

FIVE YEAR SUMMARY CORE COUNTS FOR CHICHESTER HARBOUR (WEST) - MID HAYLING COUNT SECTOR

Total Counts - All Species Combined

Peak monthly total = maximum of the sum of the counts of all species within each month.

Seasonal peaks = sum of the maximum counts of all species within each season.

Year	Peak Total	Monthly Peak	Autumn Peak	Winter Peak	Spring Peak
04/05	4172	(JAN)	3592	5578	482
05/06	3134	(DEC)	2777	5238	198
06/07	4060	(DEC)	2979	5421	429
07/08	6022	(FEB)	2364	7387	645
08/09	8441	(NOV)	3657	9268	948
MEAN			3074	6578	540

Five-year winter peak counts, and month in which this was recorded, of each species

Where a count is enclosed by parentheses this indicates that it was considered incomplete, i.e. those parts of the site not visited typically holds at least 25% of the species in question. Incomplete counts are excluded from calculation where, if included, they would depress the mean. When all counts are considered to be incomplete the maximum replaces the mean.

Species	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	Mean Peak
Mute Swan	0	1 (MAR)	0	2 (MAR)	1 (FEB)	1
Canada Goose	2 (MAR)	27 (DEC)	5 (DEC)	2 (DEC)	4 (MAR)	8
Dark-bellied Brent Goose	1275 (JAN)	770 (FEB)	1434 (DEC)	(1500) (FEB)	1500 (NOV)	1296
Black Brant	0	0	0	(0)	1 (DEC)	0
Shelduck	88 (JAN)	45 (DEC)	51 (MAR)	66 (MAR)	100 (FEB)	70
Wigeon	22 (JAN)	63 (NOV)	58 (DEC)	40 (JAN)	64 (JAN)	49
Gadwall	0	0	0	0	3 (JAN)	1
Teal	75 (MAR)	76 (DEC)	127 (FEB)	100 (JAN)	135 (JAN)	103
Mallard	10 (MAR)	35 (DEC)	3 (NOV)	(2) (FEB)	7 (DEC)	14
Pintail	0	4 (DEC)	2 (DEC)	(1) (FEB)	0	2
Shoveler	1 (JAN)	0	0	2 (MAR)	4 (JAN)	1
Eider	2 (MAR)	0	0	0	0	0
Long-tailed Duck	0	0	0	0	2 (FEB)	0
Goldeneye	2 (NOV)	0	0	1 (JAN)	0	1
Red-breasted Merganser	28 (FEB)	67 (MAR)	26 (FEB)	24 (JAN)	30 (NOV)	35
Little Grebe	3 (NOV)	3 (NOV)	6 (NOV)	2 (DEC)	12 (FEB)	5
Great Crested Grebe	0	1 (NOV)	4 (FEB)	1 (DEC)	1 (NOV)	1
Slavonian Grebe	0	0	1 (JAN)	0	0	0
Cormorant	2 (NOV)	3 (FEB)	2 (JAN)	3 (DEC)	0	2
Little Egret	7 (NOV)	33 (NOV)	24 (NOV)	8 (MAR)	13 (NOV)	17
Grey Heron	1 (DEC)	1 (DEC)	0	3 (JAN)	4 (NOV)	2
Oystercatcher	28 (MAR)	43 (MAR)	73 (FEB)	110 (JAN)	120 (DEC)	75

Species	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	Mean Peak
Ringed Plover	1 (JAN)	0	0	(0)	0	0
Golden Plover	220 (DEC)	465 (JAN)	300 (FEB)	(600) (NOV)	250 (FEB)	367
Grey Plover	500 (MAR)	810 (NOV)	680 (NOV)	(700) (NOV)	400 (NOV)	618
Lapwing	616 (JAN)	375 (DEC)	420 (JAN)	255 (JAN)	270 (FEB)	387
Knot	310 (MAR)	51 (NOV)	10 (JAN)	(2000) (FEB)	400 (NOV)	554
Dunlin	1200 (DEC)	650 (DEC)	870 (NOV)	1000 (MAR)	5000 (NOV)	1744
Snipe	1 (DEC)	1 (JAN)	0	5 (JAN)	4 (JAN)	2
Black-tailed Godwit	15 (MAR)	222 (NOV)	24 (DEC)	(40) (NOV)	11 (JAN)	68
Bar-tailed Godwit	420 (NOV)	600 (DEC)	370 (NOV)	(360) (NOV)	300 (FEB)	423
Whimbrel	1 (NOV)	1 (DEC)	0	(0)	0	1
Curlew	443 (JAN)	583 (MAR)	545 (FEB)	(440) (NOV)	400 (NOV)	493
Greenshank	0	0	0	(0)	1 (JAN)	0
Redshank	70 (DEC)	219 (NOV)	145 (DEC)	100 (MAR)	110 (JAN)	129
Turnstone	22 (MAR)	10 (FEB)	30 (MAR)	20 (JAN)	35 (MAR)	23
Black-headed Gull	200 (FEB)	59 (MAR)	200 (FEB)	N/C	30 (MAR)	122
Mediterranean Gull	1 (FEB)	0	1 (FEB)	N/C	0	1
Common Gull	1 (FEB)	3 (DEC)	1 (FEB)	N/C	0	1
Lesser Black-backed Gull	2 (FEB)	1 (DEC)	0	N/C	0	1
Herring Gull	5 (FEB)	1 (JAN)	4 (MAR)	N/C	5 (DEC)	4
Great Black-backed Gull	3 (FEB)	9 (JAN)	3 (MAR)	N/C	50 (DEC)	16
Sandwich Tern	0	5 (NOV)	2 (DEC)	N/C	0	2
Kingfisher	1 (JAN)	1 (NOV)	0	(0)	1 (JAN)	1

CHICHESTER HARBOUR LOW TIDE COUNTS WINTER 2005/06

Raw monthly totals counted for the whole site

Species	Nov	Dec	Jan	Feb	Maximum count	Month of maximum count
Black-throated Diver	.	1	.	.	1	Dec
Great Northern Diver	1	2	1	.	2	Dec
Little Grebe	65	95	54	55	95	Dec
Great Crested Grebe	30	50	23	7	50	Dec
Red-necked Grebe	.	.	1	.	1	Jan
Slavonian Grebe	.	3	.	1	3	Dec
Cormorant	35	20	25	19	35	Nov
Shag	.	.	1	.	1	Jan
Little Egret	97	37	26	34	97	Nov
Grey Heron	12	16	10	8	16	Dec
Mute Swan	170	145	139	77	170	Nov
European White-fronted Goose	.	.	.	14	14	Feb
Greylag Goose	.	.	1	.	1	Jan
Canada Goose	46	40	66	50	66	Jan
Barnacle Goose	2	2	.	.	2	Nov,Dec
Dark-bellied Brent Goose	1389	1885	5261	6510	6510	Feb
Shelduck	128	348	567	564	567	Jan
Wigeon	1150	903	1665	1260	1665	Jan
Gadwall	.	19	20	48	48	Feb
Teal	339	508	669	641	669	Jan
Mallard	64	42	50	36	64	Nov
Pintail	12	39	69	147	147	Feb
Shoveler	3	4	4	2	4	Dec,Jan
Pochard	.	26	10	17	26	Dec
Tufted Duck	2	12	6	10	12	Dec
Eider	.	.	1	.	1	Jan
Common Scoter	.	15	.	.	15	Dec
Goldeneye	.	25	31	13	31	Jan
Red-breasted Merganser	49	191	138	80	191	Dec
Water Rail	8	1	4	.	8	Nov
Moorhen	38	30	61	67	67	Feb
Coot	19	39	88	76	88	Jan
Oystercatcher	772	671	513	587	772	Nov
Avocet	28	22	26	.	28	Nov
Ringed Plover	81	54	68	51	81	Nov

Species	Nov	Dec	Jan	Feb	Maximum count	Month of maximum count
Golden Plover	1406	922	1910	765	1910	Jan
Grey Plover	372	1227	315	326	1227	Dec
Lapwing	1622	1729	2067	1219	2067	Jan
Knot	533	94	453	762	762	Feb
Sanderling	85	24	14	3	85	Nov
Dunlin	8020	11265	9559	10663	11265	Dec
Snipe	5	5	.	5	5	Nov,Dec,Feb
Black-tailed Godwit	472	382	409	468	472	Nov
Bar-tailed Godwit	124	463	434	280	463	Dec
Whimbrel	3	2	1	2	3	Nov
Curlew	746	515	382	355	746	Nov
Spotted Redshank	.	1	1	.	1	Dec,Jan
Redshank	751	616	654	605	751	Nov
Greenshank	23	8	1	3	23	Nov
Common Sandpiper	.	1	.	.	1	Dec
Turnstone	117	69	62	69	117	Nov
Guillemot	1	.	.	.	1	Nov
Kingfisher	4	3	4	3	4	Nov,Jan

Peak and mean densities for each species for low tide count section BC0046 (creek N & E of Verner Common)

Areas in hectares, densities in birds per hectare. Data for gulls and terns not presented, since counting optional and thus statistics unreliable.

Species	Preferred habitat	Area of preferred habitat	Peak count	Peak density	Mean count	Mean density
Little Egret	Intertidal & non-tidal	19	2	0.11	1	0.07
Dark-bellied Brent Goose	All habitats	19	6	0.32	2	0.09
Shelduck	All habitats	19	10	0.53	4	0.18
Wigeon	All habitats	19	100	5.26	28	1.45
Teal	All habitats	19	104	5.47	67	3.51
Pintail	All habitats	19	2	0.11	1	0.03
Oystercatcher	Intertidal	17	21	1.24	8	0.47
Ringed Plover	Intertidal	17	3	0.18	2	0.09
Grey Plover	Intertidal	17	4	0.24	2	0.09
Lapwing	Intertidal & non-tidal	19	3	0.16	1	0.04
Dunlin	Intertidal	17	10	0.59	3	0.16
Black-tailed Godwit	Intertidal & non-tidal	19	15	0.79	4	0.20
Curlew	Intertidal & non-tidal	19	4	0.21	2	0.11

Species	Preferred habitat	Area of preferred habitat	Peak count	Peak density	Mean count	Mean density
Redshank	Intertidal & non-tidal	19	21	1.11	10	0.54
Greenshank	Intertidal & non-tidal	19	1	0.05	0	0.01
Turnstone	Intertidal	17	4	0.24	1	0.06

APPENDIX V: Species list of vascular plants, bryophytes, lichens and seaweeds

APPENDIX V

Species list of vascular plants, bryophytes, lichens and seaweeds

Survey includes the proposed development site, Yachthaven Coastal Meadow and the adjacent intertidal creek and saltmarsh. Surveyors: D. Allan, G. Matthes, J. Norton. Dates: 19 October 2010, 16 February 2011, 4 March 2011, 21 March 2011.

Key to estimated frequency column: D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally, P = present (frequency not possible to estimate). Due to the early season of the surveys, estimates of frequency should be regarded as tentative.

Species associated with ancient semi-natural woodlands are marked (*).

Vascular plants

Scientific name	English name	Freq.	Habitat, comments
<i>Acer campestre</i> *	Field Maple	R	One tree by site entrance.
<i>Achillea millefolium</i>	Yarrow	O	Grassland
<i>Agrostis capillaris</i>	Common Bent	F	Probably frequent throughout grassland inc. disturbed ground and coastal bank.
<i>Anagallis arvensis</i>	Scarlet Pimpernel	R	Disturbed ground
<i>Aphanes arvensis</i> agg.	Parsley-piert	R	Disturbed ground
<i>Apium nodiflorum</i>	Fool's-water-cress	O	Damp, disturbed ground
<i>Armeria maritima</i>	Thrift	LF	Saltmarsh
<i>Arum maculatum</i>	Lords-and-Ladies	F	Under hedgerows
<i>Aster tripolium</i>	Sea Aster	P	Saltmarsh
<i>Atriplex portulacoides</i>	Sea-purslane	LD	Saltmarsh
<i>Ballota nigra</i>	Black Horehound	R	Disturbed ground
<i>Bellis perennis</i>	Daisy	O	Grassland
<i>Beta vulgaris</i> subsp. <i>maritima</i>	Sea Beet	P	Saltmarsh
<i>Betula pendula</i>	Silver Birch	R	Hedgerow
<i>Brachypodium sylvaticum</i>	False-brome	R	Hedgerow
<i>Buddleja davidii</i>	Butterfly-bush	LF	Disturbed grassland
<i>Cardamine hirsuta</i>	Hairy Bitter-cress	P	Disturbed areas
<i>Carex pendula</i> *	Pendulous Sedge	P	Disturbed areas, north edge of site
<i>Carex</i> sp.	sedge species	P	Disturbed areas, north edge of site (possibly <i>C. sylvatica</i> Wood Sedge)
<i>Cerastium fontanum</i>	Common Mouse-ear	O	Grassland and disturbed ground
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	F	Disturbed ground
<i>Cirsium palustre</i>	Marsh Thistle	R	Grassland
<i>Cirsium vulgare</i>	Spear Thistle	P	Grassland and disturbed ground
<i>Hypericum</i> sp.	St John's-wort	LF	Disturbed ground
<i>Cordyline australis</i>	Cabbage-palm	P	Planted by boatyard
<i>Coronopus didymus</i>	Lesser Swine-cress	P	Disturbed ground
<i>Crataegus monogyna</i>	Hawthorn	A	Scrub and hedgerows

Scientific name	English name	Freq.	Habitat, comments
<i>Dipsacus fullonum</i>	Wild Teasel	F	Disturbed ground
<i>Echium vulgare</i>	Viper's-bugloss	R	Patch on coastal path
<i>Elytrigia repens</i>	Common Couch	LA	Disturbed grassland (over tipped rubble, etc.)
<i>Elytrigia atherica</i>	Sea Couch	LA	Saltmarsh
<i>Epilobium</i> spp.	willowherb species	P	Disturbed ground (probably inc. <i>E. ciliatum</i> American Willowherb)
<i>Erophila verna</i>	Common Whitlowgrass	LF	Coastal bank and disturbed ground
<i>Escallonia</i> sp.	Escallonia	P	Planted by boatyard
<i>Eucalyptus cineraria</i>	Silver-leaved Eucalyptus	P	Planted by boatyard
<i>Euphorbia peplus</i>	Petty Spurge	P	Disturbed ground
<i>Festuca rubra</i>	Red Fescue	LA	Saltmarsh
<i>Fraxinus excelsior</i>	Ash	R	Scrub
<i>Galium aparine</i>	Cleavers	P	Disturbed ground
<i>Geranium molle</i>	Dove's-foot Crane's-bill	P	Disturbed ground
<i>Glechoma hederacea</i>	Ground-ivy	LF	Hedgerows, grassland
<i>Hedera helix</i>	Common Ivy	A	Hedgerows
<i>Holcus lanatus</i>	Yorkshire-fog	A	Grassland
<i>Hyacinthoides non-scripta</i> *	Bluebell	P	Scrub near NE corner of meadow
<i>Hyacinthoides x massartiana</i>	Hybrid Bluebell	P	Eastern scrub boundary
<i>Hypericum perforatum</i>	Perforate St John's-wort	LF	Disturbed ground
<i>Ilex aquifolium</i> *	Holly	P	Hedge
<i>Inula crithmoides</i>	Golden-samphire	LF	Growing on coastal embankment either side of boatyard
<i>Iris foetidissima</i> *	Stinking Iris	O	Hedgerows
<i>Juncus inflexus</i>	Hard Rush	O	Grassland and disturbed ground
<i>Juncus maritimus</i>	Sea Rush	O	Saltmarsh, a few clumps.
<i>Lamium purpureum</i>	Red Dead-nettle	O	Disturbed ground
<i>Lepidium draba</i>	Hoary Cress	LF	Edge of coastal grassland
<i>Leucanthemum vulgare</i>	Oxeye Daisy	O	Grassland
<i>Ligustrum vulgare</i> *	Wild Privet	R	Hedgerow
<i>Limonium</i> sp	Sea-lavender species	LF	Saltmarsh
<i>Lonicera periclymenum</i>	Honeysuckle	O	Hedges
<i>Malva sylvestris</i>	Common Mallow	P	Disturbed ground
<i>Medicago arabica</i>	Spotted Medick	P	Coastal path
<i>Narcissus</i> sp. agg.	Cultivated Daffodil	P	Grassland
<i>Oenanthe pimpinelloides</i>	Corky-fruited Water-dropwort	P	Grassland
<i>Pastinaca sativa</i>	Wild Parsnip	R	Grassland
<i>Picris echioides</i>	Bristly Oxtongue	R	Grassland
<i>Plantago coronopus</i>	Buck's-horn Plantain	F	Coastal path
<i>Plantago lanceolata</i>	Ribwort Plantain	O	Grassland
<i>Poa annua</i>	Annual Meadow-grass	A	Disturbed ground

Scientific name	English name	Freq.	Habitat, comments
<i>Poa infirma</i>	Early Meadow-grass	A	Disturbed ground, especially coastal path
<i>Populus</i> sp.	poplar species	P	Eastern boundary
<i>Potentilla reptans</i>	Creeping Cinquefoil	O	Coastal grassland and disturbed grassland
<i>Prunella vulgaris</i>	Selfheal	O	Grassland
<i>Prunus spinosa</i>	Blackthorn	F	Scrub and hedgerows
<i>Pulicaria dysenterica</i>	Common Fleabane	LF	Marshy areas
<i>Quercus cerris</i>	Turkey Oak	P	Hedgerow
<i>Quercus robur</i>	Pedunculate Oak	D	Hedgerows
<i>Ranunculus ficaria</i>	Lesser Celandine	R	Hedgerows
<i>Ranunculus repens</i>	Creeping Buttercup	O	Grassland
<i>Reseda luteola</i>	Weld	R	Disturbed ground
<i>Rosa arvensis</i> *	Field-rose	R	Hedgerow
<i>Rosa canina</i> agg.	Dog-rose	O	Hedgerows
<i>Rosa stylosa</i>	Short-styled Field-rose	R	Hedgerow
<i>Rubus fruticosus</i> agg.	Bramble	LD	Disturbed ground, scrub and hedgerows
<i>Rumex pulcher</i>	Fiddle Dock	R	Disturbed ground, NW corner of development site
<i>Ruscus aculeatus</i> *	Butcher's-broom	R	Hedgerows
<i>Salicornia</i> sp.	glasswort species	LF	Very small patches and scattered plants next to the depression within the western part of the coastal meadow and small areas within the intertidal saltmarsh.
<i>Salix cinerea</i>	Grey Willow	O	Hedgerows and scrub
<i>Sambucus nigra</i>	Elder	O	Hedgerows and scrub
<i>Sedum acre</i>	Biting Stonecrop	F	Disturbed ground
<i>Senecio jacobaea</i>	Common Ragwort	O	Grassland and disturbed ground
<i>Senecio sylvaticus</i>	Heath Groundsel	R	Grassland
<i>Silaum silaus</i>	Pepper-saxifrage	P	Grassland
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	P	Disturbed ground
<i>Spartina anglica</i>	Common Cord-grass	LD	Saltmarsh
<i>Stellaria media</i>	Common Chickweed	O	Disturbed ground
<i>Taraxacum</i> agg.	Dandelion	P	Grassland
<i>Trifolium repens</i>	White Clover	O	Grassland and disturbed ground
<i>Ulex europaeus</i>	Gorse	O	Scrub
<i>Ulmus procera</i>	English Elm	R	One patch (largely dead) in hedgerow, W side of development area
<i>Urtica dioica</i>	Common Nettle	F	Disturbed ground
<i>Viola odorata</i>	Sweet Violet	P	Disturbed ground (garden escape)

Bryophytes

Scientific name	English name	Freq.	Habitat, comments
<i>Brachythecium albicans</i>	Whitish Feather-moss	P	Dry grassland
<i>Brachythecium rutabulum</i>	Rough-stalked Feather-moss	F	All terrestrial habitats
<i>Bryum rubens</i>	Crimson-tuber Thread-moss	O	Damp grassland
<i>Bryum pseudotriquetrum</i>	Marsh Bryum	O	Damp grassland
<i>Calliergonella cuspidata</i>	Pointed Spear-moss	F	Damp grassland
<i>Drepanocladus aduncus</i>	Kneiff's Hook-moss	R	By saline channel in meadow
<i>Grimmia pulvinata</i>	Grey-cushioned <i>Grimmia</i>	O	On asbestos and concrete
<i>Fissidens adianthoides</i>	Maidenhair Pocket-moss	R	Grassland
<i>Fissidens taxifolius</i>	Common Pocket-moss	R	Hedgerow
<i>Homalothecium sericeum</i>	Silky Wall Feather-moss	O	On concrete
<i>Kindbergia praelonga</i>	Common Feather-moss	A	All terrestrial habitats
<i>Orthotrichum diaphanum</i>	White-tipped Bristle-moss	R	On Elm in hedgerow
<i>Pseudoscleropodium purum</i>	Neat Feather-moss	P	Grassland
<i>Rhynchostegium confertum</i>	Clustered Feather-moss	R	Hedgerow
<i>Syntrichia montana</i>	Intermediate Screw-moss	F	Disturbed ground, concrete
<i>Syntrichia ruralis</i> ssp. <i>ruraliformis</i>	Sand-hill Screw-moss	R	Disturbed ground
<i>Tortula muralis</i>	Wall Screw-moss	A	Disturbed ground, concrete

Lichens

Scientific name	Freq.	Habitat, comments
<i>Evernia prunastri</i>	F	Hedgerows and thorn scrub
<i>Hypogymnia physodes</i>	P	Hedgerows and thorn scrub
<i>Lecanora carpinea</i>	R	On oak twig in hedgerow
<i>Lecanora chlarotera</i>	O	Hedgerows and thorn scrub
<i>Lecanora confusa</i>	R	On exposed mature oak, W end of meadow
<i>Lecanora expallens</i>	R	On exposed mature oak, W end of meadow
<i>Lecidella elaeochroma</i>	O	Hedgerows and thorn scrub
<i>Melanelia fuliginosa</i> subsp. <i>glabratula</i>	F	Hedgerows and thorn scrub
<i>Parmelia sulcata</i>	F	Hedgerows and thorn scrub
<i>Phaeophyscia orbicularis</i>	R	On Elm in hedgerow
<i>Physcia adscendens</i>	A	Hedgerows and thorn scrub
<i>Physcia aipolia/stellaris</i>	O	Hedgerows and thorn scrub
<i>Punctelia subrudecta</i>	O	Hedgerows
<i>Ramalina farinacea</i>	O	Hedgerows and thorn scrub
<i>Ramalina fastigiata</i>	O	Hedgerows and thorn scrub
<i>Ramalina fraxinea</i>	R	Thorn scrub
<i>Xanthoria parietina</i>	O	Hedgerows and thorn scrub

Seaweeds

Scientific name	English name	Freq.	Comments
Ascophyllum nodosum	Knotted Wrack	O	
Fucus ceranoides	Horned Wrack	O	
Fucus spiralis	Spiral Wrack	D	Covering large areas of intertidal of creek adjacent to site.
Ulva lactuca	Sea Lettuce	O	

APPENDIX VI: Seagrass Code of Conduct

MANAGEMENT SCHEMES IN THE HELFORD RIVER AND STUDLAND BAY

BEST PRACTICE ADVICE

Avoid travelling over seagrass, or if it is unavoidable keep your speed to a minimum.

Avoid grounding or drying out on seagrass at all times by being aware of where known seagrass areas are located and keeping a careful watch on your depth and tidal movements. If you do ground, less damage is incurred if the tide is allowed to float you off or you are pulled clear with a rope.

Avoid anchoring in known seagrass areas (which may be marked by signs or buoys) and use fixed moorings where ever possible. If visibility permits, try and anchor on bare sand.

If you do anchor near seagrass, motor up to your anchor when pulling it up rather than dragging it through the seagrass

If you have holding tanks, use pump-out facilities where available or empty your tanks in deep, well flushed open areas. Avoid using your sea toilet close to seagrass beds.

Avoid transferring invasive species by rinsing any mud and vegetation off your anchor and chain before leaving an area.

surveys indicate that the bed is in excellent health and may even be expanding.

Following concerns that the level of boating activity at Studland Bay in Dorset was causing a decline in the seagrass meadows and may have a detrimental impact on the seahorse population there, the Studland Seagrass and Seahorse Study Group was set up.

The group is a partnership of stakeholders and organisations with an interest in the site and its wildlife.

In order to determine if the level of boating activity at Studland is impacting on the seagrass meadows, a two year research project has been initiated. The study involves creating a voluntary no-anchor zone (vnaz) and a similar unmarked zone to study the effect of anchoring in the seagrass. It is hoped that the study will provide scientific evidence to inform the debate and assist future management.

The voluntary no-anchoring zone is marked by buoys and a postcard showing the zone and the local area helps ensure boaters are aware.

The voluntary approach has been very successful in reducing the number of boats anchoring on the seagrass and recent

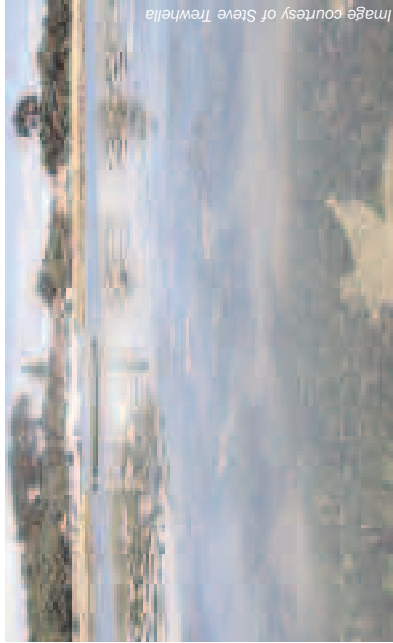


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Hampshire & Isle of Wight



THE GREEN BLUE is the environmental awareness initiative for the marine industry, and for boaters and water sports enthusiasts. It is run by the British Marine Federation and the Royal Yachting Association with support from The Crown Estate and Scottish Natural Heritage.

Details of the papers referred to in this fact sheet are available in the research section of The Green Blue's website www.thegreenblue.org.uk



WHAT WE KNOW ABOUT...

SEAGRASS

The importance of seagrass and how to minimise your impact on it is explained in this factsheet.

INTRODUCTION

Seagrasses are a unique group of plants, being the only ones to be able to live in saltwater. Four species occur in the UK and the two most frequently found are known as eelgrass (scientifically referred to as *Zostera* sp.), because of their long thin leaves, looking very much like the long grass seen on land. Seagrass requires high light levels to grow and shelter from waves and strong currents'. As such it is only found in intertidal and shallow subtidal areas in harbours, estuaries and well protected bays where it can form dense beds or meadows.

Much of our seagrass has been lost in the last century due to disease, Coastal development, dredging and pollution have hampered recovery and further contributed to its decline'. Globally 18 percent of the documented seagrass area has been lost due to direct or indirect human impacts in the last two decades'.

In this country seagrass is now classified as a nationally scarce habitat, occurring in a few sheltered sites around the UK coast.

Although little is known about the long-terms effects of recreational boating on seagrass, studies have shown that it can cause short-term damage.

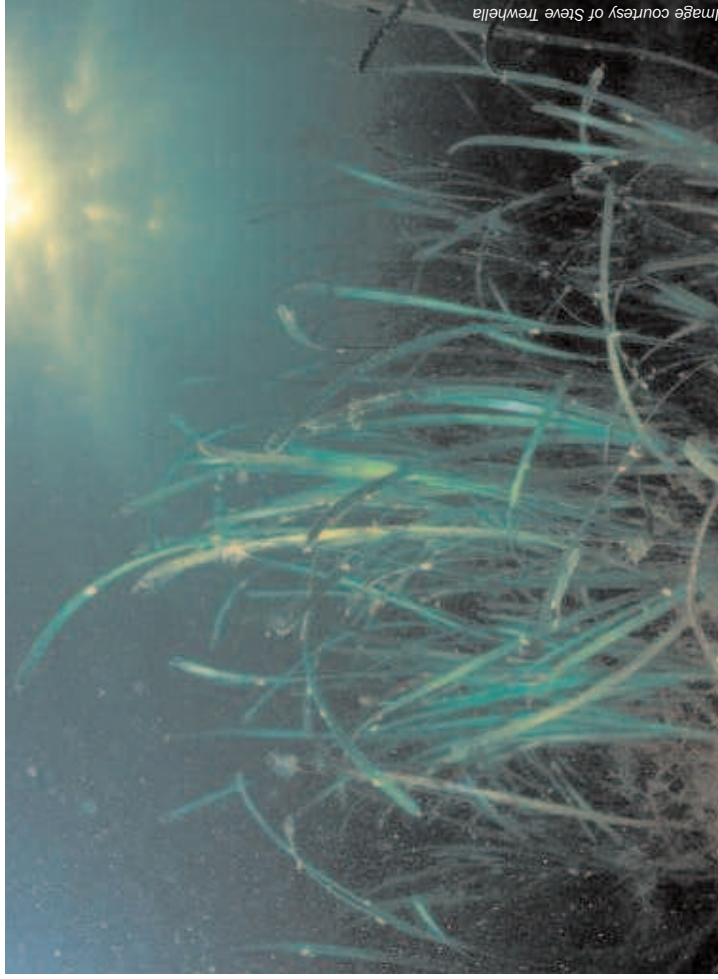


Image courtesy of Steve Trehwella

IMPORTANCE OF SEAGRASS

Seagrass beds support populations of various marine animals and plants. They act as nursery areas, providing protection for juvenile fish including commercially important species like bass^{3,4}. They also host a myriad of invertebrates, worms and shellfish, and provide a valuable food source for grazing wildfowl such as Brent geese⁵. The two native species of seahorse are also shown to have a strong association with seagrass in the southern UK.



Image courtesy of Steve Trewhella



Spiny Seahorse, Hippocampus guttulatus

Seagrass meadows can also reduce seabed erosion as their roots bind the sediment in place, helping to defend our coastline¹.

PROPELLER WASH

Scouring of the seabed and disturbance from wash can damage, dislodge and smother plants. In areas of heavy boat traffic this can lead to clearly visible scarring of the seagrass bed¹.

ANCHORING

Anchoring, dragging and boat wash can all have a negative effect on the seabed. This is especially important in sensitive habitats such as seagrass. Frequently used anchorages can often suffer from denuding and scarring⁶.

MOORING

Fixed moorings within seagrass beds can cause scarring and scouring and a reduction in the levels of marine life supported by the sediment as the chain drags on the seabed at low tide¹⁰. Where there are lots of moorings it can

IMPACTS OF BOATING

As recreational boaters our impacts are generally small scale but can be significant in some localised areas. Below are some of the ways that boats have been known to damage seagrass:

VESSEL GROUNDING

If this occurs on a seagrass bed it can uproot the plants, damaging the bed in localised areas^{7,8}.

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CONCLUSIONS

Seagrass beds are a fragile and important coastal ecosystem that face many pressures, however, the actual impacts resulting from these pressures are still not fully understood.

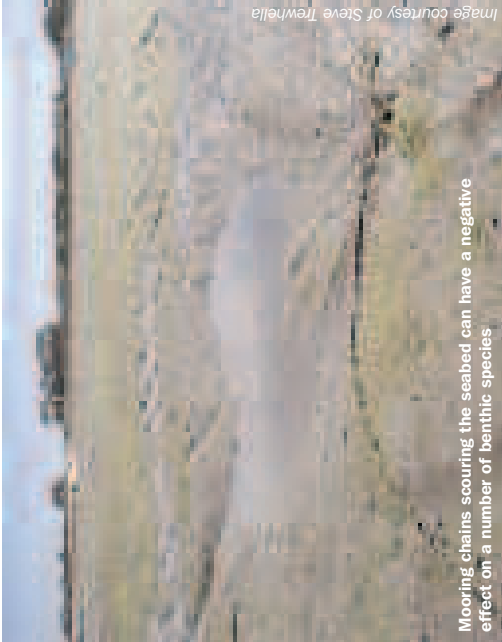
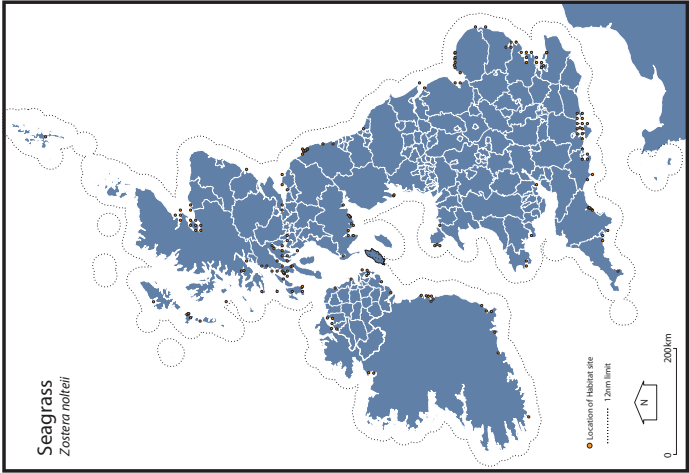
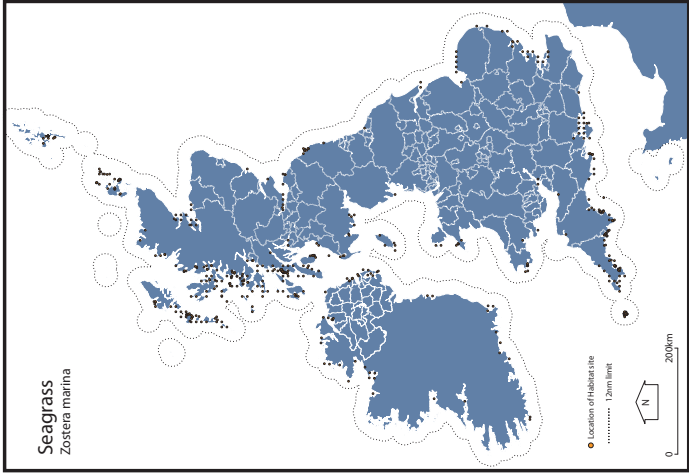
Voluntary approaches to protecting

to get relevant information about sensitive areas placed into pilot books and (electronic) charts.

seagrass have worked well in some areas and have contributed to a better understanding of the pressures and what boaters can do to help reduce their own impacts. The Green Blue is working with The Wildlife Trusts to learn more about seagrass and is actively working

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Moorings chains scouring the seabed can have a negative effect on a number of benthic species

Image courtesy of Steve Trewhella

growth of fast growing algae which can smother or out-compete the seagrass¹¹.

POLLUTANTS

Some antifouling paints contain herbicides (although many have now been banned) and other toxic constituents, these can reduce the growth of the plants¹³.

NUTRIENTS

Increased nutrient loading from sewage and grey water discharges can disrupt the delicate balance of coastal ecosystems. This can encourage the

cause the bed to fragment under certain conditions¹¹. This kind of scarring from moorings is visible in places like Chichester Harbour and Torbay.