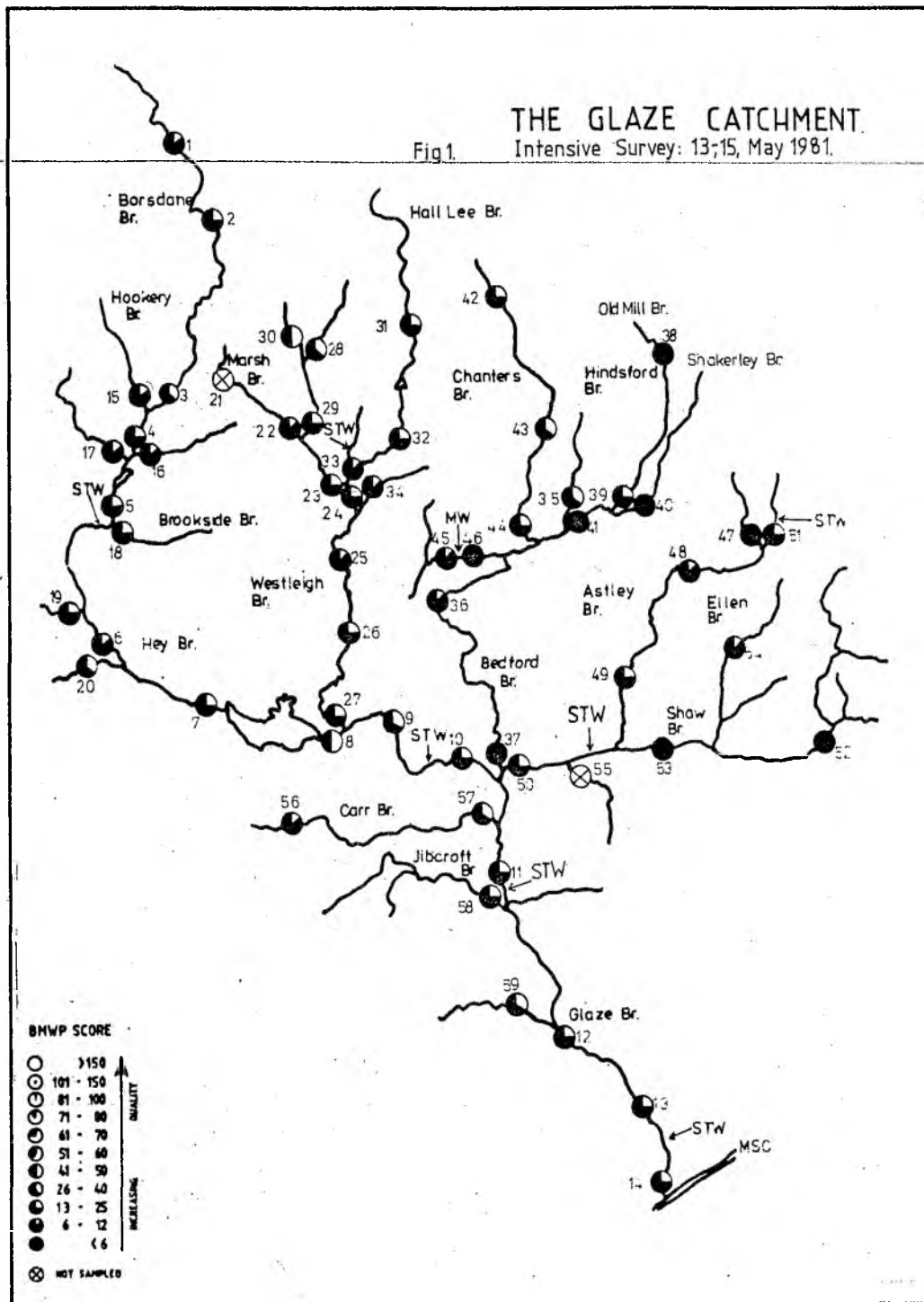




INTENSIVE BIOLOGICAL SURVEY OF GLAZE BROOK CATCHMENT

MAY 1981

S.C. LEVER.



Aim

- to identify those pollution problems not identified during the routine biological water quality surveys.
- to check the suitability of the routine biological sampling point.

Methods/Results

An intensive biological water quality survey of the Glaze Brook catchment was carried out by Biol.(S) on 13th-15th May, 1981. Kick samples of invertebrates were taken at 57 sites. (Fig. 1, Table 1). All invertebrates were identified and counted in the field.

The results of the survey have been summarised in the usual way (Trent Biotic Index (1-10) and Community Description Classes (aa, ab etc.)) and are listed together with detailed comments on pages 3-8.

In addition, BMWP scores were computed for all sites and are represented graphically in Fig. 1.

The following summarises the most significant water quality observations from this survey.

- * Main river
 - Borsdane Brook is poor at Scot Lane and d/s Hindley.
 - Pennington Brook d/s Leigh S.T.W. has deteriorated.
 - Glaze Brook d/s Glazebury S.T.W has improved.
- * Amberswood Stream is a massive clean watercourse and is a serious omission to the routine biological sampling programme.
- * Westleigh Brook - a significant input of organic pollution downstream of the old railway line bridge?
- * Cunningham Brook - excellent W.Q., a single gem in the Glaze Brook catchment!
- * Old Mill Brook - suffering from serious farm(?) drainage d/s A6.
- * Shakerley Brook - dead as a dodo! Spoil tip run-off and/or toxic(?) pollution.
- * Astley Brook - Ptc Little Hulton Stream, extreme organic pollution since 1970! Storm overflows?
- * Shaw Brook - extreme organic pollution! Storm overflows?

Proposals for future routine biological monitoring

The Glaze Brook catchment is routinely sampled at 21 (no.) sites on two occasions per year. The results of this intensive survey lead me to propose the following extra sites be added to the routine biological water quality surveys:

- * Borsdane Brook, PTC Brookside Brook (610025)
- * Glaze Brook, Glazebury (698926)
- * Amberswood Stream, PTC Borsdane Brook (612036)
- * Chanters Brook, PTC Hindsford Brook (678022)
- * Astley Brook, PTC Little Hulton Stream (719019)
- * Little Hulton Stream, PTC Astley Brook (719019)
- * Ellen Brook, A572 Boothstown (721007)
- * Shaw Brook, A572 Boothstown (730006)

The full proposed sampling site list is shown on Table 2.

Ten year review of the water quality of the Glaze Brook Catchment

The T.B.I.'s have been plotted against time (Fig. 2-6) and reveal some interesting water quality changes.

Sample point:	Previous samples			Present Sample	Comments
	1.80	5.80	12.80		
<u>Main River</u>					
<u>Borsdane Brook</u>					
	5.76	5.77	5.78		
1. Scot Lane Bridge (622088)	5	5	5	4bb	<u>Baetis</u> dominant. Fair WQ. Consistent site over the years.
2. Dicconson Lane Bridge (628076)	4	5bd	4bd	5bb	<u>Baetis</u> dominant. Fair WQ. Sewage fungus disappeared since last survey - indicating an improvement in W.Q.
3. Hindley, u/s A58 (620046)	8	7ab	7bb	6bb	Although <u>Baetis</u> dominant indicating fair W.Q; there has been a slight deterioration in WQ recently.
4. PTC Dog Pool Brook (613036)	-	-	-	5db	Fair WQ although deterioration from site 3. <u>Organic pollution from Hindley storm overflows?</u>
5. PTC Brookside Brook (610025)	-	-	-	6bd	Fair WQ. Improvement in WQ from site 4 indicated by the appearance of the caddis, <u>Hydropsyche</u> . Due to the entrance of the clean Amberswood stream.
<u>Hey Brook</u>					
6. Aye Bridge, Abram (608003)	2	3dd	3cc	3dc	Poor WQ. <u>Asellus</u> and worms present. No recent change in WQ.
7. U/S Pennington Flash (626994)	3	4dd	4cc	5cd	Fair WQ. Slight improvement in WQ indicated by increased diversity.
<u>Pennington Brook</u>					
8. D/S Pennington Flash (645988)	5	6bc	5bb	6cc	Fair WQ. Little change over the years.
9. U/S Leigh S.T.W. (657992)	-	-	-	5cb	Fair WQ. <u>Gammarus</u> and <u>Asellus</u> present.
10. D/S A574 (672984)	5	5cd	3cc	3cc	<u>Asellus</u> dominant. Poor WQ with a sustained deterioration in quality since December, 1980 indicated by the decreased numbers of <u>Gammarus</u> .
<u>Glaze Brook</u>					
11. Moss House Farm (674962)	4	5cd	5cc	5cd	Poor WQ. No significant change in quality since last survey.
12. Little Woolden Hall (684938)	3	3cc	3cd	5cc	Poor WQ although marked improvement in quality since last surveyed. <u>Gammarus</u> present for first time since January, 1979. <u>Is Glazebury STW operating better than usual?</u>

Sample point:	1988			Present sample	Comments
	1.80	5.80	12.80		
13. Glazebury Railway Viaduct. (698926)	-	-	-	5cc	Poor WQ - downstream slight improvement in quality from site 12, indicated by the appearance of <u>Baetis</u> and two species of snails.
14. PTC Manchester Ship Canal (702913)	5	3cd	3cd	5cc	Poor WQ. Irlam STW appears to have minimal effect - i.e. no change from site 13.
<u>Tributaries</u>					
15. <u>HOOKERY BROOK</u> , PTC Borsdane Brook (613040)	-	-	-	3dd	Thick ochre. Worms dominant. Poor WQ - mine drainage plus organic pollution.
16. <u>DOG POOL BROOK</u> , PTC Borsdane Brook (614034)	-	-	-	3dc	<u>Asellus</u> and worms co-dominant. Poor WQ - receiving organic pollution - <u>- SSO's in the Hindley area</u>
17. <u>AMBERSWOOD STREAM</u> , PTC Borsdane Brook (612036)	-	-	-	2dd	Large watercourse - equal to/or slightly greater than the Borsdane Brook at confluence! Very limited invertebrate fauna due to solids deposition from opencast drainage. However, the plant species gave a high score - indicating good WQ. Clearly solids pollution is the only problem here.
18. <u>BROOKSIDE BROOK</u> , PTC Borsdane Brook (611025)	-	-	-	4dd	Worms dominant. A single <u>Asellus</u> elevated TBI from 2-4. <u>Bad WQ</u> - <u>ochre and organic pollution.</u>
19. <u>BRYN GATES FARM STREAM</u> , PTC Hey Brook (605008)	-	-	-	4dc	<u>Asellus</u> very common with worms present. Poor WQ indicating slight organic pollution.
20. <u>NAN HOLES BROOK</u> , PTC Hey Brook (607001)	-	-	-	6bb	<u>Baetis</u> , <u>Gammarus</u> and <u>Hydropsyche</u> present. Fair WQ for a small stream.
<u>MARSH BROOK</u>					
21. D/S A58 (630047)	-	-	-		Virtually no water. Not possible to take sample. <u>Durex etc. on stream bed indicating recent operation of S.S.O.</u>
22. PTC Cunningham Brook (641039)	-	-	-	4db	<u>Baetis</u> present although worms co-dominant. Poor WQ indicated. Organic pollution - from site 21? Trace of oil in surface drain from Ingersoll Rand Ltd.

Sample point:				Present Sample	Comments
	1.80	5.80	12.80		
23. PTC Hall Lee Brook (650031)	4bc	-	5db	5sp	Thick <u>Cladophora</u> , a limited invertebrate fauna. Poor WQ - toxic pollution limiting development of abundant invertebrate fauna?
<u>WESTLEIGH BROOK</u>					
24. D/S A577 (652027)	-	-	-	4db	Fair WQ. <u>Baetis</u> common but significant numbers of worms - organic pollution from Marsh and Hall Lee Brook.
25. Nell Pan Lane (649017)	3cd	-	5dc	4dd	Slight ochre. Bad WQ. Marked deterioration in quality from Site 24. <u>Is there any organic input d/s of the old railway line bridge.</u>
26. U/S Parsonage NCB (650005)	-	-	-	5dd	Bad WQ, slight improvement in WQ from Site 25 indicated by the increase in numbers of <u>Baetis</u> and <u>Asellus</u> present.
27. PTC Pennington Brook (648991)	5bc	5cc	5db	5db	Poor WQ - with worms dominant; numbers of <u>Baetis</u> and <u>Gammarus</u> remaining fairly constant over the years.
<u>CUNNINGHAM BROOK</u>					
28. PTC Pennington Brook (643053)	-	-	-	9bb	Excellent WQ (for the Glaze System)! 2 species of stonefly, 2 species of mayfly, 2 species of caddis!
29. PTC Marsh Brook (642039)	-	-	-	5bb	Fair WQ with <u>Baetis</u> dominant. Marked deterioration in quality from site 28. <u>Organic pollution from the SSO's</u>
30. <u>Pennington Brook,</u> PTC Cunningham Brook	-	-	-	5bb	Fair WQ with <u>Baetis</u> dominant. Similar quality u/s of the SSO approx. 50 m PTC. Organic pollution preventing the establishment of clean water invertebrate species.
<u>HALL LEE BROOK</u>					
31. Water's Nook, d/s A58 (660057)	-	-	-	5dd	Bad WQ. Although <u>Baetis</u> , <u>Gammarus</u> and <u>Asellus</u> present sample dominated by worms. <u>Organic pollution upstream of this site?</u>

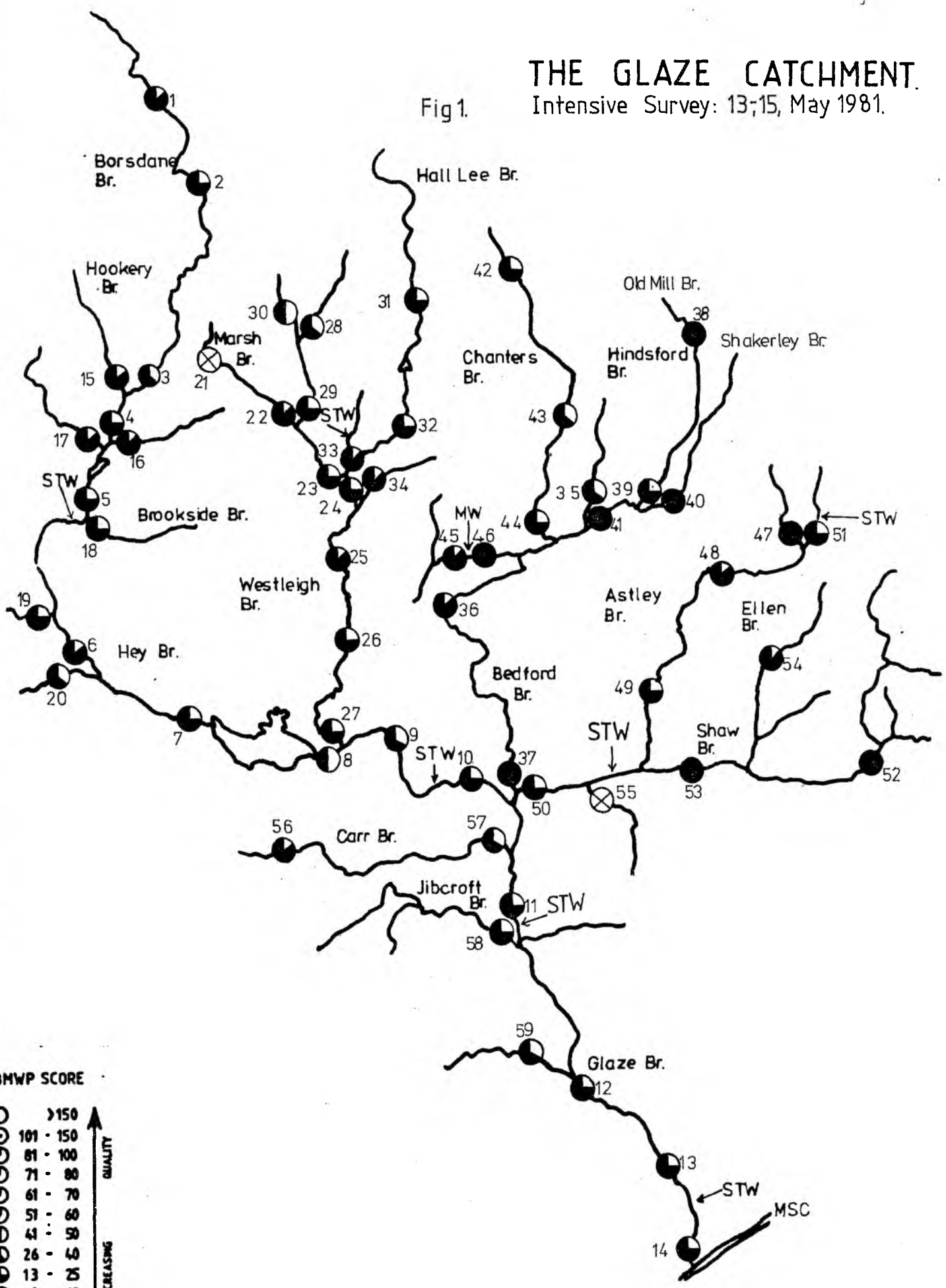
Sample point:	Water Quality			Present Sample	Comments	
	1.80	5.80	12.80			
32. Daisy Hill, B5325 (658037)	5	-	4bb	5bb	Fair WQ. Marked improvement in WQ from site 31. No further organic pollution.	
33. PTC Marsh Brook (650031)	5	-	5dd	4dd	Bad WQ. Marked decrease in numbers of <u>Baetis</u> since December, 1980 indicating deterioration in quality of effluent from Westhoughton S.T.W?	
<u>SMALL BROOK</u>						
34. d/s A577	-	-	-	3dd	Bad W.Q. Water crystal clear with an inch thick layer of iron hydroxide. Although iron pollution masks other types of pollution, the presence of <u>Asellus</u> worms and chironomids may suggest the brook is receiving organic pollution.	
<u>HINDSFORD BROOK</u>						
35. PTC Shakerley Brook, u/s A577 (686023)	-	-	5bc	5cb	Fair W.Q. <u>Baetis</u> and <u>Asellus</u> codominant.	
36. Lilford Park, Leigh (665010)	4	-	5cc	3cd	Poor W.Q. <u>Baetis</u> disappeared since Dec. 1980. Slight deterioration in W.Q. indicated.	
<u>BEDFORD BROOK</u>						
37. PTC Moss Brook (674985)	9.76	12.77	5.78	1sp	2dd	Bad W.Q. Mine water drainage.
<u>OLD MILL BROOK</u>						
38. d/s A6 (703050)	-	-	-	2dd	Bad W.Q. Worms and the pollution tolerant moss, <u>Amblystegium</u> only, water grey and cloudy. Farm pollution? The presence of <u>Amblystegium</u> indicates it has been occurring for some considerable time.	
39. PTC Shakerley Brook (694026)	-	-	-	4dd	Bad W.Q. Sluggish flow, rather difficult to sample.	
<u>SHAKERLEY BROOK</u>						
40. ptc Old Mill Brook (695025)	-	-	-	0	Severe spoil heap run-off- iron hydroxide and loose shale substrate. Bad W.Q.	
41. PTC Hindsford Brook u/s A577 (687023)	4	6	0	2sp	Ochreous. Severe iron hydroxide pollution? - or could there be toxic substances in the brook here?	

Sample point:	Date			Present sample	Comments
	1.80	5.80	12.80		
<u>CHANTERS BROOK</u>					
42. Chequerbent, u/s A6 (676060)	-	-	-	5db	Fair W.Q.
43. Atherton Railway Station (683039)	-	-	-	6bb	Good W.Q. - with <u>Baetis</u> , caddis and <u>Gammarus</u> present.
44. PTC Hindsford Brook (678022)	-	-	-	5dd	Poor W.Q. Ochreous - receiving mine water drainage with slight organic pollution.
<u>ATHERTON BROOK</u>					
45. Atherton Hall u/s ochreous discharge (670018)	-	-	-	3dd	Bad W.Q. Water clear - organic pollution from upstream.
46. Atherton Hall D/s ochreous discharge (669017)	-	-	-	1sp	Bad W.Q. Very thick iron oxide layer prevents colonisation by invertebrates.
<u>ASTLEY BROOK</u>					
47. PTC Little Hulton Stream (719019)	-	-	-	1dd	Bad W.Q. Worms only. Very thick sewage fungus. <u>Extreme organic pollution.</u> Previously sampled at Peel Lane Bridge (715030) where similar W.Q. has existed since 1970. <u>What is the cause?</u>
48. Tyldesley. (707016)	-	-	-	2dd	Bad W.Q. - although some improvement from site 47.
49. off A580 (696998)	9.77 2	12.77 2	5.80 2dd	4dd	Bad W.Q. - some improvement, however, from site 48 indicated by the presence of <u>Asellus</u> and <u>Gammarus</u> .
<u>MOSS BROOK</u>					
50. P.T.C. Bedford Brook (678983)	1sp	2dd	-	3dd	Bad W.Q. - no downstream change in WQ.
<u>LITTLE HULTON STREAM</u>					
51. PTC Astley Brook (719019)	-	-	-	3dd	Fair W.Q. - considering this small stream receives the effluent from Worsley S.T.W.
<u>SHAW BROOK</u>					
52. Botany Bay Woods (729986)	-	-	-	1sp	Very bad W.Q. - brown water with thick anoxic mud. <u>Extreme organic pollution</u>
53. Fleet Platt Bridge (702986)	-	2sp	0	1dd	Bad W.Q. - Worms only. Effect of organic pollution from upstream.
<u>ELLEN BROOK</u>					
54. d/s Boothstown (714002)	-	-	-	3dd	Poor W.Q. - <u>Asellus</u> present but worms and chironomids dominant. <u>Organic pollution?</u>

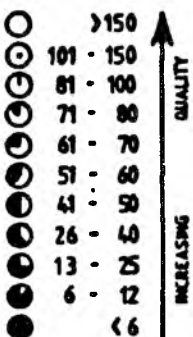
Sample point:				Present sample	Comments
	1.80	5.80	12.80		
<u>CARR BROOK</u>					
56. Pocket Nook (640974)	-	-	-	4bd	Fair W.Q. - <u>Gammarus</u> very common
57. u/s A574, Glazebury (672976)	-	-	-	6cc	Poor W.Q. - <u>Asellus</u> numerous with thick <u>Cladophora</u> . Indicates organic pollution mineralized by this site - <u>pollution in the vicinity of the A580?</u>
<u>JIBCROFT BROOK</u>					
	<u>10.73</u>				
58. 50m u/s A574 (674960)	5bb	2dd	-	5dd	Bad W.Q. - indicated by the abundance of worms, and thick sewage fungus. (Sample taken u/s S.S.O) <u>Organic pollution from u/s SSO!</u>
<u>STREAM 11, d/s</u>					
59. Frank's Farm (677943)	-	-	-	5dd	Fair WQ - <u>Gammarus</u> and caddis present although worms, dominant. <u>Local farm pollution?</u>

THE GLAZE CATCHMENT

Fig 1. Intensive Survey: 13;15, May 1981.



BMWP SCORE



⊗ NOT SAMPLED

catchment:

GLAZE BROOK

hydrometric area:

69

district:

6

site:

Borsdane Brook, Scot Lane Bridge

n.g.r.: 622088

Very variable W.Q. in early 70's, stabilized in mid-70's.

No longer sampled routinely.

site:

Borsdane Brook, Dicconson Lane Bridge

n.g.r.: 628076

Steady W.Q. - apart from severe pollution in 1978.

site:

Borsdane Brook, A58. Hindley

n.g.r.: 620046

Fair W.Q. in early 70's. Improving quality in late 70's.

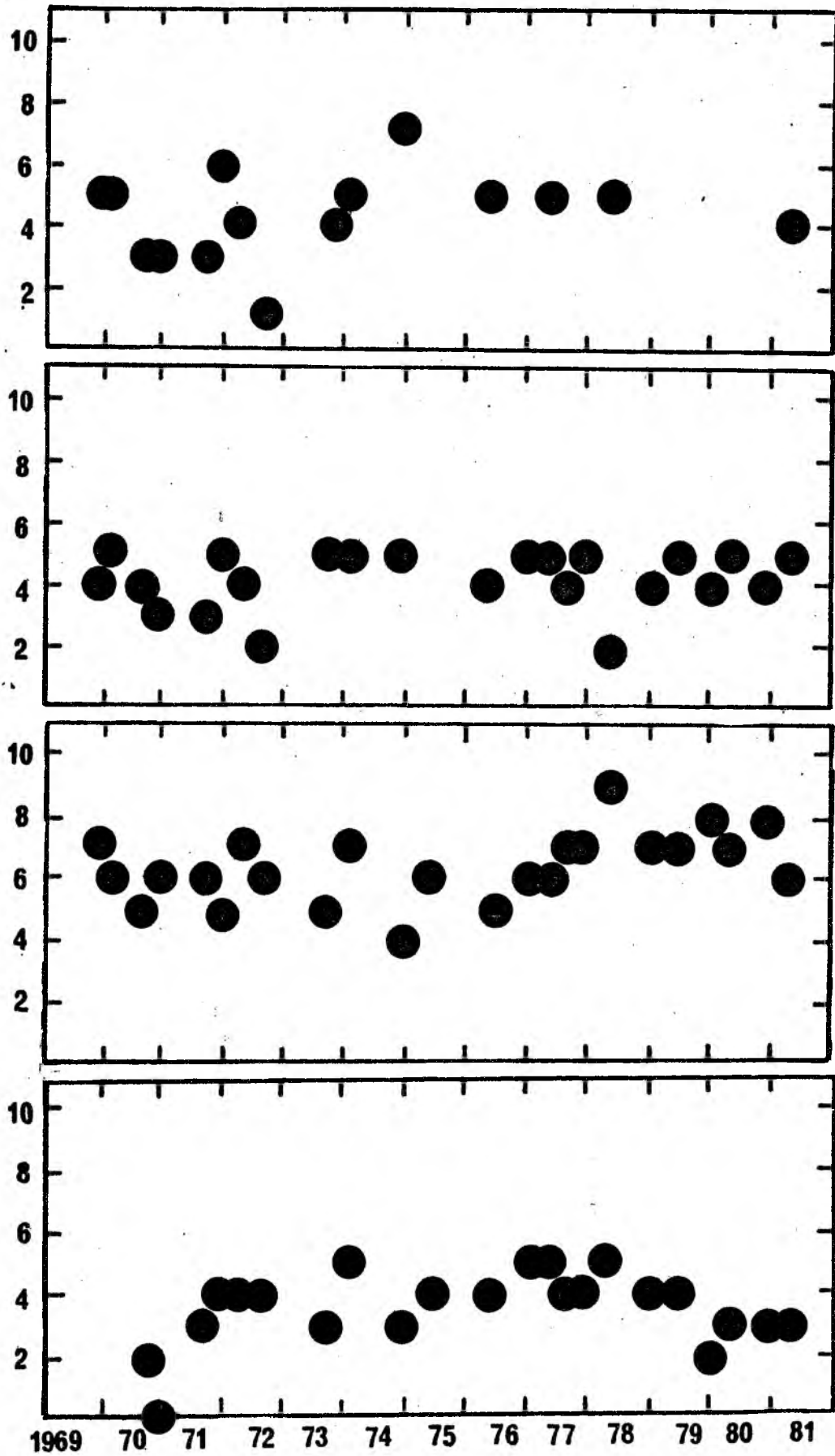
site:

Hey Brook, Aye Bridge, Abram

n.g.r.: 608003

Rather poor W.Q. throughout the 70's. Deterioration in quality from 1978, to present. - Hindley S.T.W. ??

Fig 2



catchment:

GLAZE BROOK

hydrometric area: 69

district: 6

site:

Hey Brook, u/s Pennington Flash

n.g.r.: 626994

Very variable W.Q. Fair W.Q. from 76 - 78, with a significant deterioration in 79. W.Q. almost returned to its 'usual' condition.

site:

Pennington Brook d/s Pennington Flash

n.g.r.: 645988

Fair W.Q. - oscillating around a T.B.I. of 6.

site:

Pennington Brook, Breaston Bridge

n.g.r.: 672984

Poor W.Q. Periods when T.B.I. as high as 6 and as low as 3 - variable quality of Leigh S.T.W. effluent?

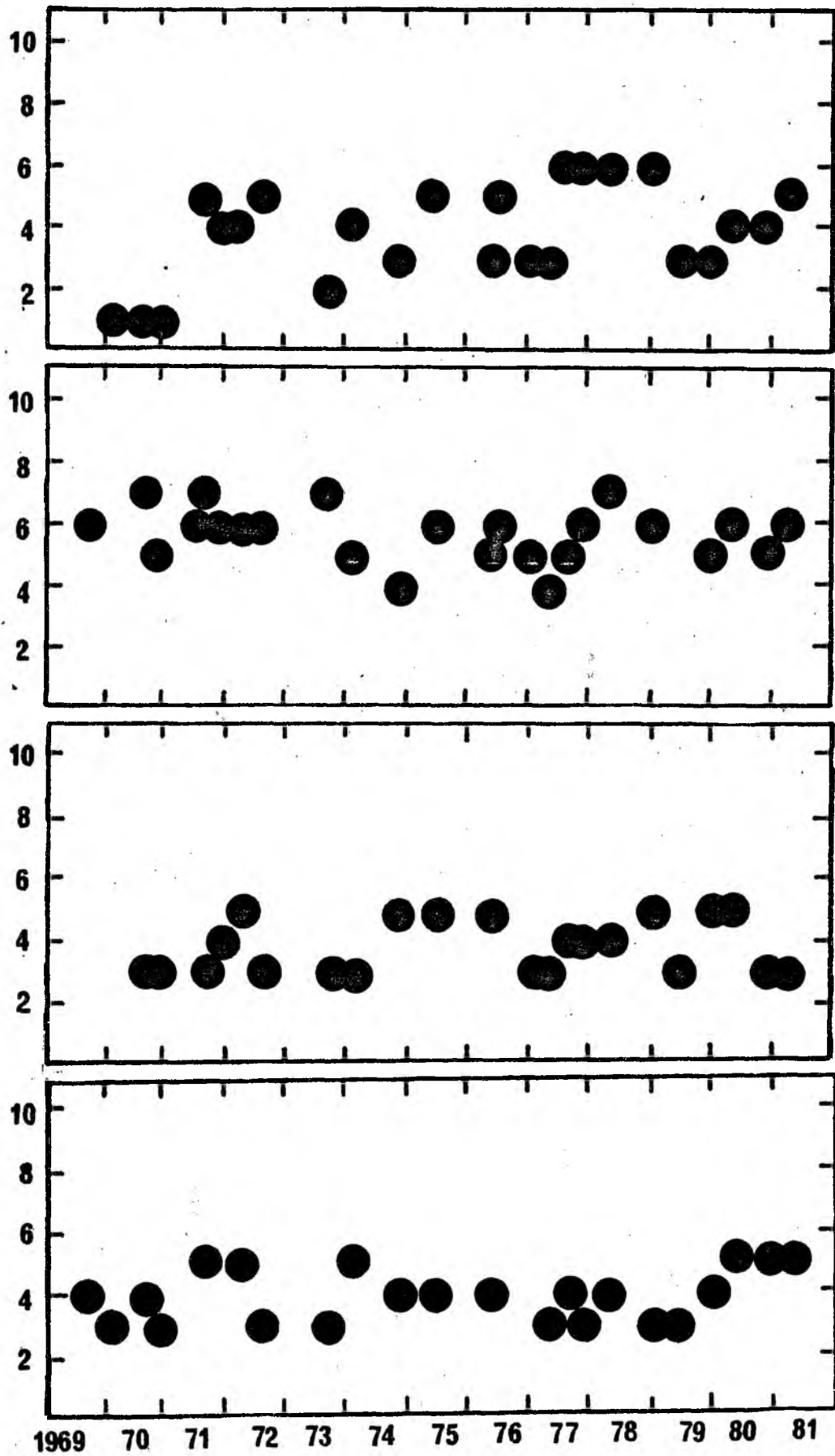
site:

Glaze Brook, Moss House Farm.

n.g.r.:

Poor w.q. - showing some recent improvements.

Fig 3



catchment:

hydrometric area: 69

district: 6

site:

Glaze Brook, Little Woolden Hall

n.g.r.:

684938

Poor W.Q. - T.B.I. between 3 and 6.

site:

Glaze Brook - PTC M.S.C.

n.g.r.:

702913

Poor W.Q. Rather interesting similarity between the curve for this site and the upstream site at Little Woolden Hall. The only difference between the two curves is the displacement by 1 - 2 T.B.I. units at this site - due to the input of Irlam S.T.W. effluent?

site:

Marsh Brook PTC Hall Lee Brook

n.g.r.:

650031

Fair W.Q. with considerable variation indicated 77 and 79. Frequency of sampling increased after 1975 from once to twice a year.

site:

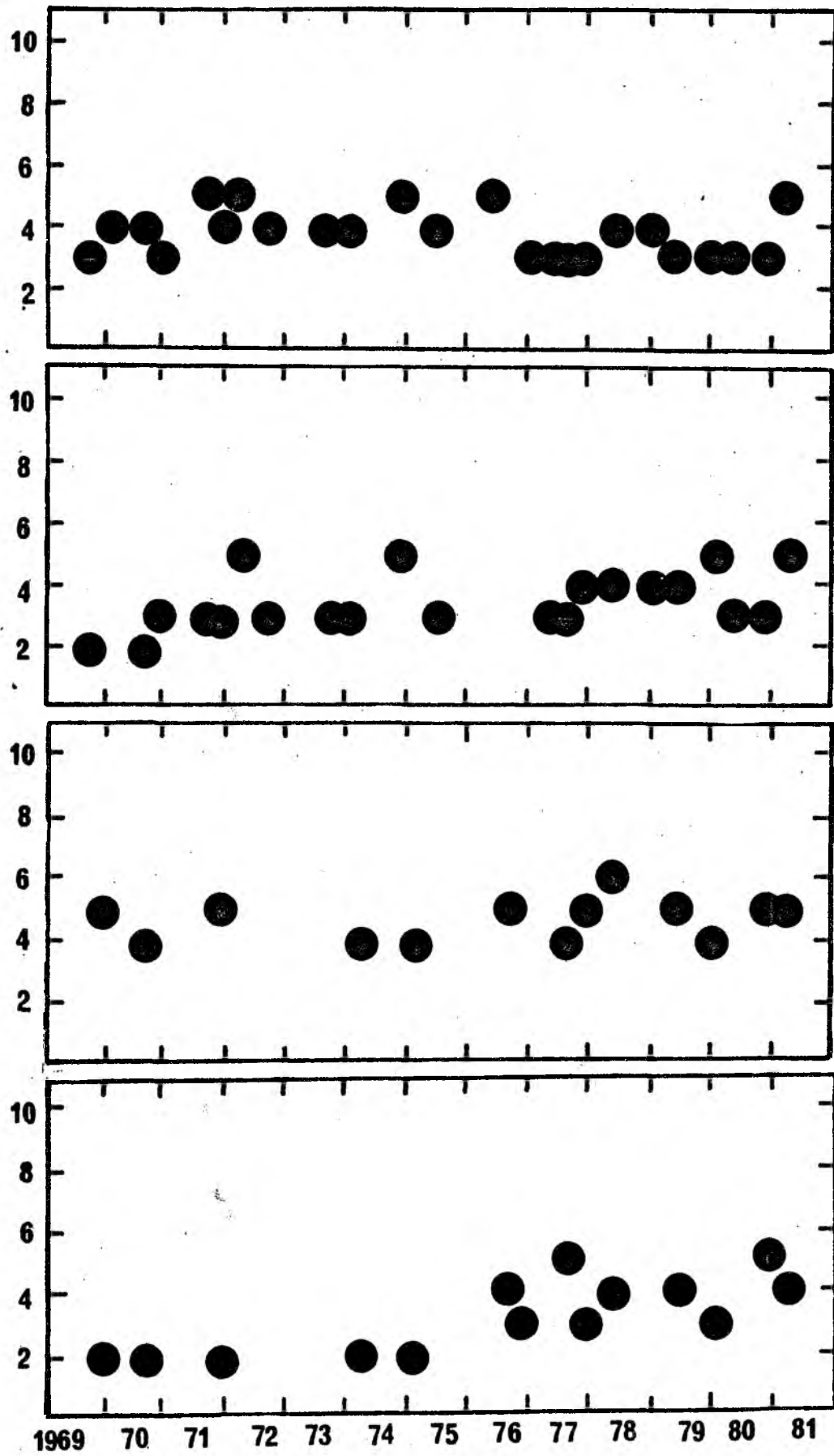
Westleigh Brook, Nel Pam Lane.

n.g.r.:

649017

Bad W.Q. in early 70's (before commissioning of Westhoughton S.T.W?). Steady improvement in W.Q.

Fig 4



catchment: GLAZE BROOK*

hydrometric area: 69

district: 6

site: Westleigh Brook PTC Pennington Brook n.g.r.: 648991

∅ = Old site, u/s Leeds - Liverpool Canal.

Although site location changed in 1976, no difference in W.Q. expected between sites.

Bad W.Q. in early 70's, improved in mid-70's and stabilized at T.B.I of 5.

site: Hall Lee Brook, PTC Marsh Brook n.g.r.: 650031

Fair W.Q. Oscillating T.B.I. due to carying quality of the S.T.W.

site: Astley Brook, off East Lancashire Road. n.g.r.: 696998

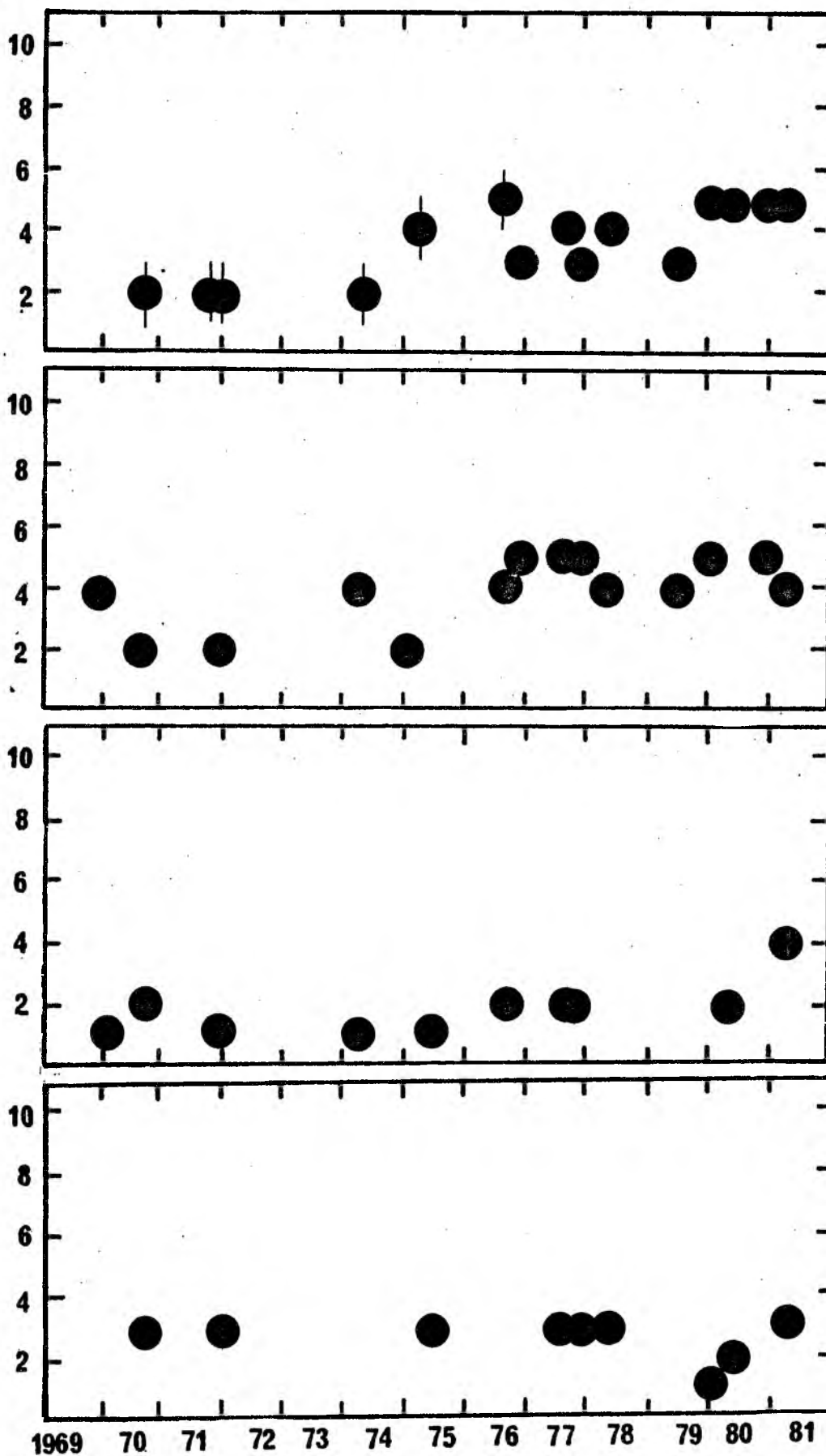
Extremely bad W.Q. since 1970. Dramatic improvement shown in most recent sample - is this a typical?

site: Moss Brook, PTC Bedford Brook n.g.r.: 674985

Poor W.Q. early 70's.

Dramatic deterioration in W.Q. in 1979 (storm overflows?) - recovering to "usual" state in 81.

Fig 5



catchment:

GLAZE BROOK

hydrometric area: 69

district: 6

site:

Shaw Brook, Fleet Platt Bridge.

n.g.r.: 702986

Poor W.Q. in 1970/71- deteriorating to bad W.Q. 74 - 76 which now appears to be usual state. Storm overflows?

site:

Hindsford Brook, Lilford Park, Leigh

n.g.r.: 665010.

Very bad W.Q. in early 70's marked improvement in W.Q. in 1975. Maintaining fair W.Q. - although some oscillation in T.B.I - due to storm sewage?

site:

Bedford Brook, PTC Moss Brook

n.g.r.: 674985

Bad W.Q. - due to mine drainage and storm sewage ?

site:

Shakerley Brook, PTC Hindsford Brook

n.g.r.: 686023

Bad W.Q. - mine spoil run-off. Very little invertebrate life.

Fig 6

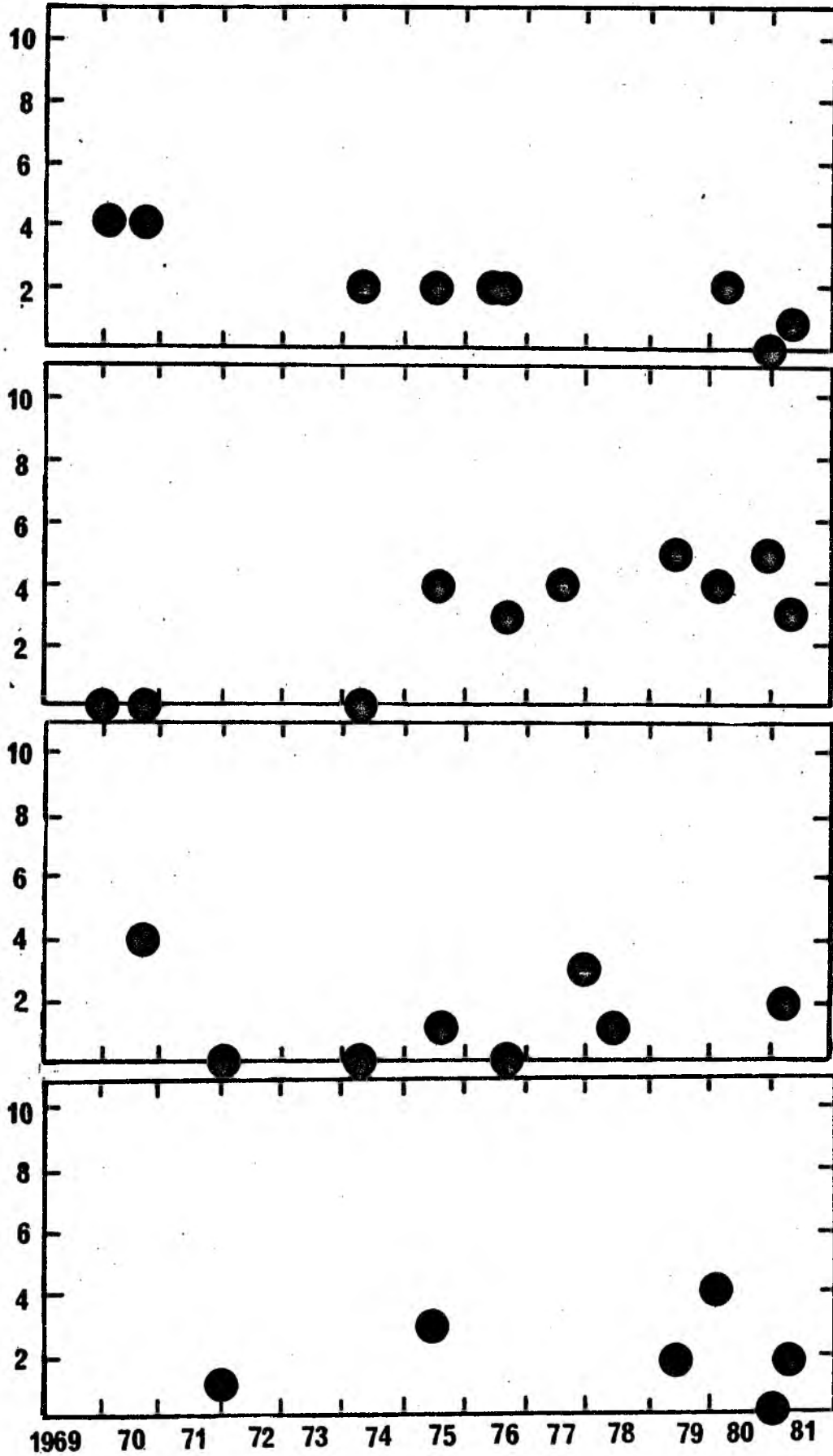


TABLE 1. Sampling Sites: Intensive Survey : Glaze Brook Catchment

<u>Watercourse</u>	<u>N.G.R.</u>	<u>Location</u>
Glaze Brook	702 912	P.T.C. M.S.C.
Glaze Brook	698 926	At Glazebrook, u/s Irlam S.T.W.
Glaze Brook	685 939	Little Woolden Hall
Glaze Brook	675 960	Moss House Farm
Pennington Brook	669 985	Breaston Bridge
Pennington Brook	657 992	U/s Leigh S.T.W.
Pennington Brook	646 988	D/s Flash
Hey Brook	626 993	U/s Flash
Hey Brook	607 007	Aye Bridge
Borsdane Brook	610 025	U/s Hindley S.T.W.
Borsdane Brook	613 036	Off A58 Platt Bridge
Borsdane Brook	620 046	Hindley
Borsdane Brook	627 076	Dicconsen Lane Bridge
Borsdane Brook	622 086	Scott Lane Bridge B5238
Stream 11	677 943	Franks Farm B5212
Jibcroft Brook	674 962	P.T.C. Glazebrook
Carr Brook	672 976	P.T.C. Glazebrook A574
Carr Brook	640 974	U/S Pocket Nook
Moss Brook	676 983	P.T.C. Bedford (Hindsford) Brook
Astley Brook	696 998	Off East Lancashire Road.
Astley Brook	707 016	Tyldesley,
Astley Brook	719 019	P.T.C. Little Hulton Stream, Parr Brow.
Little Hulton Stream	719 019	P.T.C. Astley Brook, Parr Brow.
Bedford Brook	674 985	P.T.C. Moss Brook
Hindsford Brook	665 010	Lilford Park, Leigh
Hindsford Brook	687 022	P.T.C. Shakerley Brook
Hindsford Brook	695 026	At Shakerley PTC Old Mill Brook
Old Mill Brook	703 050	D/s A6
Old Mill Brook	694 026	PTC Shakerley Brook
Atherton Brook	670 018	Atherton Hall, u/s ochreous discharge
Atherton Brook		Atherton Hall, d/s ochreous discharge
Chanters Brook	678 022	P.T.C. Hindsford Brook.
Chanters Brook	683 039	Nr. Railway Station.
Chanters Brook	676 060	Chequerbent, A6
Hindsford Brook	687 023	P.T.C. Shakerley Brook
Shakerley Brook	694 026	At. Shakerley, PTC Old Mill Brook
Ellen Brook	714 002	D/s Boothstown.
Shaw Brook	702 986	Fleet Platt Bridge, Astley
Shaw Brook	729 986	Botany Bay Wood
Westleigh Brook	647 992	P.T.C. Pennington Brook
Westleigh Brook	650 006	u/s Parsonage N.C.B. Discharge
Westleigh Brook	649 017	Nel Pan Lane
Westleigh Brook	650 027	D/sold railway bridge.
Small Brook	655 030	D/S A577
Marsh Brook	649 030	P.T.C. Hall Lee Brook
Marsh Brook	641 039	Hindley, PTC Cunningham Brook;
Marsh Brook	630 047	D/s A58
Hall Lee Brook	650 031	P.T.C. Marsh Brook
Hall Lee Brook	659 037	B5235 Daisy Nook
Hall Lee Brook	660 057	Water's Nook
Cunningham Brook	642 039	P.T.C. Marsh Brook
Cunningham Brook	643 052	P.T.C. Pennington Brook (A58)
Pennington Brook	644 052	P.T.C. Cunningham Brook (A58)
Nan Holes Brook	607 001*	P.T.C. Hey Brook
Bryn Gates Stream	605 008	P.T.C. Hey Brook
Brookside Brook	611 025	P.T.C. Borsdane Brook B5237
Amberswood Stream	612 036	P.T.C. Borsdane Brook A58
Hookery Brook	613 040*	P.T.C. Hey Brook A58
Dog Pool Brook	614 034*	Platt Bridge P.T.C. Borsdane Brook

TABLE 2.

RIVER GLAZE AND TRIBUTARIES

AREA 6

Total no. of sites 27.
Frequency p.a. 2.

Inspectors:

J.R.Macauley
 F. Crossland
 L. Rankin
 D.Nilsson

<u>River</u>	<u>N.G.R.</u>	<u>Location</u>
Borsdane Brook	628076	Dicconson Lane Bridge
Borsdane Brook	620046	A58 Road Bridge, Hindley
Borsdane Brook	610025	PTC. Brookside Brook
Hey Brook	608003	Aye Bridge
Hey Brook	626994	U/S Pennington Flash
Pennington Brook	645988	D/S Pennington Flash
Pennington Brook	668984	Breaston Bridge
Glaze Brook	675960	Moss House Farm
Glaze Brook	684938	Little Woolden Hall
Glaze Brook	698926	Glazebury u/s Irlam S.T.W.
Glaze Brook	702913	PTC. M.S.C. d/s Bridge
Amberswood Stream	612036	PTC Borsdane Brook
Marsh Brook	650031	PTC Hall Lee Brook
Westleigh Brook	649017	Nel Pan Bridge
Westleigh Brook	648891	PTC Pennington Brook
Hall Lee Brook	658037	u/s Westhoughton S.T.W.,B5235.
Hall Lee Brook	650031	PTC Marsh Baook
Hindsford Brook	687023	PTC Shakerley Brook
Hindsford Brook	665010	Lilford Park, Leigh
Bedford Brook	674985	PTC Moss Brook
Shakerley Brook	687023	PTC Hindsford Brook
Chanters Brook	678022	PTC Hindsford Brook
Astley Brook	719019	PTC Little Hulton Stream
Astley Brook	696998	off East Lancs. road bridge.
Shaw Brook	730006	A572, Boothstown.
Shaw Brook	702986	Fleet Platt Bridge, Astley
Ellen Brook	721007	A572 Boothstown.
Little Hulton Stream	719019	Astley Brook

CIRCULATION :

Divisional Scientist
Assistant Divisional Scientist(3)
Principal Chemist
Principal Biologist
Area Biologists(2)
Levens Laboratory
Principal Scientific Officer
Technical Liason Officer
Senior River Inspector
Area Fisheries Officer
Head Office
Principal Scientist(Biology)
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