

CHAPTER 5. KENT.

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.

Kent has lost all the previously recorded sites for *Potamogeton acutifolius* giving a loss of 100%. However, one new site was found close to one of the BSBI sites potentially giving an overall loss of 83%.

In detail, there was one BSBI site at Stodmarsh, one site close-by at Preston in the Newnham Valley, one site at the Dowels, Romney Marsh, two sites on the Rother Levels, one on the River Rother. The BSBI locations for all of the six Kent sites were readily found but the present day survey could not find *Potamogeton acutifolius* in any of these sites. The site at Stodmarsh NNR whilst diverse was probably at the wrong point in the management cycle being overgrown by *Hydrocharis morsus-ranae*, *Ceratophyllum demersum* and *Elodea nuttallii*. The site at Newnham Valley was dominated by *Sparganium erectum* but *Potamogeton acutifolius* could return if the site was managed. The Dowels on Romney Marsh should have contained *Potamogeton acutifolius* as there were several diverse ditch lengths, seemingly appropriately managed and having an appropriate water quality. The ditches on the Rother Levels and the site on the River Rother were no longer suitable habitats for the continued survival of *Potamogeton acutifolius*.

Only one new site was found for *Potamogeton acutifolius*. This was in a diverse ditch on farmland close to the Stodmarsh NNR.

STODMARSH

There were two possibilities for the BSBI site at TR 230 620 one to the left and the other to the right of a drove at the entrance to the English Nature NNR at Stodmarsh.

The first site was totally overgrown by *Sparganium erectum* with occasional to rare growths of *Berula erecta* and *Mentha aquatica*. The second site to the right although overgrown with *Hydrocharis morsus-ranae* did become more open at the end the survey section.

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

Present Grid Reference: TR 23038 62049 to TR 23079 62107 (230 620 to 231 621)

BSBI Grid reference: TR 230 620. Three 1974 BSBI records.

Additional Records, same year: Two

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 4.0m **Ditch depth:** 1.5m

Water depth: 0.7m **Freeboard:** 0.6m

Sediment Depth: 0.2m. **Sediment type:** Alluvial mud.

pH 7.4. **Conductivity:** 650 microsiemens

Open water: 0 to 1. **Water Clarity:** 3 (Scale 1-5)

Flora.



Site 1. Stodmarsh NNR at TR 23038 62049.

The ditch was dominated as above in the photograph by *Hydrocharis morsus-ranae* with a surprisingly diverse understory of aquatic plants containing *Ceratophyllum demersum* and *Elodea nuttallii*. With a cover estimate for *Hydrocharis morsus-ranae* of approximately 90% the flora became even more diverse with frequent growths of *Potamogeton trichoides*, *Elodea canadensis*, *Eodea nuttallii*, *Ceratophyllum demersum* and occasional growths of *Lemna trisulca* and *Lemna minor*. The edge was dominated on one side by *Phragmites australis* but on the south eastern side by

rank grasses containing *Bidens cernua* and some *Juncus inflexus* and *Polygonum hydropiper*. At the water's edge grew frequent growths of *Berula erecta*, *Mentha aquatica* and *Persicaria amphibia*.

The ditch was surveyed for 100metres and *Potamogeton acutifolius* was not recorded.

Management. Not managed for possibly seven years

Shade. The orientation of the ditch meant that it was only partially shaded by the overgrowth of *Phragmites australis* on the north-eastern side.

Agricultural use. The ditch and a public footpath formed a boundary between the NNR which had large stands of managed beds of *Phragmites australis* and the grazing marsh.

Reasons for absence. The physical and chemical conditions and associated flora for this ditch suggested that it was only the lack of management that prevented the return of *Potamogeton acutifolius*.

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

**Present Grid Reference: NEW SITE. TR 23104 61958 (231 620).
(100m S.W. of Site 1).**

BSBI Grid reference: None
Additional Records, same year: None
Duplicate Records, different years: None
1 km Square: None
10km Square: None

Ditch width: 5.0m Ditch depth: 1.2m
Water depth: 0.7m Freeboard: 0.3m
Sediment Depth: 0.2m. Sediment type: Alluvial mud.
pH 7.5. Conductivity: 700 microsiemens
Open water: 3. Water Clarity: 4 (Scale 1-5)

Flora.



Site 2. A ditch at TR 23104 61958, containing *Potamogeton acutifolius* just before reaching the boundary with the Stodmarsh NNR.

Potamogeton acutifolius was found occasionally at the above site in association with frequent growths of *Ceratophyllum demersum*, *Hydrocharis morsus-ranae*, *Lemna*

minor, *Potamogeton pusillus* and *Utricularia vulgaris*. There were also occasional growths of *Callitriche stagnalis*, *Elodea nuttallii*, *Lemna trisulca* and *Ranunculus peltatus*. At the diverse edge grew the occasional *Alisma plantago-aquatica*, *Sparganium erectum*, *Rorippa amphibia*, *Myosotis scorpioides* and *Rumex hydrolapathum*.

Management. The ditch had been managed perhaps two years ago

Shade. The ditch was so wide that it was only partially shaded by the overgrowth of emergent species.

Agricultural use. The marsh was grazed by cattle.

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

PRESTON, NEWNHAM VALLEY

Site 3. Status of *Potamogeton acutifolius*: ABSENT.

Present Grid Reference: TR 23139 60200 (231 602).

BSBI Grid reference: TR 231 602. One 1983 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: 1.2m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvial mud.

pH 7.3. Conductivity: 600 microsiemens

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

Flora.



Site3. Newnham Valley at TR 23139 60200.

In 1983 this trout stream known as the Little Stour would have been an ideal site for *Potamogeton acutifolius* but in the present survey it was overgrown and neglected. In places the conditions seemed so ideal that it was searched for well outside the 50 metre boundary for the original site. At the original site *Sparganium erectum* was

dominant growing into the channel and there was an outer dominant *Phragmites australis* edge. The water was dominated by a 99% cover of *Potamogeton natans* with the occasional growth of *Lemna minor*. Surprisingly, notwithstanding this blanket cover, *Ceratophyllum demersum* was found beneath *Potamogeton natans*. A length of stream was searched between the grid references TR 23118 60136 to TR 23124 60171 since this was a more open section. Here *Sparganium erectum* was again dominant growing into the channel and there was an outer dominant *Phragmites australis* edge. The water was dominated by a 60% cover of *Potamogeton natans*, a 30% cover of *Sparganium erectum* with the occasional growth of *Lemna minor*, *Lemna trisulca* and *Ceratophyllum demersum*.

Management. The stream was neglected and had not been managed for 10 to 15 years.

Shade. Emergent species shaded the site.

Agricultural use. The valley was grazed by cattle and sheep although the lawn of the nearby renovated farmhouse edged part of the search area.

Reasons for absence. A lack of management.

Site 4. At TR 23179 60344. An Additional Site

Status of *Potamogeton acutifolius*: ABSENT

Ditch width: 6.0m

Ditch depth: 1.2m

Water depth: 0.75m

Freeboard: 0.3m

Sediment Depth: 0.15m

Sediment type: Alluvial mud

pH 7.3

Conductivity 600 microsiemens

Open water: 4

Water Clarity. 5 (Scale 1-5)

Just beyond the footbridge at TR 23179 60344 the stream was widening out to become a small but overgrown river. Around the footbridge, an anglers swim had been cleared and here *Potamogeton natans* was decaying with *Sagittaria sagittifolia*, *Sparganium emersum*, *Elodea nuttallii*, *Elodea canadensis* and *Ceratophyllum demersum* all occasionally found with no one species becoming dominant. The total cover for all these species was around 30% and the water was very clear to a maximum depth of 75 cms. The edge was dominated by *Phragmites australis* but where the stream widened out to become a small river it was edged by *Glyceria maxima*.

Management. The stream was locally cleared of plants to provide a swim for trout fishing.

Shade. Emergent species had been cleared and only partially shaded the site.

Agricultural use. The valley was grazed by cattle and sheep.

Reasons for absence. No propagules?

**ROMNEY MARSH
THE DOWELS**

Site 5. Status of *Potamogeton acutifolius*: ABSENT.

Present Grid Reference: TQ 97818 31202 (978 312).

BSBI Grid reference: TQ 978 312. One 1982 BSBI record.

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 5.0m Ditch depth: 1.5m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvial mud.

pH 7.0. Conductivity: 600 microsiemens

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

Flora.



Site 5. The Dowels at TQ 97818 31202.

This site was very diverse but despite an intensive search for more than 200 metres *Potamogeton acutifolius* could not be found. The water level had been artificially raised by 0.5 metres despite the hot dry summer and the threat of water shortages. As such *Hydrocharis morsus-ranae* was trapped 0.5 metres below the surface caught up in the tangle of *Myriophyllum verticillatum* and *Elodea nuttallii*. *Potamogeton obtusifolius* was locally dominant, *Wolffia arhiza* (l. ab), *Hydrocharis morsus-ranae* (ab), *Lemna trisulca* (ab), *Myriophyllum verticillatum* (fr), *Elodea nuttallii*(fr), *Lemna minor*(fr), *Hottonia palustris* (occ) and *Elodea canadensis* (occ). The edge was equally diverse containing *Juncus effusus* (dom), *Juncus inflexus* (ab), *Sparganium erectum* (ab), *Juncus conglomeratus* (fr), *Alisma plantago-aquatica* (occ), *Glyceria maxima* (occ), *Iris pseudacorus* (occ), *Lythrum salicaria* (occ), *Lycopus europaeus* (occ), *Rumex conglomeratus* (occ), *Rumex hydrolapathum* (occ), *Typha latifolia* (r) and *Typha angustifolia* (r).

Management. The ditch vegetation had been managed perhaps three years ago and the water level had been raised in the last few weeks by 0.5 m.

Shade. Emergent species had been cleared and only partially shaded the site. Some hedgerow bushes locally shaded the end of the 50m survey section

Agricultural use. The marsh was grazed by cattle and sheep.

Reasons for absence. No propagules?

THE ROTHER LEVELS

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

Present Grid Reference: TQ 89060 29638 to 89102 29650 to 89110 29650
(891 296 to 891 297)

BSBI Grid reference: TQ 891 296. Four 1982 BSBI records.

Additional Records, same year: Three

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 5.0m Ditch depth: 1.5m

Water depth: 0.7m Freeboard: 0.3m

Sediment Depth: 0.2m. Sediment type: Alluvial mud.

pH 8.3. Conductivity: 550 microsiemens

Open water: 4. Water Clarity. 3 but iron ochre stained (Scale 1-5).

Flora.



Site 6. The Rother Levels at TQ 89060 29638, near Small Hythe Bridge. Four 1982 records were found along the length of this ditch.

The four 1982 records for this site became clear on first visiting it. These records were most probably found along the length of this ditch, the four grid references representing different points along it. Despite a thorough search *Potamogeton acutifolius* was not found. The ditch contained frequent growths of *Hydrocharis morsus-ranae*, *Myriophyllum spicatum*, *Nymphaea alba*, *Spirodela polyrhiza*, and *Utricularia vulgaris*. Only occasional growths of the following species were recorded; *Elodea nuttallii*, *Lemna minor*, *Ceratophyllum demersum* and the algae *Mougeotia spp.* and *Spirogyra spp.* Despite the apparent diversity the cover estimate for all these species was only 25%. Both edges were dominated by *Phragmites australis*

Management. The ditch vegetation had not been managed for perhaps two years.

Shade. *Phragmites australis* shaded the ditch.

Agricultural use. The marsh to the right was grazed by cattle and sheep.

Reasons for absence. Shading and water quality?

Site 7. Status of *Potamogeton acutifolius*: ABSENT.

**Present Grid Reference: TQ 89378 29730 to 89403 29743 to 89347 29726
(894 297 to 893 297)**

BSBI Grid reference: TQ 894 298. One 199 BSBI record.

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

Ditch width: 5.0 to 8.0m Ditch depth: 1.6m

Water depth: 1.0m Freeboard: 0.4 to 0.9m

Sediment Depth: 0.2m. Sediment type: Alluvial mud.

pH 8.7 Conductivity: 550 microsiemens

Open water: 4. Water Clarity. 3 but iron ochre stained (Scale 1-5)

Flora.



Site 7. The Rother Levels at TQ 89378 29730, looking back along the same drain shown in the previous photograph, to the right, just out of this photograph, is Small Hythe bridge.

The following species were recorded; *Nuphar lutea* (ab), *Utricularia vulgaris* (ab), *Mougeotia* spp.(ab), *Spirogyra* spp.(ab), *Nymphaea alba* (fr), *Sagittaria sagittifolia* (fr), *Spirodela polyrhiza* (fr), *Ceratophyllum demersum* (occ), *Hydrocharis morsus-ranae* (occ)and *Lemna minor* (occ). The edge was 75% dominated by *Phragmites australis* and for the remainder *Glyceria maxima* was recorded. At TQ 89347 29726 the flora had changed composition slightly. Again *Nuphar lutea* (ab), *Utricularia vulgaris* (ab), *Mougeotia* spp.(fr), *Spirogyra* spp.(fr), *Spirodela polyrhiza* (fr) *Hydrocharis morsus-ranae* (occ) and *Lemna minor* (occ) were recorded but some with slightly different frequencies. *Nymphaea alba* (fr), *Sagittaria sagittifolia* (fr) and *Ceratophyllum demersum* (occ) were not recorded but the following new species were recorded namely; *Myriophyllum verticillatum* (fr) and *Elodea nuttallii* (occ). The edge was very similar except that *Mentha aquatica* was recorded occasionally.

Management. The ditch vegetation had been managed for perhaps two years.

Shade. *Phragmites australis* partially shaded the ditch.

Agricultural use. The marsh to the left was grazed by cattle and sheep.

Reasons for absence. Shading and water quality?

THE RIVER ROTHER

Site 8. Status of *Potamogeton acutifolius*: ABSENT.

Present Grid Reference: TQ 80065 25706 to 801003 25697 to 80130 25695
(801 257 to 801 257)

BSBI Grid reference: TQ 801 257. One 1970 BSBI record.

Additional Records, same year: None

Duplicate Records, different years: None

1 km Square: None

10km Square: None

River width: 15.0m River depth: 6.0m including flood banks

Water depth: 1.2m Freeboard: 2.8m

Sediment Depth: ? Sediment type: Alluvial mud.

pH 7.5. Conductivity: 450 microsiemens

Open water: 2. Water Clarity. 2 turbid Secchi disc 0.5m.

Flora.



Site 8. The River Rother at TQ 80065 25706, looking west towards Bodiam, the village of Ewhurst Green is 1km away to the south.

This species was recorded here in 1970, 33 years ago and probably before any major flood defence scheme, so evident in this photograph, had been constructed. Today the aquatic flora is representative of a clay river and the site seemed to be an alien habitat for *Potamogeton acutifolius*. It was not found. A 75 metre length of river was surveyed and the following species were recorded; *Persicaria amphibia* (fr), *Potamogeton pectinatus* (fr), *Equisetum fluviatile* (occ), *Lemna minor* (occ), *Nuphar lutea* (occ), *Potamogeton lucens* (occ), *Potamogeton perfoliatus* (occ), *Sparganium emersum* (occ), *Zanichellia palustris* (occ) and the algae *Cladophora glomerata* (occ), *Vaucheria sessilis* (occ), *Mougeotia* spp. (occ), *Spirogyra* spp. (occ), *Zygnema* spp. (occ). The edge species were recorded as follows; *Phalaris arundinacea* (dom), *Sparganium erectum* (occ), *Calystegia sepium* (fr), *Rumex conglomeratus* (fr), *Urtica dioica* (ab) and *Lythrum salicaria* (r).

Management. The river vegetation was partly impacted by the passage of pleasure craft but it would be managed in any event by the Environment Agency.

Shade. The riverine vegetation offered no shade.

Agricultural use. The land either side of the flood bank was mainly grazed by cattle and sheep although some land was under cereals.

Reasons for absence. An unsuitable site possibly too deep and too well managed?