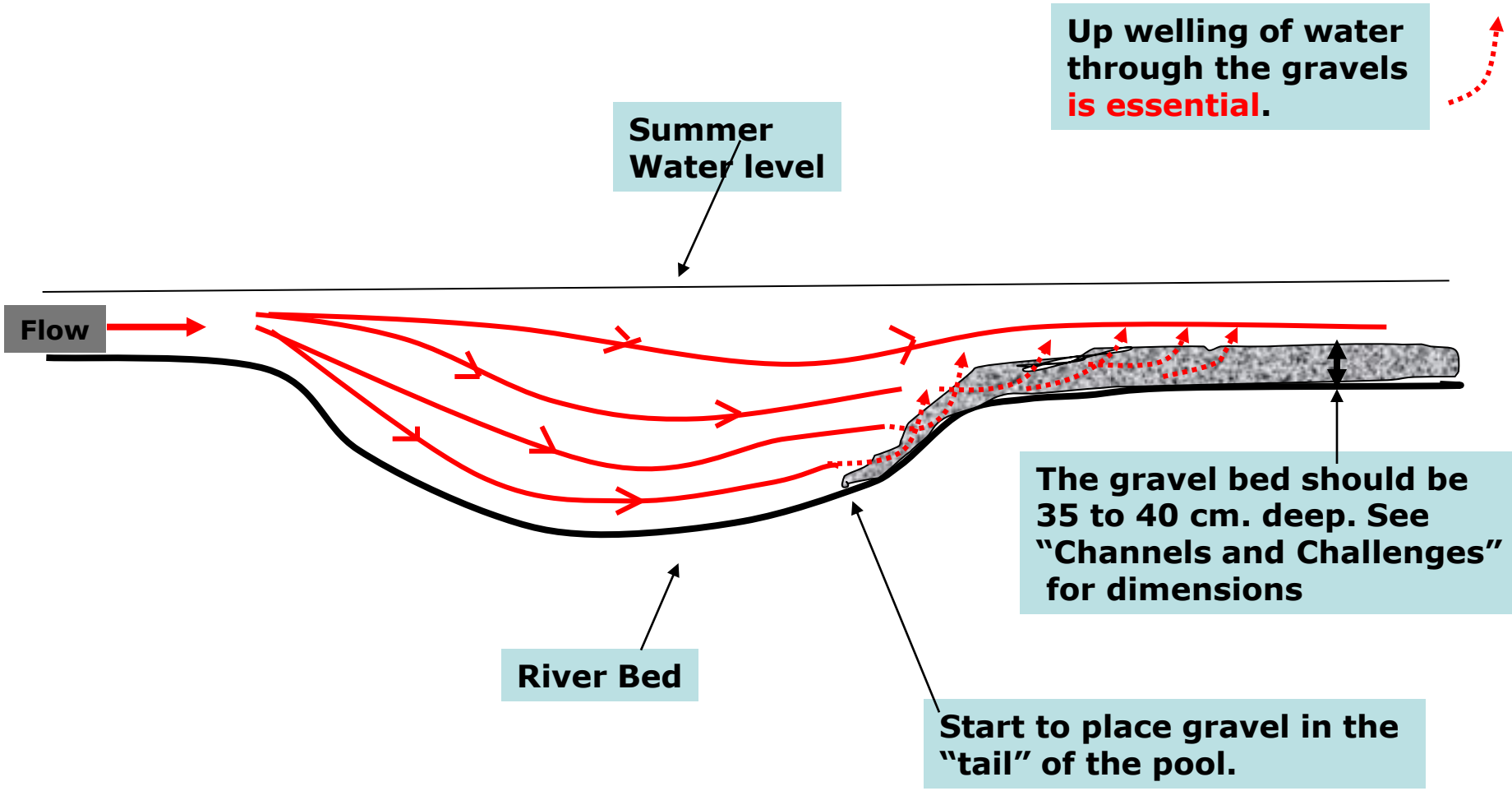


Thalweg - 1/3 channel base width

Deflectors do not overlap

Boulder placement.

Key Features of Gravel Placement.



The pool and gravel bed should be about the same length – about 1.5 times the channel width.

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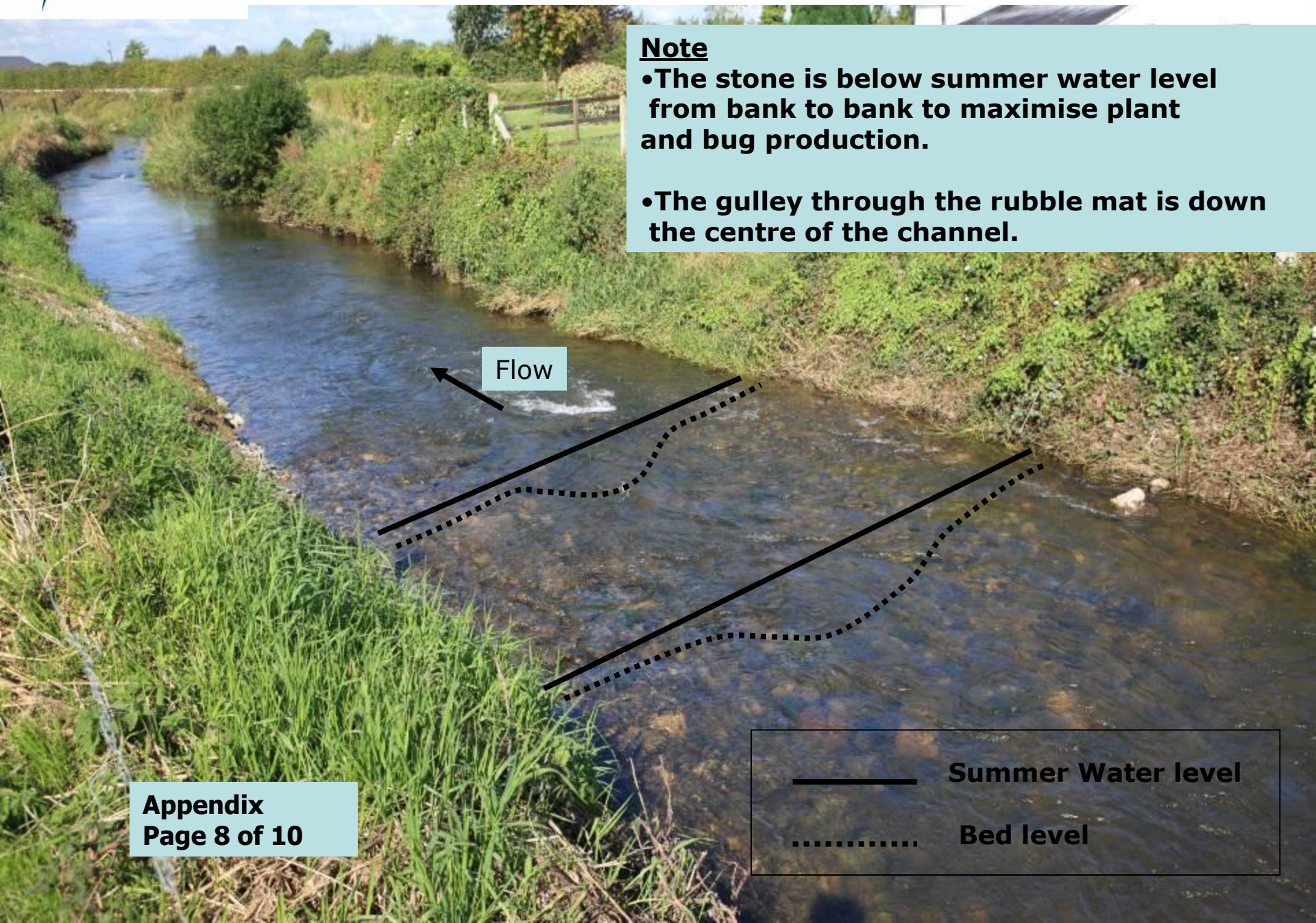
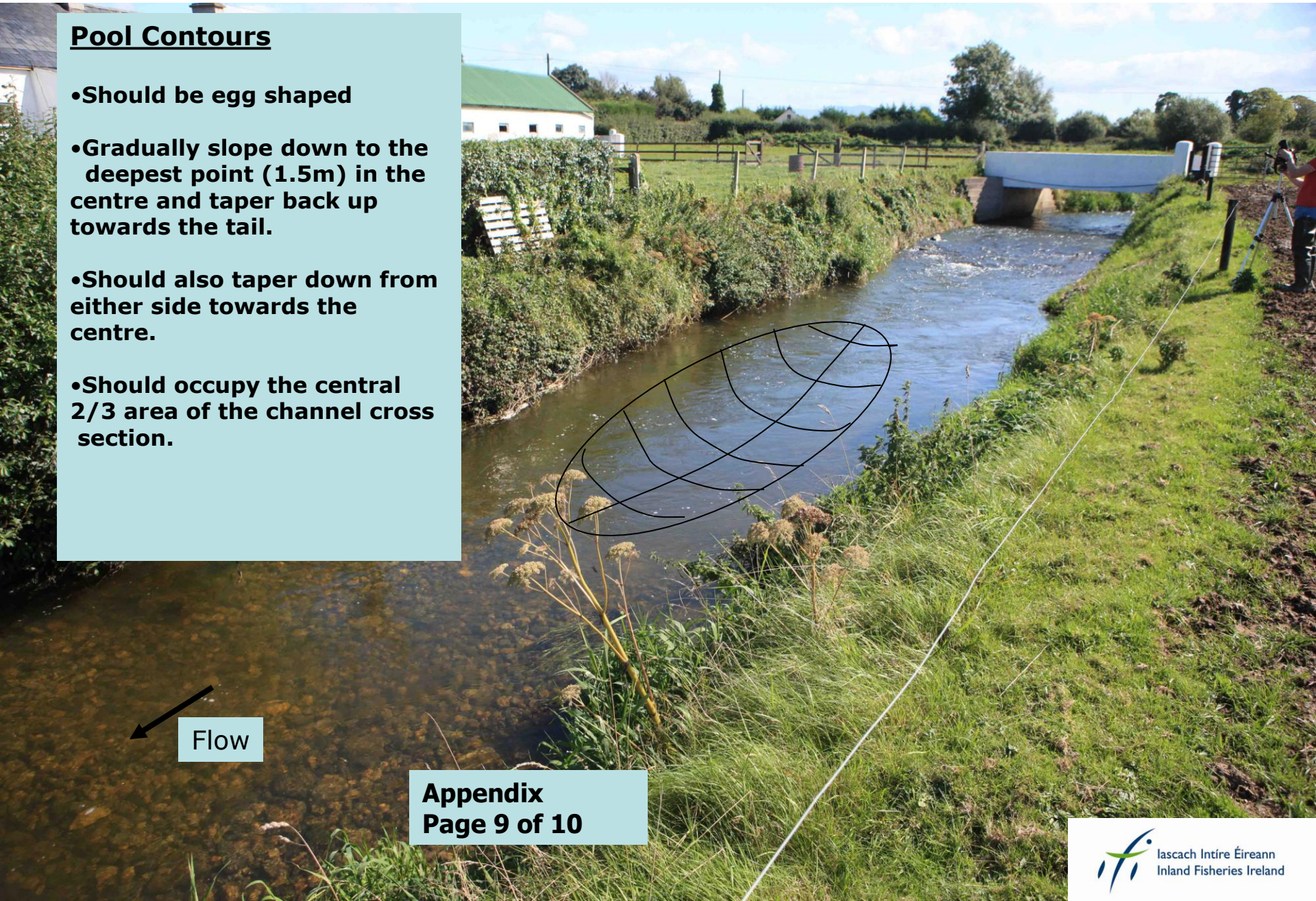
The Completed Rubble Mat



Note

- **The stone is below summer water level from bank to bank to maximise plant and bug production.**
- **The gulley through the rubble mat is down the centre of the channel.**

The Completed Rubble Mat / Pool / Gravel Bed Unit



Pool Contours

- **Should be egg shaped**
- **Gradually slope down to the deepest point (1.5m) in the centre and taper back up towards the tail.**
- **Should also taper down from either side towards the centre.**
- **Should occupy the central 2/3 area of the channel cross section.**

Placement of Boulders in Pools

Rocks should be placed in a triangulated or diamond shaped pattern in bigger channels.

One boulder is adequate in a very small (2 m.) stream, 2 stones in 2 to 4m wide streams, 3 stones in 5 to 6m. wide channels and 4 rocks in bigger rivers as illustrated here.

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