



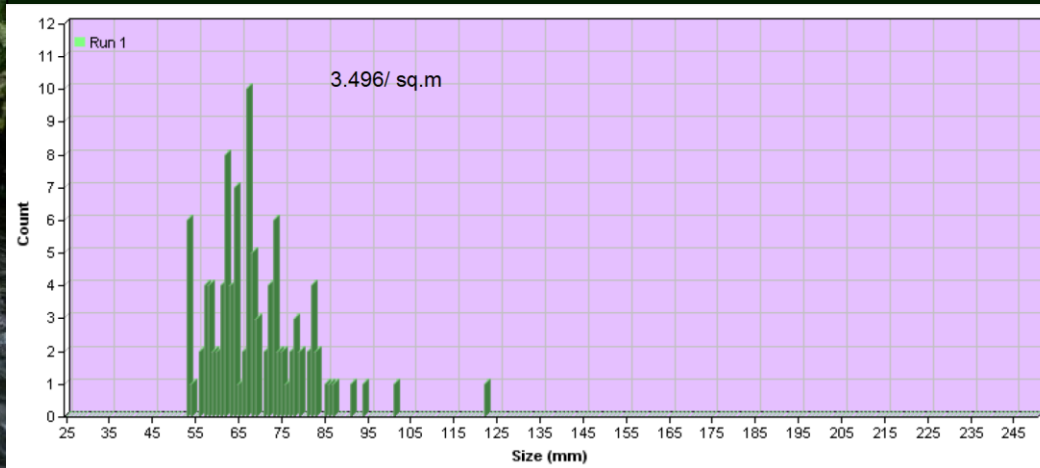
Morphological restoration and fisheries

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Background

- Long been interested in channelised streams in E. Scotland.
- Survey of R. Ugie ca. 1990
- Common in parts of Tay district
- Channelised streams – universally assumed to be bad.
- My experience, in arable areas, often actually very good for salmonid fish.









Present interest

- Came from thoughts on response to SEPA's consultation on *Improving the physical condition of Scotland's Water Environment* (2012 / 13).
- Re-meandering getting up a head of steam.
- Not always seemingly supported by comprehensive data?



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- Leads to steepening of gradient
- Higher velocities
- Coarser substrate
- Riffles!





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Why can channelised streams be good for salmonids? (Juveniles especially!)

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- Riffles!
- In arable areas – lots of bankside cover!
- If left alone – can be quite good if appropriate conditions are met.



What does re-meandering do?

- Leads to lessening of gradient
- Lower velocities
- More deposition of fines.
- More pools.
- Not so good for riffle loving fish.







Sediment

- Consultation document suggested straightened streams generated excess fines.





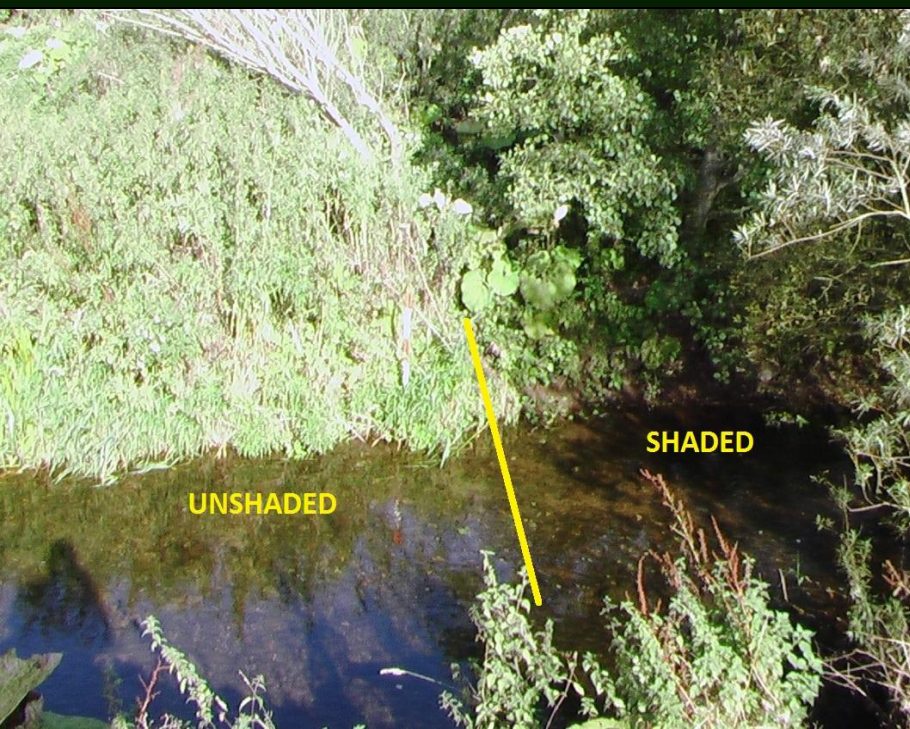






Riparian vegetation

- Seems to be some interest in promoting trees along such burns. Hinted at in consultation.
- In fertile lowland streams not subject to grazing pressure, reedy vegetation seems to be very good for fish.
- Such streams are also well climate proofed.
- Therefore may be no need for trees.





Conclusions

- Remeandering lowland arable streams might not benefit salmon – particularly with modern sediment loadings.
- Even if it did – question cost-effectiveness compared to at-a-point work.
- Therefore, such streams might actually be fine as they are, provided sediment sources can be dealt with.
- If cannot deal with sediment, then such streams are maybe as good as we are going to get, except with a little in-channel improvement if appropriate.