

CHAPTER 3. WEST SUSSEX.

Summary.

The summary considers the status of sites, and the presence or absence of *Potamogeton acutifolius*. It also considers the number of duplicate records or new records found within a site. A comparative analysis between all the grazing marsh sites is found in Table 2 and the overall change in status of *Potamogeton acutifolius* is considered in detail in the Discussion.

Overall for West Sussex there were 13 BSBI sites containing 6 figure grid references and in the present survey only 5 sites were found to contain *Potamogeton acutifolius*. This represents an overall reduction of 62%. However *Potamogeton acutifolius* was found in 7 new sites, close to the original BSBI sites, giving an overall reduction in West Sussex of only 9%. There were four areas of search; the Amberley Wild Brooks, the Pulborough Brooks, Houghton Bridge and Lancing. A more detailed analysis of these areas contradicts the generalised statement of decline in West Sussex.

The majority of BSBI sites for *Potamogeton acutifolius* at Amberley Wild Brooks are given as a 4 figure grid reference (Appendix 1). These records represent a search area covering a 1km square. Overall this was the only grazing marsh, in the BSBI records, where such sites exceeded, by far, the number of sites having 6 figure grid references (Appendix 1). Seven 1km squares (A-G) were covered by the BSBI records. Three of these squares were represented by 5 BSBI 6 figure grid reference sites. New sites were found for two other squares but no new sites were found in the remaining two squares.

In detail, Amberley Wild Brooks had 5 BSBI 6 figure grid reference sites and *Potamogeton acutifolius* was found in the present survey in only 2 of these, a reduction of 60%. BUT it was found in two new sites in the present survey close to the BSBI sites giving an overall reduction of 20%. Additionally one site was found which was chosen to represent Square C but it was also found at 3 other new sites for this square. It was also found at one site in square D. There were no BSBI 6 figure grid references giving the location of *Potamogeton acutifolius* for any of these squares. The BSBI records and the present survey must under-represent the overall status of *Potamogeton acutifolius* at Amberley Wild Brooks. The survey by Abraham (1998) found *Potamogeton acutifolius* in many ditches throughout the Amberley Wild Brooks and the staff at the English Nature Lewes office recorded it in many ditches in 2002.

Pulborough Brooks RSPB reserve had 3 BSBI sites and all of these sites still contained *Potamogeton acutifolius*. In addition 5 new sites were found at Pulborough Brooks, 3 of which were recorded along the same ditch system containing two of the BSBI sites. At Pulborough Brooks therefore, there was no reduction in the status of the BSBI records. The only area in the country to have such status. There was also a 266% increase in the number of sites, from 3 to 8, recorded for *Potamogeton acutifolius*. This could represent the poor BSBI survey coverage of the Pulborough Brooks in the past but it is more likely to represent a beneficial management regime carried out by the RSPB on their reserve. In addition there was one BSBI record for a separate 1km square and *Potamogeton acutifolius* was also found in this square.

The 3 BSBI sites at Houghton Bridge and the 2 BSBI sites at Lancing no longer contained *Potamogeton acutifolius*.

AMBERLEY WILD BROOKS

Site 1. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: TQ 02946 13628 (029 136)

BSBI Grid reference: TQ 029 136. One 1994 BSBI record (Site 1 on the Amberley Wild Brooks Map).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: One 1988 BSBI record for the square TQ 02- 13- (Square A on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m Ditch depth: 1.2m

Water depth: 0.4m Freeboard: 0.2m

Sediment Depth: 0.6m. Sediment type: Black mud, Peat.

pH 7.1. Conductivity: 340 microsiemens

Open water: 3. Water Clarity. 3 (Scale 1-5)

Flora.



Site 1. Amberley Wild Brooks at TQ 02946 13628.

Potamogeton acutifolius was abundant but *Elodea nuttallii* was dominant. The associated aquatic flora was as follows; *Apium nodiflorum* (fr), *Hydrocharis morsusranae* (fr), *Spirodela polyrhiza* (fr), *Alisma plantago-aquatica* (occ), *Equisetum fluviatile* (occ), *Lemna minor* (occ), *Oenanthe fistulosa* (occ), *Persicaria amphibia* (occ), *Alisma lanceolatum* (r) and *Sagittaria sagittifolia* (r). The bankside flora was diverse and contained the following species; *Sparganium erectum* (dom), *Lythrum salicaria* (occ), *Lycopus europaeus* (occ), *Myosotis caespitosa* (occ), *Polygonum hydropiper* (occ), *Bidens tripartita* (occ) and *Rumex conglomeratus* (occ).

Management. The ditch had been neglected and it formed a boundary to an area known as the Amberley Swamp. Probably not managed for 10 to 15 years.

Shade. The site was partially shaded by trees which edged the swamp.

Agricultural use. On the edge of the swamp and true grazing marsh used as grazing for cattle.

Reasons for presence. Water quality, deep sediments inducing lack of competition?

Site 2. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 03051 13400 to 03086 13459 (031 134 to 031 135)
BSBI Grid reference: TQ 031 134. One 1994 BSBI record (Site 2 to 2a on the Amberley Wild Brooks Map)

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Five BSBI records for the square TQ 03- 13- for the years 1981, 1986, 1988, 1993 and 1994
(Square B on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m **Ditch depth:** 1.2m

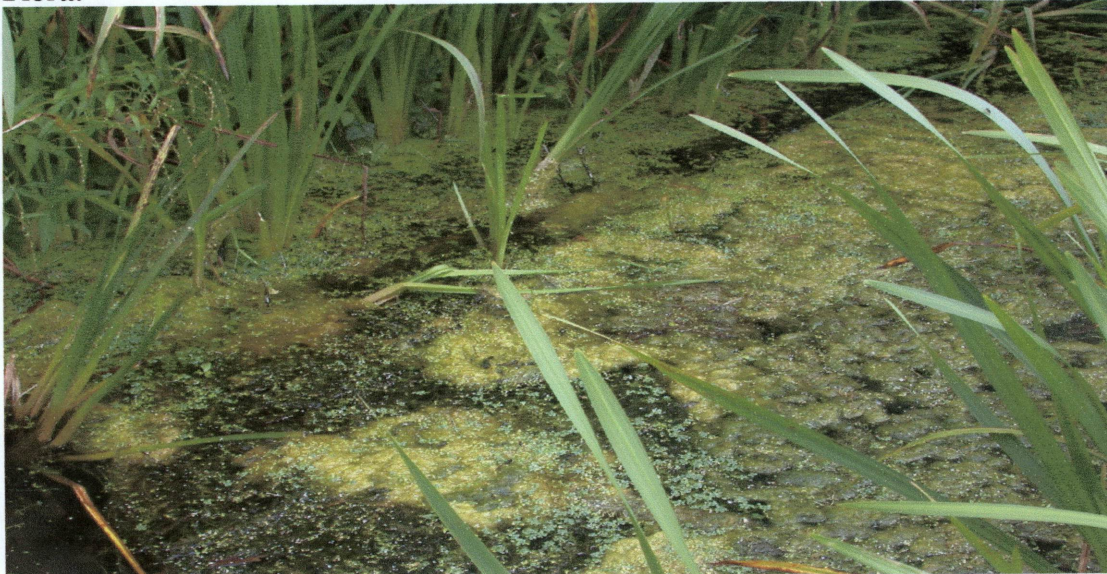
Water depth: 0.7m **Freeboard:** 0.3m

Sediment Depth: 0.2m **Sediment type:** Black mud, Peat.

pH 7.0. Conductivity: 450 microsiemens

Open water: 1. **Water Clarity.** 3 (Scale 1-5)

Flora.



Site 2. Amberley Wild Brooks at TQ 03051 13400

At TQ 03051 13400. *Potamogeton acutifolius* was not found between TQ 03051 13400 and TQ 03086 13459. *Elodea nuttallii* was dominant. The algae, *Mougeotia spp.* and *Spirogyra spp.* were abundant. In addition the following aquatic species were also recorded; *Callitriche stagnalis(fr)*, *Lemna minor(occ)* and *Ranunculus circinatus (r)*. The bankside flora contained three species *Sparganium erectum (dom)*, *Polygonum hydropiper* and *Veronica catenata(occ)*.

At TQ 03086 13459. *Spirodela polyrhiza* was dominant with occasional growths of *Elodea nuttallii* and *Hydrocharis morsus-ranae*. *Sparganium erectum* dominated the bankside. The ditch flora was of low diversity for two reasons, first, there appeared to be a septic tank discharge and second, the ditch was unmanaged and neglected.

Management. The ditch had been neglected probably not managed for 10 years. It was quite close to the village and by a drove leading onto the grazing marsh.

Shade. The site was shaded along both sides by emergent species.

Agricultural use. A mixture of true grazing marsh used as grazing for cattle or as cut grass for hay or the less traditional practice cut for silage.

Reasons for absence. Unmanaged, neglected and shaded?

Site 3. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 04484 14819 (Site 3 on the Amberley Wild Brooks Map)

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Two BSBI records for the square TQ 04- 14- for the years 1993 and 1994 (Square E on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m Ditch depth: 1.0m

Water Depth: 0.5m. Freeboard: 0.3m

Sediment Depth: 0.2m Sediment type: Alluvium, silt.

pH ? Conductivity: ? microsiemens

Open water: 0 Water Clarity. ? (Scale 1-5)

Flora.



Site 3. Amberley Wild Brooks at TQ 04484 14819

The ditch started at TQ 04484 14819 and was at first dominated by *Sparganium erectum* but also had the following species: *Carex riparia* (*fr-ab*), *Alisma plantago-aquatica* (*occ*), *Apium nodiflorum* (*occ*), *Bidens tripartita* (*occ*), *Epilobium palustre* (*occ*), *Juncus effusus* (*occ*), *Stellaria palustris* (*r*) and the national rarity *Leersia oryzoides*. *Potamogeton acutifolius* was absent.

Management. The ditch had not been managed for 10 to 15 years and needed cleansing. It had been recently managed further down at TQ 04473 14820.

Shade. The site was partially shaded along both sides by emergent species.

Agricultural use. True grazing marsh used as grazing for cattle.

Reasons for absence. Unmanaged, neglected and shaded?

Site 3a. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW SITE, TQ 04473 14820 (045 148)

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Two BSBI records for the square TQ 04- 14- for the years 1993 and 1994 (Square E on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m Ditch depth: 1.0m

Water Depth: 0.5m Freeboard: 0.3m

Sediment Depth: 0.2m Sediment type: Alluvium, silt layer over peat and iron layer.

pH 6.7. Conductivity: 200 microsiemens.

Open water: 3. Water Clarity. 1 (Scale 1-5)

Flora. Some 11 metres from Site 3 the ditch had been cleared and *Potamogeton acutifolius* was recorded abundantly alongside the following species; *Potamogeton natans* (occ), *Elodea canadensis* (occ), *Equisetum fluviatile* (occ), *Hydrocharis morsus-ranae* (occ), *Lemna minor*(occ), *Mentha aquatica* (occ), *Sagittaria sagittifolia* (occ) and *Spirodela polyrhiza* (occ). The bankside flora contained the following species; *Juncus effusus* (fr), *Alisma plantago-aquatica* (occ), *Carex acutiformis* (occ), *Carex riparia* (occ), *Filipendula ulmaria* (occ), *Iris pseudacorus* (occ), *Stellaria palustris* (r) and *Persicaria minor* (r). There was an apparent absence of *Sparganium erectum*. The soils clearly had an iron rich layer. This had been broken by recent ditch clearance causing iron ochre to stain the water. This ditch carried on for further 275 metres and *Potamogeton acutifolius* was recorded continuously along this length growing in iron ochre stained, often, shallow water.

Reasons for presence. Recently managed and water quality?

Site 3b. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: TQ 04400 14805 (044 148)

BSBI Grid reference: TQ 044 148. One 1975 BSBI record at Site 3 on the Amberley Wild Brooks Map.

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Two BSBI records for the square TQ 04- 14- for the years 1993 and 1994 (Square E on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m Ditch depth: 1.0m

Water Depth: 0.5m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium, silt layer over peat and iron layer.

pH 6.7. Conductivity: 200 microsiemens.

Open water: 4. Water Clarity. 1 (Scale 1-5)

Flora. *Potamogeton acutifolius* was recorded abundantly alongside the following species; *Hydrocharis morsus-ranae* (fr) *Mentha aquatica* (occ) and *Lemna minor*(r). The bankside flora contained the following species; *Sparganium erectum* (dom), *Juncus effusus* (fr), *Juncus conglomeratus* (occ) and *Lythrum salicaria* (occ). The ditch flora had a low diversity at this point although the ditch seemed no different from Site 3a.

Reasons for presence. Recently managed and water quality?

Site 3c. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW SITE, TQ 04200 14763 (042 148).

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Two BSBI records for the square TQ 04- 14- for the years 1993 and 1994 (Square E on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m **Ditch depth:** 1.0m

Water Depth: 0.5m **Freeboard:** 0.3m

Sediment Depth: 0.2m

Sediment type: Alluvium and silt layer over peat with iron layer.

pH 6.7. Conductivity: 200 microsiemens

Open water: 4. **Water Clarity.** 1 (Scale 1-5)

Flora.



Site 3c. Amberley Wild Brooks at TQ 04200 14763

In the distance in the above photograph can be seen Site 3. The water levels were low, presumably because of the dry summer. Despite these factors *Potamogeton acutifolius* was found abundantly along this ditch and it clearly can be seen in the photograph. The ditch flora had a low diversity at this point although the ditch seemed no different from Site 3a. The following species were also recorded; *Hydrocharis morsus-ranae* (fr), *Equisetum fluviatile* (occ), *Mentha aquatica* (occ) and *Lemna minor*(r). The bankside flora contained the following species; *Sparganium erectum* (dom), *Juncus effusus* (fr), *Juncus conglomeratus* (occ), *Lythrum salicaria* (occ), *Persicaria minor* and the nationally rare grass *Leersia oryzoides*.

Management. The ditch had been recently cleared of vegetation and partially dredged.

Shade. The site was partially shaded along both sides by emergent species.

Agricultural use. True grazing marsh used as grazing for cattle.

Reasons for presence. Recently managed and water quality?

Site 4. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 04407 14696 (044 147)

BSBI Grid reference: TQ 044 147. One 1994 BSBI record (Site 4 on the Amberley Wild Brooks Map)

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Two BSBI records for the square TQ 04- 14- for the years 1993 and 1994 (Square E on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m Ditch depth: 1.0m

Water Depth: 0 to 0.1m Freeboard: 0.8m

Sediment Depth: 0.2m

Sediment type: Thin layer of alluvium (30cms) over Peat.

pH 6.0. Conductivity: 200 microsiemens

Open water: 1. Water Clarity. ? (Scale 1-5)

Flora.



Site 4. Amberley Wild Brooks at TQ 04407 14696

Potamogeton acutifolius was absent from this side ditch. Its absence seemed to be due to two factors. First the ditch was overgrown and second the ditch was muddy with only a few isolated puddles. The dry summer seemed to have excluded or eliminated any growths of *Potamogeton acutifolius*. Thus at the above grid reference the flora was dominated by *Carex acutiformis*, *Carex riparia*, *Juncus effusus* and *Sparganium erectum*. However at TQ 04382 14726 about 25 metres further along and closer to the "main" ditch a small puddle of water held occasional growths of *Hydrocharis morsus-ranae* and on the wet mud, *Baldellia ramunculoides* (r), *Myosotis caespitosa* (occ), *Potamogeton polygonifolius* and *Scutellaria galericulata* (r). The ditch was edged by *Carex acutiformis*, *Carex riparia* and *Stellaria palustris*, *Sium*

latifolium, *Potentilla palustris* and *Persicaria minor* were also recorded. Hidden amongst the edge vegetation were occasional growths of the liverwort *Riccia fluitans*.

Management. The ditch had not been dredged or recently cleared of vegetation for 10 to 15 years.

Shade. The site was shaded along both sides by emergent species.

Agricultural use. True grazing marsh used as grazing for cattle.

Reasons for absence. Ditch overgrown and dry.

Site 5. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 04208 14624 (042 146)

BSBI Grid reference: TQ 042 146: One 1975 BSBI record (Site 5 on the Amberley Wild Brooks Map)

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Two BSBI records for the square TQ 04- 14- for the years 1993 and 1994 (Square E on the Amberley Wild Brooks Map).

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m **Ditch depth:** 1.0m

Water Depth: 0.5m **Freeboard:** 0.2m

Sediment Depth: 0.3m

Sediment type: Peat.

pH 6.7. Conductivity: 200 microsiemens

Open water: 0. Water Clarity. ? (Scale 1-5)

Flora.

The ditch outwardly mirrored that in the photograph for Site 4. However the pH was higher at 6.7 and the ditch had a water depth of 0.5m. Again the flora was dominated by *Sparganium erectum* and the ditch was totally overgrown. However the diversity was lower losing the more acid species. In the few gaps there were, over the 50 metre survey length, the following species were found; *Equisetum fluviatile* (occ), *Mentha aquatica* (occ), *Myosotis scorpioides* (occ), *Scutellaria galericulata*(r), *Stellaria palustris*(r), *Persicaria minor*(r) and *Sium latifolium* (r). *Potamogeton acutifolius* was absent.

Management. The ditch had not been dredged for about 7 years or recently cleared of vegetation.

Shade. The site was shaded along both sides by emergent species.

Agricultural use. True grazing marsh used as grazing for cattle.

Reasons for absence. Unmanaged and water levels too low?

Square C. TQ 02- 14-, there are Four BSBI records for this square covering the years 1981, 1988, 1993 and 1994.

A ditch length running from A NEW SITE, TQ 02712 14575 (C1) to another NEW SITE, TQ 02544 14686 (C2) to a third NEW SITE, TQ 02562 14739 (C3) where all contained frequent to abundant *Potamogeton acutifolius* (Site C1 is excluded from the count of new sites as it represents those records for the square TQ 02- 14-). A length of ditch on the other side of the drove also contained abundant *Potamogeton acutifolius*. The grid reference for this site was TQ 02588 14639 and this was the fourth NEW SITE. *Potamogeton acutifolius* was recorded for approximately 25 metres either side of this grid reference. The square could contain more sites for *Potamogeton acutifolius* but the methodology only sought to establish its presence in any square in the absence of any six figure grid references given for the BSBI records. In detail the physical and chemical characteristics of these ditches are as follows:

Site C1. Status of *Potamogeton acutifolius*: PRESENT

A NEW SITE, TQ 02712 14575.

Ditch width: 4.0m

Ditch depth: 1.3m

Water Depth: 0.8m

Freeboard: 0.3m

Sediment Depth: 0.2m

Sediment type: Peat

pH 6.5

Conductivity 250 microsiemens

Open water: 2

Water Clarity. 4 (Scale 1-5)

Flora.



Site C1. Amberley Wild Brooks at TQ 02712 14575

The flora at this site contained frequent growths of *Potamogeton acutifolius*. Growing in association with it were the following species: *Equisetum fluviatile* (fr), *Hydrocharis morsus-ranae* (fr), *Lemna minor* (occ), *Persicaria amphibia* (occ), *Potamogeton natans* (occ) and *Sagittaria sagittifolia* (occ). The aquatic inner edge contained such species as; *Alisma plantago-aquatica* (occ), *Apium nodiflorum* (occ), *Mentha aquatica* (occ), *Myosotis scorpiodes* (occ) and *Oenathe fistulosa* (occ). The bankside was dominated by *Sparganium erectum* and the following species were in association with it; *Carex pseudocyperus* (fr), *Filipendula ulmaria* (fr), *Juncus effusus* (occ), *Lycopus europaeus* (fr), *Lythrum salicaria* (occ), *Polygonum hydropiper* (fr), *Rumex hydrolapathum* (occ) and *Phalaris arundinacea* (occ). Along the edges of this ditch the liverwort, *Riccia fluitans* was recorded occasionally. The flora along this ditch changed insignificantly such that Site C2 and Site C3 can be described as above for Site C1. Beyond Site C3 the ditch was unmanaged and dominated by *Sparganium erectum*. There was one exception to this however *Catabrosa aquatica* was recorded occasionally on both banksides between Site C2 and Site C3.

Management. The ditch was becoming overgrown with emergent plants approximately 7 to 10 years into the management cycle.

Shade. The site was shaded along both sides by emergent species.

Agricultural use. Although the sites bordered a drove, the ditch was a wet fence edging disused overgrown grazing marsh, which appeared dominated by *Deschampsia caespitosa*.

Reasons for presence. Correct point in the management cycle although ditch will need to be cleansed in one to two years time and water quality?

Site C4.

At Site C4 the ditch was slightly less wide but nonetheless contained abundant to frequent *Potamogeton acutifolius*. No photograph was taken of this ditch but it had the following physical, chemical and floral characteristics:

Site C4. Status of *Potamogeton acutifolius*: PRESENT

A NEW SITE, TQ 02588 14639

Ditch width: 3.0m

Ditch depth: 1.3m

Water Depth: 0.8m

Freeboard: 0.3m

Sediment Depth: 0.2m

Sediment type: Peat

pH 6.5

Conductivity 250 microsiemens

Open water: 3

Water Clarity. 4 (Scale 1-5)

Flora.

Growing in association with the abundant *Potamogeton acutifolius* were the following species; *Hydrocharis morsus-ranae* (fr), *Lemna minor* (occ), *Lemna trisulca* (occ) *Potamogeton natans* (occ) and *Spirodela polyrhiza* (occ). The aquatic inner edge contained such species as; *Alisma plantago-aquatica* (occ), *Apium nodiflorum* (occ), *Mentha aquatica* (occ) and *Myosotis scorpiodes* (occ). The bankside was dominated by no one species although *Sparganium erectum* was the most frequently recorded,

occasionally locally abundant species. The following assemblage was in association with it; *Filipendula ulmaria* (fr), *Lycopus europaeus* (fr), *Apium nodiflorum* (occ), *Carex acutiformis* (occ), *Carex riparia* (occ), *Juncus effusus* (occ), *Juncus inflexus* (occ), *Leersia oryzoides* (occ), *Lythrum salicaria* (occ), *Oenanthe fistulosa* (occ), *Polygonum hydropiper* (occ), *Phalaris arundinacea* (occ) and *Rumex conglomeratus* (occ). Why the national rarity *Leersia oryzoides* should be recorded on this side of the drove and absent on the other side, cannot be explained.

Management. The ditches were becoming overgrown with emergent plants probably 7 years into the management cycle.

Shade. The site was shaded along both sides by emergent species.

Agricultural use. Although the site bordered a drove the ditch was still a wet fence edging true grazing marsh used as grazing for cattle.

Reasons for presence. Correct point in the management cycle and water quality?

Site D1. Status of *Potamogeton acutifolius*: ABSENT

TQ 03098 14147 also covered the Ten BSBI records: 1979, 1981, Two 1982, Two 1985, 1984, 1989, 1993 and 1994 for the square TQ 03-14-.

Ditch width: 5.0m

Ditch depth: 1.8m

Water Depth: 1.2m

Freeboard: 0.4m

Sediment Depth: 0.2m

Sediment type: Alluvium

pH 6.8

Conductivity 250 microsiemens

Open water: 3

Water Clarity. 4 (Scale 1-5)

Flora.



Site D1. Amberley Wild Brooks, the River Arun feeder point at TQ 03098 14147. *Potamogeton acutifolius* was not found at this site neither was it found in the ditch on the western side of the drove. The water, to a junction with a feeder ditch from the right just visible and as far as can be seen in the photograph was remarkably free of true aquatic plants. *Hydrocharis morsus-ranae*, *Equisetum fluviatile* and *Persicaria amphibia* were the most abundant aquatic plants and they were recorded only

occasionally. The emergent plant growing in the water was mostly *Sparganium erectum* but caught up with it was the occasional *Sagittaria sagittifolia* along with the occasional growth of *Butomus umbellatus*. The inner edge contained abundant growths of *Myosotis scorpioides* and the occasional growths of *Apium nodiflorum*, *Butomus umbellatus* and *Oenanthe fistulosa*. The bankside was not dominated by any one plant. There was a mix of *Sparganium erectum*, *Filipendula ulmaria*, *Glyceria maxima*, *Lythrum salicaria*, *Phalaris arundinacea* and *Rumex conglomeratus*. *Carex acutiformis*, *Carex riparia* and *Polygonum hydropiper* were occasional components of the assemblage.

Management. The ditch was becoming overgrown with emergent plants but it was probably only cleared last year.

Shade. The site was shaded along the west side by emergent species.

Agricultural use. Although the site bordered a drove the ditch was still a wet fence edging true grazing marsh to the east, which was used as grazing for cattle.

Reasons for absence. Uncertain, possibly over management.

Site D2. Status of *Potamogeton acutifolius*: PRESENT

Another NEW SITE, TQ 03078 14363 but excluded from the count as it represents the Ten BSBI records: 1979, 1981, Two 1982, Two 1985, 1984, 1989, 1993 and 1994 for the square TQ 03-14-.

Ditch width: 5.0m
Ditch depth: 1.8m
Water Depth: 1.2m
Freeboard: 0.4m
Sediment Depth: 0.2m
Sediment type: Peat

pH 6.4

Conductivity 200 microsiemens

Open water: 2

Water Clarity. 4 (Scale 1-5)

Flora.



Site D2. Amberley Wild Brooks at TQ 03078 14363

Site D2 was a continuation of the same feeder drain at Site D1 but some 216 metres further into the grazing marsh. *Potamogeton acutifolius* was found growing abundantly and *Elodea canadensis* was dominant. Growing in association with these two species were the following; *Potamogeton trichoides* (fr), *Equisetum fluviatile*(fr),

Potamogeton natans (fr), *Sagittaria sagittifolia* (fr), *Persicaria amphibia* (occ), *Lemna minor* (r) and *Hydrocharis morsus-ranae* (r). The aquatic inner edge contained such species as; *Alisma plantago-aquatica* (occ), *Epilobium palustre* (occ), *Myosotis scorpiodes* (occ) and *Apium nodiflorum* (r). The bankside was dominated by no one species although *Sparganium erectum* was the most frequently recorded, occasionally locally abundant species. The following assemblage was in association with it; *Filipendula ulmaria* (fr), *Lycopus europaeus* (fr), *Apium nodiflorum* (occ), *Carex acutiformis* (occ), *Carex riparia* (occ), *Juncus effusus* (occ), *Juncus inflexus* (occ), *Lythrum salicaria* (occ), *Oenanthe fistulosa* (occ), *Polygonum hydropiper* (occ), *Phalaris arundinacea* (occ), *Rumex conglomeratus* (occ) and *Carex pseudocyperus* (r).

Management. The ditch was becoming overgrown with emergent plants but it was probably cleansed 3 years ago.

Shade. The site was partially shaded along the west side by emergent species.

Agricultural use. Although the site bordered a drove the ditch was still a wet fence edging true grazing marsh to the east, which was used as grazing for cattle.

Reasons for presence. Correct point in the management cycle, over peat and a suitable water quality?

Site F1. Status of *Potamogeton acutifolius*: ABSENT

TQ 02164 15016 covered the Two BSBI records, 1993 and 1994 for the square TQ 02- 15-.

Ditch width: 8.0m
Ditch depth: 2.5m
Water Depth: 1.0m
Freeboard: 1.3m
Sediment Depth: 0.2m
Sediment type: Alluvium and Silt over Peat

pH 6.5

Conductivity 250 microsiemens

Open water: 0

Water Clarity. ? (Scale 1-5)

Flora.



Site F1. Amberley Wild Brooks at TQ 02614 015016

Site F1 was on the extreme northern edge of the grazing marsh where the ground was a lot higher. As a consequence the freeboard was approximately 1.3 metres which in itself shaded the ditch. The flora was dominated by *Lemna minor* although *Potamogeton crispus* was recorded occasionally. The edge was dominated by *Juncus effusus* and *Glyceria maxima* was locally abundant.

Management. The ditch was probably only cleansed 3 years ago but the dominance of *Lemna minor* suggested possible nutrient enrichment.

Shade. The site was shaded along both the west and east sides by emergent species and the freeboard of the ditch also caused shading.

Agricultural use. The ditch was still a wet fence edging *Juncus effusus* "pasture" which surprisingly was used as grazing for cattle.

Reasons for absence. Pollution and shading?

Site G 1. Status of *Potamogeton acutifolius*: ABSENT.

TQ 03025 15073 also covers the One 1981 BSBI record for the square TQ 03- 15-

Ditch width: 6.0m widening out to 20 metres

Ditch depth: 1.2m

Water Depth: 0.3m

Freeboard: 0.1m

Sediment Depth: 0.8m

Sediment type: Peat

pH 6.3

Conductivity 300 microsiemens

Open water: 3

Water Clarity. 4 (Scale 1-5)

Flora.



Site G1. Amberley Wild Brooks at TQ 03025 15073

Site G1 was part of the Sussex Wildlife Trust Reserve and was in reality a marsh bordering a feeder stream from the nearby higher ground. The marsh was dominated by *Glyceria maxima* with frequent to abundant growths of *Sparganium erectum*. The

water contained a diatomaceous bloom which produced the floating brown sludge seen in the photograph. The water was clear and the bottom deep sediments were easily seen. However the "clarity" was the result of its shallowness as the water was stained with iron ochre. *Callitriche stagnalis* locally dominated the water but covered only about 2% of the open water. The following species were also recorded: *Apium nodiflorum* (fr), *Equisetum fluviatile* (occ), *Lycopus europaeus* (occ) and *Alisma plantago-aquatica* (r). *Potamogeton acutifolius* was not recorded at this site.

Management. The ditch was probably kept free of vegetation by the deep iron rich sediments, which are an unsuitable rooting medium for many aquatic plants. The edges had not been managed for approximately 15 years.

Shade. The site was shaded along both the west and east sides by emergent species.

Agricultural use. The stream was still a wet fence which further up the catchment edged *Juncus effusus* "pasture" which surprisingly was used as grazing for cattle.

Reasons for absence. Pollution, shading and sediments too deep and unconsolidated?

Site G 2. Status of *Potamogeton acutifolius*: ABSENT.

TQ 03065 15161 also covers the One 1981 BSBI record for the square TQ 03- 15-

Ditch width: 4.0m

Ditch depth: 1.2m

Water Depth: ?

Freeboard: 0.3m

Sediment Depth: ?

Sediment type: Peat

pH ?

Conductivity ? microsiemens

Open water: 0

Water Clarity. ? (Scale 1-5)

Further into the Sussex Wildlife Trust reserve another ditch was found at TQ 03065 15161. This ran parallel to the stream. No photograph was taken of this ditch but it was overgrown by emergent species such as *Sparganium erectum*, *Glyceria maxima* and *Juncus effusus*. *Potamogeton acutifolius* was not recorded at this site.

Management. The ditch had not been managed for approximately 15 years.

Shade. The site was shaded along both the west and east sides by emergent species.

Agricultural use. The ditch was still a wet fence which further up the catchment was edged by *Juncus effusus* "pasture" which surprisingly was used as grazing for cattle.

Reasons for absence. Lack of management shading the site?

Although these two sites represent the square TQ 03- 15- and *Potamogeton acutifolius* was not recorded at these sites this does not preclude their presence further along the stream and ditch into the grazing marsh proper.

PULBOROUGH BROOKS.

Site 1a and 1b. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW SITE Site 1a TQ 04761 16803 (048 168) to
Site 1b 04848 16700 (048 167) best fit for

BSBI Grid reference: TQ 048 167: One 1990 BSBI record

N.B. All sites extension of the same ditch (see Map of Pulborough Brooks).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 5.0m

Ditch depth: 1.2m

Water Depth: 0.5m

Freeboard: 0.6m

Sediment Depth: 0.1m

Sediment type: Alluvial yellow-brown mud

pH 7.4 Conductivity: 350 microsiemens

Open water: 3. Water Clarity. 4 (Scale 1-5)

Flora.



Site 1a. Pulborough Brooks RSPB reserve at TQ 04761 16803

Site 1a at TQ 04761 16803 had abundant *Potamogeton acutifolius* and the following species grew in association with it: *Ceratophyllum demersum* (fr), *Potamogeton lucens* (fr), *Potamogeton trichoides* (fr—occ), *Equisetum fluviatile* (fr) and *Sagittaria sagittifolia* (occ). At the inner edge to the ditch grew: *Mentha aquatica* (occ) and *Myosotis scorpioides* (occ), whilst the bankside had the following species:

Sparganium erectum (fr), *Juncus effusus* (fr), *Carex acutiformis* (occ) and *Rumex hydrolapathum* (occ). On the left bank only *Oenanthe silaifolia* was recorded. Site 1b at TQ 04848 16700 had abundant *Potamogeton acutifolius* and the following species grew in association with it: *Ceratophyllum demersum* (fr), *Equisetum fluviatile* (fr) and *Persicaria amphibium* (fr). The bankside had the following species: *Sparganium erectum* (fr), *Juncus effusus* (fr), *Bidens tripartita* (occ), *Juncus conglomeratus* (occ), *Carex paniculata* (r) and *Lythrum salicaria* (r).

Management. The ditch vegetation had been managed with a traditional tractor and bucket approximately 2 years ago.

Shade. The site was partially shaded by emergent species.

Agricultural use. The ditch formed a wet fence edging in part a *Juncus effusus* wet corner at Site 1a but the fields were mostly under grass and were used as grazing for cattle or cut for hay or silage.

Reasons for presence. Correct point in the management cycle and water quality?

Site 1c, 1d and 1e. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: Site 1c TQ 04899 16680 (049 167)

BSBI Grid reference: TQ 049 167: One 1994 BSBI record

NEW SITE, TQ 04957 16656 (050 167) Site 1d.

NEW SITE, TQ 05042 16608 (050 166) Site 1e.

N.B. All sites extension of the same ditch (see Map of Pulborough Brooks).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 5.0m **Ditch depth:** 1.2m

Water Depth: 0.5m **Freeboard:** 0.6m

Sediment Depth: 0.1m **Sediment type:** Alluvial yellow-brown mud

pH 7.4 Conductivity: 350 microsiemens

Open water: 2-3. **Water Clarity.** 4 (Scale 1-5)

Flora.

Site 1c at TQ 04899 16680 had abundant *Potamogeton acutifolius* and the following species grew in association with it: *Ceratophyllum demersum* (fr), *Potamogeton lucens* (fr), *Potamogeton trichoides* (fr – occ), *Equisetum fluviatile* (fr) and *Sagittaria sagittifolia* (occ). At the inner edge to the ditch grew: *Mentha aquatica* (occ) and *Myosotis scorpioides* (occ), whilst the bankside had the following species: *Sparganium erectum* (fr), *Juncus effusus* (fr), *Carex acutiformis* (occ) and *Rumex hydrolapathum* (occ).

Site(s) 1d to 1e at TQ 04957 16656 to TQ 05042 to 16608 had dominant growths of *Potamogeton acutifolius* and the following species grew in association with it: *Ceratophyllum demersum* (fr), *Potamogeton lucens* (fr), *Potamogeton trichoides* (fr – occ), *Equisetum fluviatile* (fr) and *Sagittaria sagittifolia* (occ). At the inner edge to the ditch grew: *Mentha aquatica* (occ) and *Myosotis scorpioides* (occ), whilst the bankside had the following species: *Sparganium erectum* (fr), *Juncus effusus* (fr), *Carex acutiformis* (occ) and *Rumex hydrolapathum* (occ).

Management. The ditch vegetation had been managed approximately 2 years ago.

Shade. The site was partially shaded by emergent species



Site 1c. Pulborough Brooks RSPB reserve at TQ 04899 16680

Agricultural use. The ditch formed a wet fence and the fields were used as grazing for cattle or cut for hay or silage.

Reasons for presence. Correct point in the management cycle and water quality?

Site 2 Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW RECORD TQ 04933 16651 (049 167)
BSBI Grid reference: TQ 049 167: One 1994 BSBI record (Site 1c above)
N.B. New record found on different ditch (see Map of Pulborough Brooks).
Additional Records, same year: None
Duplicate Records, different years: None
1 km Square: None
10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 4.0m **Ditch depth:** 1.2m
Water Depth: 0.5m **Freeboard:** 0.6m
Sediment Depth: 0.1m **Sediment type:** Alluvial yellow-brown mud
pH 7.4 Conductivity: 350 microsiemens
Open water: 3. **Water Clarity:** 4 (Scale 1-5)

Flora.

Site 2 TQ 04933 16651 was a smaller feeder drain to the south of and one which joined the main ditch close to Site 1d. Site 2 contained *Potamogeton acutifolius*, which was frequent to abundant. The following species grew in association with it: *Nuphar lutea* (occ), *Potamogeton natans* (occ), *Equisetum fluviatile* (occ) *Lemna minor* (occ) *Persicaria amphibium* (occ), *Spirodela polyrhiza* (occ) and *Hydrocharis morsus-ranae* (r). The bankside had the following species: *Juncus effusus* (fr), *Juncus inflexus* (fr), *Sparganium erectum* (fr), *Carex riparia* (occ) and *Glyceria maxima* (occ).

Management. The ditch vegetation had been managed with a traditional tractor and bucket approximately 3 years ago.

Shade. The site was partially shaded by emergent species.

Agricultural use. The ditch formed a wet fence edging in part a *Juncus effusus* wet corner but the fields were mostly under grass and were used as grazing for cattle and cut for hay or silage.

Reasons for presence. Correct point in the management cycle and water quality?

Site 3 Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW RECORD TQ 04972 16685 (050 167) (cf Site 1d)

BSBI Grid reference: None

N.B. New record found on different ditch to 1d (see Map of Pulborough Brooks).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 4.0m

Ditch depth: 1.2m

Water Depth: 0.5m

Freeboard: 0.6m

Sediment Depth: 0.1m

Sediment type: Alluvial yellow-brown mud

pH 7.4 Conductivity: 350 microsiemens

Open water: 3. **Water Clarity.** 4 (Scale 1-5)

Flora.

Site 3 TQ 04972 16685 was a smaller feeder drain to the north of and one which joined the main ditch at Site 1d (see Map of Pulborough Brooks). Site 3 contained *Potamogeton acutifolius*, which was frequent to abundant. The following species grew in association with it: *Potamogeton natans* (occ), *Equisetum fluviatile* (occ) *Lemna minor* (occ), *Persicaria amphibium* (occ), *Spirodela polyrhiza* (occ) and *Hydrocharis morsus-ranae* (r). The bankside had the following species: *Juncus effusus* (fr), *Juncus inflexus* (fr), *Sparganium erectum* (fr), *Carex riparia* (occ) and *Glyceria maxima* (occ).

Management. The ditch vegetation had been managed with a traditional tractor and bucket approximately 3 years ago.

Shade. The site was partially shaded by emergent species.

Agricultural use. The ditch formed a wet fence, the fields were mostly under grass and were used as grazing for cattle and cut for hay or silage.

Reasons for presence. Correct point in the management cycle and water quality?

Site 4. Status of *Potamogeton acutifolius*: PRESENT

**Present Grid Reference: NEW SITE TQ 05011 16821 (050 169) to
NEW SITE TQ 04922 16876 (049 169) (Site 4a, see Map
of Pulborough Brooks).**

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 5.0m Ditch depth: 1.2m

Water Depth: 0.5m Freeboard: 0.6m

Sediment Depth: 0.1m Sediment type: Alluvial yellow-brown mud

pH 7.4 Conductivity: 350 microsiemens

Open water: 3. Water Clarity. 4 (Scale 1-5)

Flora.

Site 4 at TQ 05011 16821 to 04922 16876 was dominated by *Potamogeton acutifolius* throughout. The following species grew in association with it: *Hydrocharis morsus-ranae* (occ), *Equisetum fluviatile* (occ) *Lemna minor* (occ) and *Spirodela polyrhiza* (occ). The bankside had the following species: *Sparganium erectum* (fr), *Juncus effusus* (fr), *Carex acutiformis*(occ) and *Glyceria maxima* (occ).

Management. The ditch vegetation had been managed with a traditional tractor and bucket approximately 3 years ago.

Shade. The site was partially shaded by emergent species.

Agricultural use. The ditch formed a wet fence, the fields were under grass and were used as grazing for cattle and cut for hay or silage.

Reasons for presence. Correct point in the management cycle and water quality?

Site 5 Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: TQ 04712 16688 (047 167)

BSBI Grid reference: TQ 047 167, One 1990, BSBI record for (see Map of Pulborough Brooks).

Additional Records, same year: None

Duplicate Records, different years: Two, 1993 and 1994

1 km Square: None

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 5.0m **Ditch depth:** 1.4m

Water Depth: 0.9m **Freeboard:** 0.3m

Sediment Depth: 0.2m **Sediment type:** Alluvial yellow-brown mud

pH 6.8 Conductivity: 375 microsiemens

Open water: 1. **Water Clarity.** 3 (Scale 1-5)

Flora.



Site 5 Pulborough Brooks RSPB reserve at TQ 04712 16688

Site 5 at TQ 04712 16688 was dominated by *Elodea nuttallii*. Growing in association with it were the following species: *Potamogeton acutifolius* (fr), *Nuphar lutea* (fr), *Persicaria amphibia* (occ). The following species grew along the inner edge: *Mentha aquatica* (occ) and *Myosotis scorpioides* (occ). The bankside was dominated by *Sparganium erectum* (dom), *Juncus effusus* (occ) and *Juncus inflexus* (occ).

Management. The ditch was becoming overgrown and was in the latter stages of the management cycle probably managed 6 years ago.

Shade. The site was partially shaded by emergent species.

Agricultural use. The ditch formed a wet fence edging on the east side fields which were under grass and were used as grazing for cattle or cut for hay or silage. The west side was probably only cut for hay or silage as there was open access to the River Arun, this being situated over the flood bank.

Reasons for presence. Marginally correct point in the management cycle and appropriate water quality?

Site 6. Status of *Potamogeton acutifolius*: PRESENT.

TQ 05200 17062 complies with the Three 1995 BSBI records for the square TQ 05- 17- Square A . (see Map of Pulborough Brooks).

Ditch width: 5.0m
Ditch depth: 1.4m
Water Depth: 0.9m
Freeboard: 0.3m
Sediment Depth: 0.2m
Sediment type: Alluvial yellow-brown mud
pH 6.8
Conductivity 375 microsiemens
Open water: 1
Water Clarity. 3 (Scale 1-5)

Flora.

Site 6 at TQ 05200 17062 was again dominated by *Elodea nuttallii* but there the similarity ended with Site 5. Growing in association with it were the following species: *Potamogeton acutifolius* (*fr*), *Potamogeton trichoides* (*occ*), *Ceratophyllum demersum* (*occ*), *Nuphar lutea* (*occ*) and *Sagittaria sagittifolia* (*occ*). The following species grew along the inner edge: *Mentha aquatica* (*occ*) and *Myosotis scorpioides* (*occ*). The bankside was dominated by *Sparganium erectum* (*dom*), *Juncus effusus* (*occ*) and *Juncus inflexus* (*occ*).

Management. The ditch was becoming overgrown and was in the latter stages of the management cycle probably managed 6 years ago.

Shade. The site was partially shaded by emergent species.

Agricultural use. The ditch formed a wet fence edging on the east side fields which were under grass and were used as grazing for cattle or cut for hay or silage. The west side was probably only cut for hay or silage as there was open access to the River Arun, this being situated over the flood bank.

Reasons for presence. Marginally correct point in the management cycle and appropriate water quality?

HOUGHTON BRIDGE.

Site 7. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference:	TQ 02438 11836 to TQ 02486 11908 (024 118 to 025 119)
BSBI Grid reference:	TQ 024 119. One 1988 BSBI record
Additional Records, same year:	None
Duplicate Records, different years:	None
1 km Square:	None
10km Square:	None

Ditch width: 4.0m Ditch depth: 1.4m
Water Depth: 0.6m Freeboard: 0.8m
Sediment Depth: 0m Sediment type: Alluvial yellow-brown mud
pH 7.9 Conductivity: 450 microsiemens
Open water: 3. Water Clarity. 3 (Scale 1-5)

Flora.



Site 7. Houghton Bridge by the River Arun close to Amberley Station at TQ 02438 11836 looking towards TQ 02486 11908

The ditch had just been cleansed and contained throughout its length the following species: *Ceratophyllum demersum* (fr), *Hydrocharis morsus ranae* (fr), *Equisetum fluviatile* (occ), *Lemna minor* (occ) and surprisingly *Potamogeton lucens* (occ).

Understandably the ditch edge contained few species and only *Apium nodiflorum* was recorded. The bankside seemed to have been dominated by *Sparganium erectum* and *Juncus inflexus*. The cleansing ended at TQ 02022 12016 and the only real change was that *Spirodela polyrhiza* was also found. Beyond this the ditch was totally overgrown with *Sparganium erectum*.

Management. The ditch had just been dredged.

Shade. The site was partially shaded by its depth and low water level.

Agricultural use. The ditch formed a wet fence edging fields which to the west were under grass and cut for hay or silage. The east side bordered the River Arun.

Reasons for absence. Ditch just cleansed and water levels too low?

HOUGHTON BRIDGE

Site 8. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 01900 12162 (019 122)

BSBI Grid reference: TQ 019 121. One 1990 BSBI record

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 3.0m Ditch depth: 1.4m

Water Depth: 0.3m Freeboard: 1.1m

Sediment Depth: 0m Sediment type: Alluvial yellow-brown mud

pH 7.9 Conductivity: 450 microsiemens

Open water: 4. Water Clarity. 3 (Scale 1-5)

Flora.



Site 8 Houghton Bridge at TQ 01900 12162

Site 8 was no longer a wet fence and was almost dry. What water there was only contained *Spirodela polyrhiza*. The edge and presumably ditch had been dominated by *Phragmites australis* and some *Sparganium erectum*. Occasional growths of *Lycopus europaeus* were found.

Management. The ditch had just been dredged.

Shade. The site was partially shaded by its depth and low water level.

Agricultural use. The ditch no longer formed a wet fence as it edged fields which were cut for hay or silage. The east side was quite close to the River Arun.

Reasons for absence. Ditch just cleansed and water levels too low?

NORTH STOKE

Site 9. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 01806 10673 (018 107)

BSBI Grid reference: TQ 018 107. One 1995 BSBI record

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: TQ 01- 10-. One 1989 and one 1995 BSBI record

10km Square: TQ 0—1--. One BSBI record in 1975, 1978, 1981 and 1997.

Ditch width: 4.0m

Ditch depth: 1.4m

Water Depth: 0.2m

Freeboard: 0.9m

Sediment Depth: 0.3m

Sediment type: Alluvial yellow-brown mud

pH 7.9 Conductivity: 450 microsiemens

Open water: 0. **Water Clarity.** ? (Scale 1-5)

Flora.



Site 9 North Stoke at TQ 01806 10673

The site was reached by walking down a drove towards the River Arun from the high ground of North Stoke. This was the only ditch in the area and it was completely overgrown with *Sparganium erectum* and had a *Glyceria maxima* edge. What water there was contained *Lemna minor* and *Spirodela polyrhiza*. The whole length of the ditch either side of the drove throughout the square TQ 01- 10- was exactly the same.

Management. The ditch needed dredging being perhaps 15 years since it was last cleansed.

Shade. The water was totally shaded by the emergent species.

Agricultural use. The ditch no longer formed a wet fence as it edged fields which were cut for hay or silage.

Reasons for absence. Ditch in need of management and water levels too low?

The Square TQ 02-10-, a 1988 BSBI record. There were two ditches found in this square. The first ditch was an extension of the ditch seen at Site 9. The flora had not changed and *Potamogeton acutifolius* was absent. The other ditch was in a similar condition and again it must be assumed that *Potamogeton acutifolius* was absent.
Reasons for absence. Ditch in need of management and water levels too low?

The Square TQ 0—1--, One 1975, One 1978, Two 1981 and One 1997 BSBI records. The area covered by this 10km square covers North Stoke, Houghton Bridge, Amberley Wild Brooks and Pulborough Brooks so it must be assumed that the above records have been covered.

The Square 02- 08- South Stoke?. One possible habitat for this site was at the Wildfowl and Wetlands Trust (WWT) where the species could not be found. Other possible habitats were now shaded by mature *Salix fragilis* but even without the shading it was doubtful whether the ditches found would have been a suitable habitat. The name for the site causes some concern as the square given is at the village of Offham one full kilometre square away from South Stoke! It is possible that this site should be in the square TQ 02- 10-, as the site name given was "South Stoke", if so then the one ditch found in this square has been covered by the above survey.

LANCING

Site 10. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 20193 06367 (202 064)
BSBI Grid reference: TQ 202 064. Three 1980 BSBI records.
Additional Records, same year: Two
Duplicate Records, different years: None
1 km Square: None
10km Square: None

Ditch width: 3.0m Ditch depth: 1.4m
Water Depth: 0.0m Freeboard: 1.3m
Sediment Depth: 0.1m Sediment type: Alluvial yellow-brown mud
pH ? Conductivity: ? microsiemens
Open water: 0. Water Clarity. ? (Scale 1-5)

Flora.



Site 10. TQ 20193 06367 close to North Lancing.

The ditch found ran down towards the River Adur close to the estuary by which Shoreham by Sea was situated. It was clear that the area had been drained since 1980 and the adjacent field was under arable. The near side was an abandoned runway system which was possibly once part of the Shoreham Airport and was cut in two by the new bypass road for Shoreham and Worthing. Although the ditch was searched for 50 or more metres until the grid reference fell outside the given grid reference there was no chance of re-discovering *Potamogeton acutifolius*. The ditch was dry throughout. In addition it was heavily shaded on one side mainly by *Crataegus monogyna* and on the other side was edged by a field of broad beans. The ditch contained *Phragmites australis* and *Impatiens glandulifera*.

Reasons for absence. Ditch in need of management and water levels too low?

LANCING

Site 11. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 20124 06186 (201 062)

BSBI Grid reference: TQ 201 062. Two 1993 BSBI records.

Additional Records, same year: One

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 3.0m

Ditch depth: 1.5m

Water Depth: 0.3m

Freeboard: 1.0m

Sediment Depth: 0.2m

Sediment type: Alluvial yellow-brown mud

pH ? Conductivity: ? microsiemens

Open water: 0. Water Clarity. ? (Scale 1-5)

Flora.



Site 11. North Lancing at TQ 20124 06186

Site 11 ran parallel to the B road which itself was close to a junction with the main A27 Trunk road. The ditch was overgrown, deep, steep-sided and shaded by *Crataegus monogyna*, *Fraxinus excelsior*, *Prunus spinosa* and *Rubus spp.*, *Calystegia sepium* grew over the *Rubus spp.* and the emergent species. The water contained dominant growths of *Lemna minor* and was edged by *Phragmites australis (occ)*, *Glyceria maxima (occ)* and *Carex riparia*.

Reasons for absence. Ditch in need of management and water levels too low?