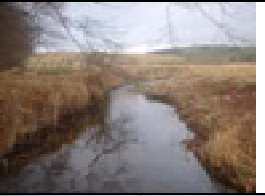


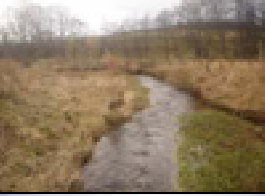







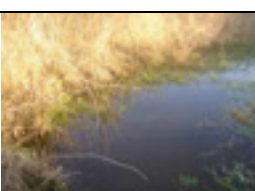








Appendix 9

Fish Habitat Assessment Survey

| Section | NGR | Mean Stream | | | Substratum Composition (%) | | | | | | | Observations | Photograph |
|---------|---------------|---------------|-----------|-------------|----------------------------|----|----|----|----|---|----|--|---|
| | | Wet Width (m) | Depth (m) | Flow | Si | Sa | G | P | C | B | Br | | |
| 1 | NT49515 54088 | 3 | 0.6 | Riffle/Pool | | 20 | 40 | 20 | 20 | | | Clear flowing channel, vegetated sandy deposits along the left hand bank of stream, fine leaved in-channel vegetation along the left hand bank. Approximately 40% of the channel shaded by beech trees. Of particular note was a small pool ca. 1.0 m deep with undercut sandy stream banks. Evidence of dipper along this stretch of watercourse. |  |
| 2 | NT49500 54133 | 1.8 | 0.3 | Riffle | | 10 | 40 | 40 | 10 | | | Clear flowing channel, vegetated sandy deposits along the left hand bank and a vegetated point bar upstream of the transect, fine and broad leaved in-channel vegetation along the left bank and right bank further upstream. Slight undercutting of the sandy banks. No shading to the channel. Evidence of dipper along this stretch of watercourse. |  |
| 3 | NT49494 54167 | 2.0 | 0.2 | Riffle | | 10 | 20 | 50 | 20 | | | Clear relatively fast flowing channel, slight erosion to both banks of the stream, in-channel broad leaved aquatic vegetation, suitable spawning site for salmonids and lamprey over approximately 50m. No shading to the channel. Evidence of dipper along this stretch of watercourse. |  |
| 4 | NT49479 54216 | 2.0 | 0.2 | Riffle | | 10 | 40 | 40 | 10 | | | Clear relatively fast flowing channel, slight erosion to right bank of the stream, in-channel broad leaved aquatic vegetation, suitable spawning site for salmonids and lamprey over approximately 50m. No shading to the channel. Evidence of dipper along this stretch of watercourse. |  |
| 5 | NT49467 54261 | 5.0 | 0.2 | Run | | | 15 | 40 | 45 | | | Clear flowing channel, slight erosion and undercutting to the right bank, broad and fine leaved vegetated left bank. Some in channel vegetation along the channel margins as well as the riparian zone. No shading to the channel. Sign of dipper along this stretch of watercourse. Evidence of dipper along this stretch of watercourse. |  |
| 6 | NT49469 54320 | 3.0 | 0.18 | Riffle | | 5 | 5 | 45 | 45 | | | Clear flowing channel, broad and fine leaved in-channel vegetation along both banks. No shading to the channel Evidence of dipper along this stretch of watercourse. |  |
| 7 | NT49467 54348 | 3.0 | 0.19 | Run | | 20 | 30 | 40 | 10 | | | Clear flowing channel, downstream from a riffle. Slightly undercut bank on both sides of the channel. Tall rudral vegetation on both banks of the stream. No shading of the channel. Evidence of dipper along this stretch of watercourse. |  |

| Section | NGR | Mean Stream | | | Substratum Composition (%) | | | | | | | Observations | Photograph |
|---------|---------------|---------------|-----------|----------------------|----------------------------|----|----|----|----|----|----|--|---|
| | | Wet Width (m) | Depth (m) | Flow | Si | Sa | G | P | C | B | Br | | |
| 8 | NT49458 54400 | 2.75 | 0.25 | Riffle | | 10 | 10 | 20 | 60 | | | Clear fast flowing channel, slightly undercut banks with overhanging vegetation. Small shallow holes in the bank, providing shelter for dipper. |  |
| 9 | NT49412 54432 | 2.5 | 0.35 | Riffle | | | 15 | 15 | 70 | | | Clear moderately fast flowing channel, slightly undercut banks with overhanging vegetation. Small shallow holes in the bank, providing shelter for dipper. Broad leaved aquatic vegetation abundant along left bank. No shading of the channel. |  |
| 10 | NT49453 54453 | 3.5 | 0.28 | Run | | 5 | 5 | 50 | 40 | | | Clear relatively slower flowing channel, area of bank collapse along the right margin of the stream. Aquatic vegetation abundant on both channel margins. |  |
| 11 | NT49453 54470 | 2.5 | 0.22 | Run | | | 10 | 30 | 70 | | | Clear fast flowing channel, relatively stable earth bank, reinforced with cobbles and boulders in places. Aquatic vegetation present on both channel margins, and moss and filamentous algae present on cobbles. Tall rudral vegetation on either side of the channel. Slight shading of the channel. |  |
| 11 + | | 5 | ~0.5 | Pool | 20 | 80 | | | | | | Clear slack water. The exit to a side channel is present approximately 17m upstream from 11 on the left hand bank of the stream and comprises sands and silts of approximately 0.5m deep in places. This site is shaded by overlying aquatic vegetation. Under higher flow conditions this habitat may provide suitable lamprey nursery habitat. |  |
| 12 | NT49422 54507 | 3.5 | 0.18 | | | | | 50 | 50 | | | Run is a predominate feature along a 1/3 of the channel, remaining 2/3rds of the channel largely a glide. Banks of the channel are undercut with a pebble and gravel point bar present on the left had bank of the channel. Moderate shading of the channel from the embanked channel margins. Severe erosion of the left bank in places. |  |
| 13 | NT49390 54524 | 4.25 | 0.32 | Riffle/ Pool/Weir | | | 5 | 5 | 40 | 50 | | Fast flowing riffle, leading into artificially created pool. Reinforced left bank and aquatic vegetation along the right bank, with a vegetated mid-channel bar exposed downstream from the pool. Moderate shading of the channel from willow. |  |
| 14 | NT49382 54550 | 4.5 | 0.22 | Riffle | | 5 | 5 | 70 | 20 | | | Under the main A68 road bridge span. Fast flowing riffle reinforced on both channel margins. Some terrestrial and aquatic in-channel vegetation. High degree of shading from the bridge. Suitable spawning site for salmonids and lamprey. 2 dead salmon noted. |  |

| Section | NGR | Mean Stream | | | Substratum Composition (%) | | | | | | | Observation | Photograph |
|---------|---------------|---------------|-----------|------------|----------------------------|----|----|----|----|---|----|---|---|
| | | Wet Width (m) | Depth (m) | Flow | Si | Sa | G | P | C | B | Br | | |
| 15 | NT49388 54580 | 1.8 | 0.3 | Riffle/Run | | 10 | 30 | 30 | 30 | | | 6-9 m of this stretch is likely to be lost due to bridge extension. Clear fast flowing channel with the flow type in the vicinity of the bridge predominately a run, with a riffle approximately 8m upstream of the bridge. The left bank is reinforced and the land at the top of the reinforcement forms the bridge embankment. The right hand bank has a 4.5m margin of cobbles and pebble deposits possibly derived from past channel clearance or bank slumping, and had established a vegetation structure of soft rush and grasses. The bridge and embankment provides a moderate degree of shading to the channel. The riffle ca. 8m upstream of the bridge provides suitable spawning habitat for salmonids and lamprey. |  |
| 16 | NT49363 54609 | 3.0 | 0.15 | Riffle | | 10 | 20 | 35 | 35 | | | Bridge crossing the D45715. Clear fast flowing channel with small 4m ² sidebars composed of silts and sand downstream of the bridge. Both banks show sign of past reinforcement and were well vegetated with grasses. Livestock poaching of the left hand bank was evident in places. Occasional evidence of filamentous algae and mosses on cobble substrate. Further evidence of salmon remains noted. Suitable spawning habitat for salmonids and lamprey. Directly upstream of the B45715 bridge an area of seasonally wet channel comprising abundant vegetation over predominately silts and sands. Under suitable flow conditions, this area may provide suitable nursery habitat for lamprey ammocoetes. |  |
| 17 | NT49317 54639 | | | | | 5 | 5 | 50 | 40 | | | Straightened and moderately fast flowing channel likely to have been artificially modified with steep embanked sections to the channel. The top of the banks comprised tall ruderal vegetation and would provide a small degree of shading to the channel. Occasional evidence of filamentous algae and mosses on cobble substrate. |  |