

CHAPTER 4. EAST 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 East Sussex there were 9 BSBI sites containing 6 figure grid references and all were found on the Pevensey Levels. In the present survey only 4 sites were found to contain *Potamogeton acutifolius*. The loss of 5 BSBI sites represents an overall reduction of 56%. However *Potamogeton acutifolius* was found in 6 new sites, close to these 4 original BSBI sites, giving 10 sites, an overall increase in East Sussex of 11%.

Such an analysis hides a more realistic view of the status of *Potamogeton acutifolius* on the Pevensey Levels. All of these 4 BSBI and the 6 new sites are found as a cluster of sites on the Pevensey Levels, south of the main road to Eastbourne. To the north of this road there were 3 BSBI sites, Sites 7, 8 and 9, where no present day sites for *Potamogeton acutifolius* could be found. Another site, Site 6, was located to the east of the Pevensey Levels close to the Hooe Levels and again *Potamogeton acutifolius* could not be found. The remaining BSBI site, Site 5 where again *Potamogeton acutifolius* was absent, was within 50m of a new site, Site 5a. Both sites were located in the cluster of sites south of the main road to Eastbourne. Thus it is best to view the results as an overall decline in the Pevensey Levels of 4 BSBI sites giving a 44% reduction in the BSBI sites. In support of this view of an overall decline rather than an 11% increase, there were several BSBI sites for *Potamogeton acutifolius* on the Pevensey Levels having grid references representing either a 1km or 10km square and having no 6 figure grid reference. Most of these squares were located to the north of the main road to Eastbourne. Randomised searches of 100m ditch lengths in these squares failed to find any sites for *Potamogeton acutifolius*. There is a need to re-survey all the ditches found on the Pevensey Levels to establish the true status of *Potamogeton acutifolius* on this nationally important wetland.

The only other site in East Sussex once containing *Potamogeton acutifolius* was a 1990, BSBI, 2 figure grid reference (10km square) titled as "marshes near Berwick". The wetland areas likely to contain marshes near Berwick were selected on the Ordnance Survey map. On reaching the area, these wetlands were either a new fishery lake, an unsuitable tree-lined stream or a public water supply reservoir. It appears that this site no longer exists.

PEVENSEY LEVELS

Site 1. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: TQ 66594 06589 (666 066)

BSBI Grid reference: TQ 666 066. One 1988 BSBI record (Site 1 on the Pevensey Levels Map).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

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

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

Sediment Depth: 0.2m. **Sediment type:** Alluvium over Peat.

pH 6.9. **Conductivity:** 925 microsiemens

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

Flora



Site 1. Pevensey Levels at TQ 66594 06589.

Although this ditch was dominated by *Hydrocharis morsus-ranae*, *Potamogeton acutifolius* was abundant. The other species found were as follows; *Lemna trisulca* (occ), *Equisetum fluviatile* (occ) and *Lemna minor* (r). The edge was dominated by *Phragmites australis* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. Other edge species recorded were; *Alisma plantago-aquatica* (occ), *Butomus umbellatus* (occ), *Iris pseudacorus* (occ) and *Glyceria maxima* (occ).

Management. The edges had been partly cut and the ditch had probably been cleansed three years ago.

Shade. The site was partially shaded along one edge by *Phragmites australis* although the north south aspect of the ditch meant that the shade only occurred in the morning.

Agricultural use. A mixture of true grazing marsh used as grazing for cattle or sheep or as cut grass for hay or silage.

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

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

Present Grid Reference: TQ 66617 06743 and 66696 06683

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 3.0m Ditch depth: 1.2m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 6.9. Conductivity: 925 microsiemens

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

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

Present Grid Reference: NEW SITE, TQ 66715 06666 (667 067).

NEW SITE, TQ 66765 06611 (668 066).

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 3.0m Ditch depth: 1.2m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 6.9. Conductivity: 925 microsiemens

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

Site 1c. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW SITE, TQ 66690 06601 (667 066).

BSBI Grid reference: None

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 3.0m Ditch depth: 1.2m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 6.9. Conductivity: 925 microsiemens

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

Access to the field on which Site 1 was found was at 66617 06743 (see Map). This ditch was walked in error in trying to locate Site 1. The ditch at first, had a diverse flora which exactly duplicated that of Site 1, apart from the absence of *Potamogeton acutifolius*. This species was not recorded either at 66617 06743 or for the length of ditch to 66696 06683 (Site 1a). However at 66715 06666 (Site 1b), *Potamogeton acutifolius* suddenly became abundant and continued to be present along this ditch to 66765 06611 where *Schoenoplectus tabernaemontani* and *Sagittaria sagittifolia* were also recorded. Between these two reference points *Iris pseudacorus* was a frequent bankside species (Site 3). The photograph of Site 1 could be that of the ditch at 66765 06611 such as its similarity both in appearance, water quality, floral assemblage and

physical characteristics. At 66690 06601 (Site 1c), *Potamogeton acutifolius* was again abundant and the ditch flora was again diverse mirroring that of Site 1 but with the addition of *Sagittaria sagittifolia* (Site 1c). In detail the following species were recorded at the following grid references:

TQ 66617 06743 to 66696 06683. This ditch was dominated by *Hydrocharis morsus-ranae*, *Potamogeton acutifolius* was absent. The other species found were as follows; *Lemna trisulca* (occ), *Equisetum fluviatile* (occ) and *Lemna minor* (r). The edge was dominated by *Phragmites australis* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. Other edge species recorded were; *Butomus umbellatus* (occ), *Iris pseudacorus* (occ) and *Glyceria maxima* (occ).

TQ 66715 06666. This ditch was dominated by *Hydrocharis morsus-ranae*, *Potamogeton acutifolius* was abundant. The other species found were as follows; *Lemna trisulca* (occ), *Equisetum fluviatile* (occ) and *Lemna minor* (r). The edge was dominated by *Phragmites australis* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. Other edge species recorded were; *Butomus umbellatus* (occ), *Iris pseudacorus* (fr) and *Glyceria maxima* (occ).

TQ 66765 06611. This ditch was dominated by *Hydrocharis morsus-ranae*, *Potamogeton acutifolius* was abundant. The other species found were as follows; *Lemna trisulca* (occ), *Equisetum fluviatile* (occ), *Sagittaria sagittifolia* (occ) and *Lemna minor* (r). The edge was dominated by *Phragmites australis* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. Other edge species recorded were; *Butomus umbellatus* (occ), *Iris pseudacorus* (fr), *Glyceria maxima* (occ) and *Schoenoplectus tabernaemontani* (loc ab).

TQ 66690 06601. This ditch was dominated by *Hydrocharis morsus-ranae*, *Potamogeton acutifolius* was abundant. The other species found were as follows; *Lemna trisulca* (occ), *Equisetum fluviatile* (occ), *Sagittaria sagittifolia* (occ) and *Lemna minor* (r). The edge was dominated by *Phragmites australis* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. Other edge species recorded were; *Butomus umbellatus* (occ), *Iris pseudacorus* (occ) and *Glyceria maxima* (occ).

Management. The edges had been partly cut and the ditch had probably been cleansed three years ago.

Shade. Partial shade due to the slight overgrowth of some of the emergent species.

Agricultural use. A mixture of true grazing marsh used as grazing for cattle or sheep or as cut grass 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: TQ 66001 05603 (660 056)
BSBI Grid reference: TQ 660 056 Two records 1988 and 1993 (Site 2 on the Pevensey Levels Map).
Additional Records, same year: None
Duplicate Records, different years: One, 1993
1 km Square: None
10km Square: None

Ditch width: 4.0m **Ditch depth:** 1.4m
Water depth: 0.9m **Freeboard:** 0.3m
Sediment Depth: 0.2m. **Sediment type:** Alluvium over Peat.
pH 7.6. Conductivity: 850 microsiemens
Open water: 2. **Water Clarity.** 4 (Scale 1-5)

Flora.



Site 2. The Pevensey Levels at TQ 660 056.

The aquatic flora was co-dominated by *Elodea nuttallii* and *Lemna trisulca* and the algae *Mougeotia spp.* and *Spirogyra spp.* formed mats on the surface and were recorded as being locally abundant. *Hydrocharis morsus-ranae* was frequent. *Potamogeton acutifolius*, *Equisetum fluviatile* and *Lemna minor* were all recorded occasionally. The south-eastern bank was dominated by *Phragmites australis*, the north-western bank was dominated by *Juncus effusus* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. This site appeared to be receiving nutrient enriched water from an unknown source.

Management. The edges and the aquatic flora had not been cut perhaps for four years.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Used as cut grass for hay or silage.

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

Site 2a. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: NEW SITE, TQ 66042 05663 (660 057).

BSBI Grid reference: None

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: 0.9m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 7.6. Conductivity: 850 microsiemens

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

Flora.

This site was found whilst trying to locate TQ 660 056 (Site 6). The ditch fed into the ditch at TQ 6601 05603 (see Map) and was again co- dominated by *Elodea nuttallii* and *Lemna trisulca*. *Hydrocharis morsus-ranae* was frequent. *Potamogeton acutifolius*, *Equisetum fluviatile* and *Lemna minor* were all recorded occasionally. The north-eastern bank was dominated by *Phragmites australis*, the south-western bank was dominated by *Juncus effusus* but there were frequent growths of *Sparganium erectum* on both sides of the ditch. This site appeared to be receiving nutrient enriched water from an unknown source.

Management. The edges and the aquatic flora had not been cut perhaps for four years.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Used as cut grass 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: TQ 65876 05398 (659 054)

BSBI Grid reference: TQ 658 054 "Best Fit" for 1982 BSBI record.
Occurs some distance from any ditch.
(Site 3 on the Pevensey Levels Map).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 3.0m Ditch depth: 1.2m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 7.3. Conductivity: 850 microsiemens

Open water: 0.5. Water Clarity. 4 (Scale 1-5)

Flora.



Site 3. The Pevensey Levels at TQ 65876 05398

Potamogeton acutifolius, *Hydrocharis morsus-ranae* and *Lemna trisulca* were all recorded as being co-dominant. The other species found were as follows; *Oenanthe fistulosa* (*fr*) and *Lemna minor* (*r*). The edge had dominant growths of *Juncus effusus*, abundant growths of *Phragmites australis* and there were frequent growths of *Sparganium erectum* on both sides of the ditch. Two tussocks of *Carex pseudocyperus* were recorded.

Management. The edges and the aquatic flora had not been cut perhaps for six years.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Used as cut grass for hay or silage.

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

Site 4. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: TQ 65991 05313 (660 053)
BSBI Grid reference: TQ 659 053. "One Fit" for the 1982 BSBI record.
Occurs some distance from any ditch.
(Site 4 on the Pevensy Levels Map).
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: 0.9m Freeboard: 0.3m
Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.
pH 7.3. Conductivity: 800 microsiemens
Open water: 1. Water Clarity. 4 (Scale 1-5)

Flora.



Site 4. The Pevensy Levels at TQ 65991 05313

Potamogeton acutifolius, *Hydorcharis morsus-ranae* and *Lemna trisulca* were all recorded as being co-dominant. The other species found were as follows; *Nuphar lutea* (occ), *Equisetum fluviatile* (occ) *Oenanthe fistulosa* (occ) and *Lemna minor* (r). The edge had dominant growths of *Sparganium erectum* and *Juncus effusus* with frequent growths of *Juncus inflexus*.

Management. The edges and the aquatic flora had not been cut perhaps for five to six years.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Used as cut grass for hay or silage.

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

Site 4a. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: A NEW RECORD. TQ 65998 05309 (660 053)

A different ditch from Site 4.

**BSBI Grid reference: TQ 659 053. Occurs some distance from any ditch
“Another fit” for the 1982 BSBI record.
(Site 4 on the Pevensey Levels Map).**

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 6.0m Ditch depth: 1.6m

Water depth: 1.1m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 6.9. Conductivity: 800 microsiemens

Open water: 0. Water Clarity. 4 (Scale 1-5)

Flora



Site 4a. The Pevensey Levels at TQ 65998 05309

Site 4a was at a junction with a feeder drain. The photograph for Site 4a clearly shows dominant growths of *Potamogeton acutifolius* in association with frequent growths of *Potamogeton lucens* the algae *Mougetia spp.* and *Spirogyra spp.* and occasional growths of *Equisetum fluviatile* and *Hydrocharis morsus-ranae*. Just to the right outside the photograph *Potamogeton natans* was occasionally recorded. *Sparganium erectum* dominated the edge but there were frequent growths of *Phragmites australis* and *Juncus inflexus*. The water was clear.

Management. The edges and the aquatic flora had not been cut perhaps for five to six years.

Shade. Partial shade due to the overgrowth of some of the emergent species but this was very local due to the width of the ditch.

Agricultural use. Grazed by cattle.

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

Site 4b. Status of *Potamogeton acutifolius*: PRESENT

Present Grid Reference: A NEW RECORD. TQ 65948 05278 (659 053)
A NEW SITE. TQ 65890 05233 (658 052).

BSBI Grid reference: TQ 659 053. Occurs some distance from any ditch
"Another fit" for the 1982 BSBI record.
(Site 4 on the Pevensey Levels Map).

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 5.0m **Ditch depth:** 1.3m

Water depth: 0.7m **Freeboard:** 0.4m

Sediment Depth: 0.2m. **Sediment type:** Alluvium over Peat.

pH 7.5. Conductivity: 600 microsiemens

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

Flora

Site 4b is approximately 50 metres from the junction at Site 4a and is on the feeder ditch which helps drain the edge of the grazing marsh. The ditch meandered for approximately 200 metres towards the edge of the grazing marsh from the junction at Site 4a. The marsh bordered the coastal lane leading to Bexhill. The water was turbid for the last 150 metres of this drain but the sediments had mostly settled out 50 metres from the junction at Site 4b. *Potamogeton acutifolius* grew in association with frequent growths of the algae *Mougetia spp.* and *Spirogyra spp.* and occasional growths of *Equisetum fluviatile* and *Hydrocharis morsus-ranae*. *Lemna trisulca* and *Potamogeton natans* were occasionally recorded. *Sparganium erectum* dominated the edge but there were frequent growths of *Phragmites australis* and *Juncus inflexus*.

Management. The edges and the aquatic flora had been cut perhaps two years ago.

Shade. Partial shade due to the overgrowth of some of the emergent species but this was very local due to the width of the ditch.

Agricultural use. Grazed by cattle.

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

Sites 5, 5a and 5b. Status of *Potamogeton acutifolius*: ABSENT at BSBI Record but PRESENT at NEW SITE

Present Grid Reference: TQ 65938 05079 (660 051) (Site 5). ABSENT
NEW SITE. PRESENT at TQ 65953 05085 (660 051)
(Site 5a)
TQ 65949 05140 (659 051) (Site 5b) ABSENT
BSBI Grid reference: TQ 65938 05079 (659 051) ABSENT at the one 1982
BSBI record. (Site 5b on the Pevensey Levels Map).
Additional Records, same year: None
Duplicate Records, different years: None
1 km Square: None
10km Square: None

Ditch width: 5.0m **Ditch depth:** 1.3m
Water depth: 0.7m **Freeboard:** 0.4m
Sediment Depth: 0.2m. **Sediment type:** Alluvium over Peat.
pH 8.2 at Site 5, pH 7.5 (Sites 5a & 5b)
Conductivity: 450 microsiemens at Site 5, 600 microsiemens at Sites 5a & 5b.
Open water: 2. (Site 5), 3 (Sites 5a & 5b)
Water Clarity: 3 at Site 5: 1, Turbid, at Sites 5a & 5b (Scale 1-5)

Flora.



Site 5a. The Pevensey Levels at TQ 65953 05085.

The aquatic flora at Site 5 (TQ 65938 05079) was dominated by *Hydrocharis morsus-ranae* but *Lemna trisulca* and *Elodea nuttallii* were abundant. *Sagittaria sagittifolia* was recorded occasionally. *Oenanthe fistulosa* was frequently recorded growing at the water's edge where *Sparganium erectum* dominated but there were frequent growths of *Phragmites australis*, *Juncus effusus* and *Juncus inflexus*. Although *Potamogeton acutifolius* was absent at Site 5 it was recorded in the same ditch at TQ 65953 05085 (Site 5a) some 15 metres "downstream". *Potamogeton acutifolius* is clearly visible in the photograph, which has frequent to abundant growths alongside similar growths of *Hydrocharis morsus-ranae*. The photograph also shows the occasional growths of *Potamogeton natans*. *Sparganium erectum* dominated the edge

but there were frequent growths of *Phragmites australis*, *Juncus effusus* and *Juncus inflexus*. At TQ 65949 05140 (Site 5b) *Potamogeton acutifolius* could not be found which was some 8 metres lower down from TQ 65953 05085 where it was first recorded. The aquatic flora had the same species composition at Site 5b to that recorded at Site 5 and had reached the same densities. The water is clearly turbid and iron rich. This occurred for all sites on this ditch right up to Site 4b at TQ 65948 05278. The turbidity was observed for approximately 200 metres “downstream” of Site 5a to Site 4b and one explanation for the turbidity was that the recent cleansing had cut through an iron rich layer. **At Site 5, which cut through higher ground, the water was clear, the pH had risen to 8.2 and the conductivity had dropped to 450 microsiemens.** The lower conductivity probably resulted from the ditch being entirely on alluvium or some distance from slightly brackish water or both factors might apply.

Management. The edges and the aquatic flora had been cut perhaps two years previously.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Grazed by cattle.

Reasons for presence. Correct point in the management cycle but with a marginal water quality.

Site 6. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 67437 05744 (674 057) to TQ 67423 05800 (674 058)

**BSBI Grid reference: TQ 674 058 best fit for the 1982 BSBI record
(Site 6 on the Pevensy Levels Map).**

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 4.0m Ditch depth: 1.6m

Water depth: 0.8m Freeboard: 0.6m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 7.6. Conductivity: 600 microsiemens

Open water: 0. Water Clarity. 4 (Scale 1-5)

Flora.



Site 6. The Pevensy Levels at TQ 67437 05744.

Hydrocharis morsus-ranae and *Lemna trisulca* and *Elodea nuttallii* were all co-dominant. *Wolffia arrhiza* was abundant and *Equisetum fluviatile* was occasionally found. The inner edge to the ditch had abundant growths of *Apium nodiflorum*, *Oenanthe fistulosa* and *Myosotis scorpioides* and the occasional growths of *Alisma plantago-aquatica*. The edge was dominated by *Sparganium erectum* and abundant growths of *Juncus effusus*. *Potamogeton acutifolius* was not found. There appeared to be no chemical or physical reason why *Potamogeton acutifolius* should not have been found. The ditch is too overgrown.

Management. The edges and the aquatic flora had been cut perhaps five years previously.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Grass cut for hay or silage.

Reasons for absence. Incorrect point in the management cycle.

Site 7. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 65555 05595 (656 056)

BSBI Grid reference: TQ 656 056 "Best fit" for the 1985, 1988 and 1993 BSBI records (Site 8 on the Pevensy Levels Map).

Additional Records, same year: None

Duplicate Records, different years: Two, 1988 and 1993

1 km Square: None

10km Square: None

Ditch width: 4.0m Ditch depth: 1.5m

Water depth: 0.6m Freeboard: 0.7m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 7.8. Conductivity: 400 microsiemens

Open water: 0.5. Water Clarity. 3 (Scale 1-5)

Flora



Site 7. The Pevensy Levels at TQ 66555 05595, the field ditch

Site 7 was found to the north across the main Eastbourne road. The site was best placed at the junction of a field ditch and the drain edging the main road. Both the field ditch and the roadside drain were searched thoroughly and no *Potamogeton acutifolius* was found. The field ditch contained co-dominant growths of *Hydrocharis morsus-ranae* and *Lemna trisulca*. *Wolffia arhiza* was abundant to frequent and *Lemna minor* was occasionally found. The inner edge to the ditch had occasional growths of *Oenanthe fistulosa*, *Myosotis scorpioides* and *Alisma plantago-aquatica*. The near side edge had occasional growths of *Sparganium erectum* and *Juncus effusus* with *Juncus conglomeratus* found rarely. The far side edge was dominated by *Phragmites australis*. The roadside drain was locally dominated by *Hydrocharis morsus-ranae* and *Lemna trisulca* was occasionally to abundantly found. Where there was some open water much of it had floating locally abundant growths of *Callitriche stagnalis*. Approximately 10% of the drain was open water. The near side inner edge had occasional growths of *Apium nodiflorum* and *Alisma plantago-aquatica*. *Juncus effusus* was frequently recorded and *Juncus inflexus* had occasional growths on the outer edge to the drain. The far side roadside edge was dominated by *Phragmites australis* and the whole ditch was shaded a dense line of mature *Salix fragilis*. The only light reaching the field ditch was when the sun was setting (see Colour Cast on Photograph of Site 8) but the low angle of the sun prevented light from fully entering the roadside drain.

Management. The edges and the aquatic flora had not been managed for perhaps eight years.

Shade. Shade due to the overgrowth of trees and some of the emergent species.

Agricultural use. Grazing marsh, grass cut for hay or silage and grazed by cattle.

Reasons for absence. Water levels too low and a lack of management.

Site 8. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 65810 05731 (658 057)

**BSBI Grid reference: TQ 658 058 "Best fit" for the 1991 BSBI record
(Site 9 on the Pevensey Levels Map).**

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 4.0m Ditch depth: 1.5m

Water depth: 0.6m Freeboard: 0.7m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 7.8. Conductivity: 400 microsiemens

Open water: 1.0. Water Clarity. 3 (Scale 1-5)

Flora.



Site 8. The Pevensey Levels at TQ 65810 05731

Site 8 was really an extension of the roadside drain recorded at Site 7 and the flora was much the same except that here it was locally dominated by *Stratiotes aloides*. *Hydrocharis morsus-ranae* was abundant or dominant where the former species was absent and *Lemna trisulca* was occasionally to abundantly found but only where *Stratiotes aloides* was not recorded. Floating mats of *Callitriche stagnalis* were occasionally found as were growths of *Lemna minor*. Approximately 25% of the drain contained open water. The near side inner edge had occasional growths of *Apium nodiflorum*, *Myosotis scorpioides* and *Alisma plantago-aquatica*. *Juncus effusus* was frequently recorded and *Juncus inflexus* had occasional growths on the outer edge to the drain. The far side roadside edge to the drain was dominated by *Phragmites australis* and the whole ditch was shaded by a dense line of mature *Salix fragilis*. The site was fully shaded.

Management. The edges and the aquatic flora had not been managed for perhaps eight years.

Shade. Shade due to the overgrowth of trees and some of the emergent species.

Reasons for absence. Water levels too low, shading and a lack of management.

Site 9. Status of *Potamogeton acutifolius*: ABSENT

Present Grid Reference: TQ 63729 06810 (637 068)

**BSBI Grid reference: TQ 637 068. One 1991 BSBI record
(Site 10 on the Pevensey Levels Map).**

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: Three 1981 records for the square TQ 63- 06-.

10km Square: None

Ditch width: 7.0m Ditch depth: 1.7m

Water depth: 1.2m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvium over Peat.

pH 6.6. Conductivity: 800 microsiemens

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

Flora.



Site 9. The Pevensey Levels near Rickney at TQ 63729 06810

The aquatic flora at this site was dominated by *Lemna minor* but it also contained abundant growths of the highly invasive alien species *Hydrocotyle ranunculoides*. *Hydrocharis morsus-ranae* was found occasionally. The edge was dominated on the near side by *Sparganium erectum* and frequent growths of *Typha latifolia* and on the far side by *Juncus effusus*.

Management. The edges and the aquatic flora had not been managed for perhaps six years.

Shade. Shade due to the overgrowth of *Lemna minor* and some of the emergent species.

Agricultural use. Grazing marsh, grass cut for hay or silage and grazed by cattle.

Reasons for absence. Nutrient enrichment, lack of management and competition factors from *Lemna minor* and *Hydrocotyle ranunculoides*.

Square A. Status of *Potamogeton acutifolius*: ABSENT.

The square 63- 05-. One 1993 BSBI records (Square A on the Pevensey Levels Map).

Ditch width: 4.0m
Ditch depth: 1.4m
Water depth: 0.9m
Freeboard: 0.3m
Sediment Depth: 0.2m
Sediment type: Alluvium.

pH 7.6

Conductivity 600 microsiemens

Open water: 2

Water Clarity. 2 (Scale 1-5)

Despite a randomised search in this square *Potamogeton acutifolius* was not recorded.

Reasons for absence. Water levels too low, and a lack of management.

Square B. Status of *Potamogeton acutifolius*: PRESENT.

The square 66- 05-. Two 1985 BSBI records (Site 2 / Square B on the Pevensey Levels Map).

Ditch width: 4.0m
Ditch depth: 1.4m
Water depth: 0.9m
Freeboard: 0.3m
Sediment Depth: 0.2m
Sediment type: Alluvium over peat.

pH 7.6

Conductivity 850 microsiemens

Open water: 2

Water Clarity. 2 (Scale 1-5)

This square was covered by the records for Site 2 and 2a.

Reasons for presence. Water levels, water quality, and the management cycle.

Square C. Status of *Potamogeton acutifolius*: ABSENT.

The square 64- 06-. A 1994 BSBI record. (Square C on the Pevensey Levels Map).

Ditch width: 3 .0m to 4.0m to 5.0m
Ditch depth: 1.0m to 1.5m
Water depth: 0.6m to 1.0m
Freeboard: 0.4m to 0.7m
Sediment Depth: 0.2 to 0.4m
Sediment type: Variable, alluvium and alluvium over peat.

pH 6.9 to 7.8

Conductivity 400 to 925 microsiemens

Open water: Variable

Water Clarity. Variable (Scale 1-5)

Despite a randomised search in this square *Potamogeton acutifolius* was not recorded.

Reasons for absence. Water levels too low, and a lack of management.

Square D. Status of *Potamogeton acutifolius*: ABSENT.

The square 65- 06-. A 1994 BSBI record, known as Old haven (Square D on the Pevensey Levels Map).

Ditch width: 3 .0m to 4.0m to 5.0m

Ditch depth: 1.0m to 1.5m

Water depth: 0.6m to 1.0m

Freeboard: 0.4m to 0.7m

Sediment Depth: 0.2 to 0.4m

Sediment type: Variable, alluvium and alluvium over peat.

pH 6.9 to 7.8

Conductivity 400 to 925 microsiemens

Open water: Variable

Water Clarity. Variable (Scale 1-5)

Despite a randomised search in this square *Potamogeton acutifolius* was not recorded.

Reasons for absence. Water levels too low, and a lack of management.

Square E. Status of *Potamogeton acutifolius*: PRESENT.

The square 66- 06-. Two 1981 and one 1995 BSBI record (Square E on the Pevensey Levels Map).

Ditch width: 3 .0m to 4.0m

Ditch depth: 1.0m to 1.5m.

Water depth: 0.6m to 1.0m

Freeboard: 0.2m to 0.7m

Sediment Depth: 0.2 to 0.4m

Sediment type: Variable, alluvium and alluvium over peat.

pH 7.8 to 8.4

Conductivity 400 to 600 microsiemens

Open water: Variable

Water Clarity. Variable (Scale 1-5)

Sites 1, 1a, 1b and 1c were found in this square and these were situated on the south side of the main Eastbourne road. Despite a randomised search, *Potamogeton acutifolius* was not recorded in the sector of the square to the north of the main Eastbourne road.

Reasons for absence. Water levels too low, and a lack of management.

Square F. Status of *Potamogeton acutifolius*: ABSENT.

The square 68- 06-. A 1999 BSBI record. (Square F on the Pevensey Levels Map).

Ditch width: 3 .0m to 4.0m to 7.0m

Ditch depth: 1.0m to 1.5m to 2.7m

Water depth: 0m to 0.6m to 1.0m

Freeboard: 0.7m to 1.5m

Sediment Depth: 0.2 to 0.4m

Sediment type: Variable, alluvium and alluvium over peat.

pH 6.9 to 7.8

Conductivity 400 to 925 microsiemens

Open water: Variable

Water Clarity. Variable (Scale 1-5)

Despite a randomised search in this square *Potamogeton acutifolius* was not recorded.

Reasons for absence. Water levels too low, and a lack of management.

Square F. Status of *Potamogeton acutifolius*: ABSENT

TQ 686 062 one possible site for the 1999 BSBI record for the square TQ 68- 06- (Square F on the Pevensey Levels Map).

Ditch width: 7.0m

Ditch depth: 2.7m

Water depth: 1.0m

Freeboard: 1.5m

Sediment Depth: 0.2m

Sediment type: Alluvium.

pH 7.8

Conductivity 400 microsiemens

Open water: 4

Water Clarity. 3 (Scale 1-5)

Flora



Square F. The Hooe Levels at TQ 686 062, Waller's Haven.

Square F was on the edge of the Hooe Levels and these levels drained much higher ground into a large receiving drain called Waller's Haven which bordered the eastern edge of the Pevensey Levels. The Hooe Levels could only be called grazing marsh around the extreme western edges. The field ditches found on the high ground at Hooe Levels were either dry or had lowered water levels. Waller's Haven is therefore the probable drain on which the 1999 record for the square TQ 68- 06- was situated. The main drain for the Hooe Levels is clearly "main river" because of the gauging board and sluices by the bridge. The "river" was too over-managed to be a suitable site for *Potamogeton acutifolius*. The aquatic flora found was as follows; *Hydrocharis morsus-ranae* (occ), *Lemna trisulca* (occ) and *Elodea nuttallii*(occ). *Sparganium erectum* dominated the nearside edge along with occasional growths of *Juncus effusus* and *Juncus inflexus*. On the far side of the channel *Phragmites australis* was dominant.

Management. The edges and the aquatic flora had been managed perhaps last year.

Shade. Partial shade due to the overgrowth of some of the emergent species.

Agricultural use. Grass cut for hay or silage and grazed by cattle.

Reasons for absence. Too aggressively managed?

Square G. Status of *Potamogeton acutifolius*: ABSENT. The square 63- 07-. One 1993 BSBI records. (Square G on the Pevensy Levels Map).

Ditch width: 3 .0m to 4.0m to 7.0m

Ditch depth: 1.0m to 1.5m to 2.7m

Water depth: 0m to 0.6m to 1.0m

Freeboard: 0.7m to 1.5m

Sediment Depth: 0.2 to 0.4m

Sediment type: Variable, alluvium and alluvium over peat.

pH 6.9 to 7.8

Conductivity 400 to 925 microsiemens

Open water: Variable

Water Clarity. Variable (Scale 1-5)

Despite a randomised search in this square *Potamogeton acutifolius* was not recorded.

Reasons for absence. Water levels too low, and a lack of management.

Square H. Status of *Potamogeton acutifolius*: ABSENT.

The square 64- 07-. A 1999 BSBI record. (Square H on the Pevensy Levels Map).

Ditch width: 3 .0m to 4.0m to 5.0m

Ditch depth: 1.0m to 1.5m

Water depth: 0.6m to 1.0m

Freeboard: 0.4m to 0.7m

Sediment Depth: 0.2 to 0.4m

Sediment type: Variable, alluvium and alluvium over peat.

pH 6.9 to 7.8

Conductivity 400 to 925 microsiemens

Open water: Variable

Water Clarity. Variable (Scale 1-5)

Despite a randomised search in this square *Potamogeton acutifolius* was not recorded but the ditches had been recently managed and some of the sites looked as if they could contain *Potamogeton acutifolius* in the coming years.

Reasons for absence. Recently cleansed ditches.

In all of the above squares where *Potamogeton acutifolius* was not recorded only one square seemed, at present, to have both an appropriate water quality and more importantly recent management such that the ditches were not overgrown by emergent species or species such as *Lemna minor*. This was square G, TQ 64- 07-. This is not to say that this or any of the squares might not contain *Potamogeton acutifolius* since the Pevensy Levels is a large area with a large number of ditches.

There was one 1981 and one 1989 record given as TQ 6-- 0--. This vague grid reference covered all of the records found in the present survey and as such was deemed to have been covered. However the 1989 record for the square TQ 6-- 1--, and named as Pevensy was right on the outer limits of the Pevensy Levels in areas, such as the Whelpey Level and the record could have been anywhere in this huge area of search. The record was dismissed as being too vague.

Berwick Marshes at TQ 5-- 0--. One further record had to be searched for since the site was named as the marshes near Berwick. Thus despite the one figure grid reference of TQ 5-- 0-- for this 1990 BSBI record, the area could be readily identified on the OS map. However a fisheries lake had been constructed on one of the possible sites and a water supply reservoir had been constructed on the other likely area. All that could be found were heavily shaded deeply incised streams and they were totally unsuitable as a habitat for *Potamogeton acutifolius*. It has to be assumed that the reservoir flooded the marshes or that the fisheries lake had destroyed and flooded the other likely area. In both cases it must be assumed that the plant has been lost