

**Western Rother Fishery Habitat Enhancement Project:
(Appendix Report)
A further aquatic molluscan survey of Sutton End Stream
(post gravel placement)
October 2013**



**Fig 1: Fine-lined Pea Mussel *Pisidium tenuilineatum*
- a rare species found living in Sutton End Stream**

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CONTENTS

- 1. Summary**
- 2. Background**
- 3. Methods**
- 4. Results**
- 5. Discussion**
- 6. References**
- 7. Appendices:**
 - 7.1 Survey results**
 - 7.2 Survey site details**

1. Summary

- Three sites were surveyed on Sutton End stream for freshwater Mollusca at a location located between areas where gravel riffles had been added in August 2013. Additionally two further sites were sampled upstream of the habitat enhancement location.
- Survey work was undertaken on 4th October 2013.
- The rare *Pisidium tenuilineatum* was found in all samples, with the largest number being recorded from the site lying close to where gravel had been placed onto the stream bed.
- It is concluded that the habitat enhancement works in the Sutton End Stream have had no detectable negative effect on a population of *P. tenuilineatum*, as the bivalve remains in 'good numbers' in areas of stream channel lying between newly placed gravel sectors.
- The survey also established that *P. tenuilineatum* is also living more widely in the Sutton End Stream, being found at locations upstream of the habitat enhancement stretch.

2. Background

This work follows on from a series of surveys undertaken in July / August 2013 when five sites were surveyed for Mollusca on the main River Rother channel and two of its tributaries (Willing, 2013). This work was undertaken in the vicinity of Shopham Bridge as part of the 'Western Rother Fishery Habitat Enhancement Project' (Environment Agency *et al* 2013) and prior to the start of any of the enhancement works.

On an earlier survey a population of the rare freshwater bivalve *Pisidium tenuilineatum* (a UK BAP priority species) was found in the Sutton End Stream. This population was confirmed to be the only one known living in East or West Sussex (recording vice-counties 13 and 14). There were fears that the placement of tongues of gravel in the Sutton End Stream in August 2013 (following the initial molluscan survey of the stream) might have damaged or destroyed the *P. tenuilineatum* living there. This survey was undertaken in order to assess the impact of the fishery habitat improvement works on the population of *P. tenuilineatum* in Sutton End Stream.

3. Methods

A survey was undertaken to record aquatic Mollusca with field survey taking place on 4th October 2013. Survey sites were chosen at thus:

Survey sites	Reason for choice
1: Sutton End Stream (in habitat enhancement area)	To assess if gravel placement had caused the loss of <i>Pisidium tenuilineatum</i> from fine sediments lying in the stream channel immediately adjacent to (but not in) gravel enhanced areas.
2: Sutton End Stream – site about 30 m upstream from S1	To determine if <i>Pisidium tenuilineatum</i> occurred more widely in Sutton End Stream and to act as a ‘control’ allowing comparison with samples taken in the habitat managed area (area where gravel deposits had been placed).
3: Sutton End Stream – site about 60 m upstream from S1	To determine if <i>Pisidium tenuilineatum</i> occurred more widely in Sutton End Stream and to act as a ‘control’ comparison with samples taken in the habitat managed area (area where gravel deposits had been placed).

Stream sites were sampled using methods adopted in the first surveys and described in the previous report (Willing 2013).

4. Results

Results are given in tables 7.1 and species naming follows Anderson (2004).

5. Discussion

Pisidium tenuilineatum was found in large numbers in stream sediment samples taken from a section of channel sandwiched between areas where gravel / cobbles had been placed onto the stream bed four weeks earlier. This suggests that gravel placement has had no detectable negative effects on a population of *P. tenuilineatum* living in fine sediments lying immediately adjacent to (but not in) the gravel deposits.

The presence of ‘good numbers’ of *P. tenuilineatum* at sites lying upstream of the habitat managed stretch also demonstrates that the bivalve occurs more widely in the Sutton End stream.

6. References:

Anderson, R. 2005. An annotated list of the non-marine Mollusca of Britain and Ireland. *Journal of Conchology*. 38: 607 – 637.

Environment Agency, Wright, S. 2013. Catchment Restoration Fund (CRF) Project Briefing Note: Western Rother Fishery Habitat Enhancement Project, CRF No.002, Environment Agency, Worthing / ARRT, Duncton Mill, Duncton

Willing, M. J. 2013. Western Rother Habitat Enhancement Project (Final Report): An aquatic molluscan survey of river and stream sites near Shopham Bridge prior to habitat management works July / August 2013. An unpublished report to the Arun and Rother Rivers Trust (ARRT).

7. Appendix

7.1 Results

Table 7.1 : Results

(absolute numbers of live animals recorded; ✓ = present live but not counted)

Site No:	1	2	3
AQUATIC TAXA			
<i>Potamopyrgus antipodarum</i>	✓	✓	✓
<i>Ancylus fluviatilis</i>	✓	✓	✓
<i>Acroloxus lacustris</i>	✓	✓	✓
<i>Pisidium amnicum</i>	4	7	
<i>Pisidium casertanum</i>	2 - 3	4	1
<i>Pisidium personatum</i>		1	3
<i>Pisidium subtruncatum</i>	9	10	17
<i>Pisidium nitidum</i>	28	14	13
<i>Pisidium tenuilineatum</i>	18	5	15
<i>Pisidium</i> spp	3	2	2
Number of live species	9	10	9

7.2 Survey site details

Table 7.: Site Locations, Descriptions & other observations

Site & Grid Ref.	Location	Sample details & additional notes
1 SU 98904 18284 (grid ref. at site 1)	Stream section lying between 'tongues' of gravel deposited in August 2013.	Samples of fine sediments taken over approximately 3 m of river margin and at bottom of deep (>1 m) pool. Site partially shaded by alder.
2	Stream section lying in alder woodland about 30 m upstream of S 1 in area not affected by affected by gravel deposited in August 2013	Samples of fine sediments taken over approximately 3 m of river margin and at bottom of pool. Site fully shaded by alders.
3	Stream section lying in alder woodland about 60 m upstream of S 1 in area not affected by affected by gravel deposited in August 2013	Samples of fine sediments taken over approximately 3 m of river margin and at bottom of pool. Site fully shaded by alders.

**** End of Report ****