

# Information Sheet on Ramsar Wetlands (RIS)

*Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8<sup>th</sup> Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9<sup>th</sup> Conference of the Contracting Parties (2005).*

## Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

---

## 1. Name and address of the compiler of this form:

### Joint Nature Conservation Committee

Monkstone House

City Road

Peterborough

Cambridgeshire PE1 1JY

UK

Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948

Email: [RIS@JNCC.gov.uk](mailto:RIS@JNCC.gov.uk)

FOR OFFICE USE ONLY.

DD MM YY

--	--	--

Designation date

--	--	--	--	--	--

Site Reference Number

---

## 2. Date this sheet was completed/updated:

Designated: 26 June 1997

---

## 3. Country:

UK (England)

---

## 4. Name of the Ramsar site:

Somerset Levels and Moors

---

## 5. Designation of new Ramsar site or update of existing site:

**This RIS is for:** Updated information on an existing Ramsar site

---

## 6. For RIS updates only, changes to the site since its designation or earlier update:

### a) Site boundary and area:

\*\* Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

### b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

## 7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ☐;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) *Yes*
- iii) a **GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ☐;

b) **Describe briefly the type of boundary delineation applied:**

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

## 8. Geographical coordinates (latitude/longitude):

51 10 14 N                      02 52 00 W

## 9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Weston-super-Mare

The Somerset Levels and Moors Ramsar site is bounded by Bridgwater Bay in the west and the higher ground of the Mendips, Dorset Hills, Blackdown Hills, Brendons and Quantocks

**Administrative region:** North Somerset; Somerset

## 10. Elevation (average and/or max. & min.) (metres):    11. Area (hectares): 6388.49

Min.	2
Max.	9
Mean	4

## 12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Ramsar site consists of a series of Sites of Special Scientific Interest (SSSI) within the largest area of lowland wet grassland and associated wetland habitat remaining in Britain. It covers about 35,000 ha in the flood plains of the Rivers Axe, Brue, Parrett, Tone and their tributaries. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peat bog which have now been substantially modified by agricultural improvement and peat extraction which has created areas of open water, fen and reedbed.

The site attracts internationally important numbers of wildfowl in winter and is one of the most important sites in southern Britain for breeding waders. The network of rhynes and ditches support an outstanding assemblage of aquatic invertebrates, particularly beetles.

## 13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

**2, 5, 6**

#### 14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

Supports 17 species of British Red Data Book invertebrates.

Ramsar criterion 5

#### Assemblages of international importance:

##### Species with peak counts in winter:

97155 waterfowl (5 year peak mean 1998/99-2002/2003)

#### Ramsar criterion 6 – species/populations occurring at levels of international importance.

##### Qualifying Species/populations (as identified at designation):

##### Species with peak counts in winter:

Tundra swan , <i>Cygnus columbianus bewickii</i> , NW Europe	112 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9- 2002/3)
Eurasian teal , <i>Anas crecca</i> , NW Europe	21231 individuals, representing an average of 5.3% of the population (5 year peak mean 1998/9-2002/3)
Northern lapwing , <i>Vanellus vanellus</i> , Europe - breeding	36580 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)

##### Species/populations identified subsequent to designation for possible future consideration under criterion 6.

##### Species with peak counts in winter:

Mute swan , <i>Cygnus olor</i> , Britain	842 individuals, representing an average of 2.2% of the population (5 year peak mean 1998/9- 2002/3)
Eurasian wigeon , <i>Anas penelope</i> , NW Europe	25759 individuals, representing an average of 1.7% of the population (5 year peak mean 1998/9-2002/3)
Northern pintail , <i>Anas acuta</i> , NW Europe	927 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9- 2002/3)
Northern shoveler , <i>Anas clypeata</i> , NW & C Europe	1094 individuals, representing an average of 2.7% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See [www.bto.org/survey/webs/webs-alerts-index.htm](http://www.bto.org/survey/webs/webs-alerts-index.htm).

Details of bird species occurring at levels of National importance are given in Section 22

**15. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Atlantic

**b) biogeographic regionalisation scheme** (include reference citation):

Council Directive 92/43/EEC

**16. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	acidic, basic, neutral, clay, alluvium, peat
Geomorphology and landscape	lowland, floodplain
Nutrient status	eutrophic
pH	acidic, circumneutral
Salinity	fresh
Soil	mainly organic
Water permanence	usually seasonal / intermittent
Summary of main climatic features	Annual averages (Cardiff, 1971–2000) ( <a href="http://www.metoffice.com/climate/uk/averages/19712000/sites/cardiff.html">www.metoffice.com/climate/uk/averages/19712000/sites/cardiff.html</a> ) Max. daily temperature: 14.3° C Min. daily temperature: 6.8° C Days of air frost: 33.0 Rainfall: 1111.7 mm Hrs. of sunshine: 1518.0

**General description of the Physical Features:**

The Somerset Levels and Moors are one of the largest and richest areas of traditionally managed wet grassland and fen habitats in lowland UK. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peatbog that have now been substantially modified by agricultural intensification and peat extraction. This has created areas of open water, fen and reedbed.

**17. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Somerset Levels and Moors are one of the largest and richest areas of traditionally managed wet grassland and fen habitats in lowland UK. The majority of the site is only a few metres above mean sea level and drains through a large network of ditches, rhynes, drains and rivers. Flooding may affect large areas in winter depending on rainfall and tidal conditions. Parts of the site in the Brue Valley include areas of former raised peatbog that have now been substantially modified by agricultural intensification and peat extraction. This has created areas of open water, fen and reedbed.

**18. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Flood water storage / desynchronisation of flood peaks, Maintenance of water quality (removal of nutrients)

**19. Wetland types:**

Inland wetland

Code	Name	% Area
4	Seasonally flooded agricultural land	85.1
U	Peatlands (including peat bogs swamps, fens)	5
O	Freshwater lakes: permanent	3
Other	Other	2.9
9	Canals and drainage channels	2
Xp	Forested peatland	2

**20. General ecological features:**

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The majority of the site is dominated by open wet grassland and ditches with a range of plant communities: Species-poor grassland including the semi-improved grassland communities with perennial rye grass and naturally-occurring species-poor floodplain or inundation grassland communities (National Vegetation Classification communities (NVC) include MG13, MG6, MG7, MG10).

Species-rich fen meadows and flood pastures where agricultural improvement has been less intense with MG8 *Cynosurus cristatus*- *Caltha palustris* grassland with *Cirsium dissectum* and *Caltha palustris* and mire communities such as M23, M24 and M25 with more *Juncus* and *Carex* species.

Smaller areas of drier species-rich hay meadows (MG5) with *Centaurea nigra*, *Orchis morio* and *Briza media*.

In the rivers, rhynes and ditches the floristic diversity is largely dependent upon sympathetic cleaning practises. The field ditches support the greatest floristic diversity including the species; *Wolffia arrhiza*, *Hottonia palustris* and *Hydrocharis morsus-ranae*.

Other habitats include - withy beds, orchards and pollarded willows.

The remaining habitats are largely restricted to the SSSIs within the Bure Valley where areas of former raised bog have been modified by peat extraction and agricultural improvement.

Small areas of tall herb fen (S24) with *Lathyrus palustris*, *Peucedanum palustre* and *Thelypteris palustris* and small remnants of raised bogs which are very degraded and support vegetation more akin to wet heath with *Erica tetralix* and *Molinia caerulea*.

Open water, reed swamp and reedbed with a range of species from submerged plants to tall stands of *Phragmites australis* and *Typha latifolia* are found in the flooded peat workings.

Wet woodland where peat has been cut many years ago and dominated by *Salix* spp., *Betula* spp. and *Alnus glutinosa*.

Ecosystem services

## 21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

### Nationally important species occurring on the site.

#### Higher Plants.

*Althaea officinalis*, *Persicaria laxiflora*, *Lathyrus palustris*, *Peucedanum palustre*, *Potamogeton coloratus*, *Potamogeton trichoides*, *Sium latifolium*, *Wolffia arrhiza*

## 22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

### Birds

#### Species currently occurring at levels of national importance:

##### Species with peak counts in winter:

Gadwall , <i>Anas strepera strepera</i> , NW Europe	522 individuals, representing an average of 3% of the GB population (5 year peak mean 1998/9-2002/3)
Water rail , <i>Rallus aquaticus</i> , Europe	36 individuals, representing an average of 8% of the GB population (5 year peak mean 1998/9-2002/3)
European golden plover , <i>Pluvialis apricaria</i> <i>apricaria</i> , P. a. <i>altifrons</i> Iceland & Faroes/E Atlantic	3857 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , <i>Philomachus pugnax</i> , Europe/W Africa	16 individuals, representing an average of 2.2% of the GB population (5 year peak mean 1998/9-2002/3)
Common snipe , <i>Gallinago gallinago gallinago</i> , Europe -breeding	1633 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)

### Species Information

#### Nationally important species occurring on the site.

Invertebrates.

*Hydrochara caraboides*, *Bagous nodulosus*, *Odontomyia angulata*, *Oulema erichsoni*, *Valvata macrostoma*, *Odontomyia ornata*, *Stethophyma grossum*, *Pteromicra leucopeza*, *Lejops vittata*, *Cantharis fusca*, *Paederus caligatus*, *Hydaticus transversalis*, *Dytiscus dimidiatus*, *Hydrophilus piceus*, *Limnebus aluta*, *Laccornis oblongus*

**23. Social and cultural values:**

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

- Aesthetic
- Aquatic vegetation (e.g. reeds, willows, seaweed)
- Archaeological/historical site
- Environmental education/ interpretation
- Livestock grazing
- Non-consumptive recreation
- Scientific research
- Sport fishing
- Tourism
- Traditional cultural

**b)** Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? **No**

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

**24. Land tenure/ownership:**

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	
National/Crown Estate	+	
Private	+	
Public/communal	+	

**25. Current land (including water) use:**

Activity	On-site	Off-site
Nature conservation	+	
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Collection of non-timber natural products: commercial	+	+
Commercial forestry	+	+

Cutting of vegetation (small-scale/subsistence)	+	+
Fishing: recreational/sport	+	+
Arable agriculture (unspecified)	+	+
Livestock watering hole/pond	+	+
Grazing (unspecified)	+	+
Permanent pastoral agriculture	+	+
Hay meadows	+	+
Hunting: recreational/sport	+	+
Industrial water supply		+
Flood control	+	+
Irrigation (incl. agricultural water supply)	+	+
Mining/quarrying	+	+
Transport route		+
Urban development		+
Non-urbanised settlements	+	

**26. Factors (past, present or potential) adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:**

*Explanation of reporting category:*

1. Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.
2. Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
No factors reported	NA				

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Is the site subject to adverse ecological change? NO

**27. Conservation measures taken:**

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
----------------------	---------	----------

Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Other	+	+

**b) Describe any other current management practices:**

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

**28. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

**29. Current scientific research and facilities:**

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

**Fauna.**

Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.

Separate surveys to assess bird populations in relation to the restoration of disused peat workings on Shapwick Heath SSSI.

Ditch fauna: repeat Levels and Moors wide surveys undertaken approximately every five years by EN.

**Flora.**

Ditch flora: repeat Levels and Moors wide surveys undertaken approximately every five years by EN.  
Meadow flora: repeat surveys 4-5 year repeat surveys by EN.

**Completed.****Fauna.**

Analysis of most recent trends undertaken by RSPB 2002.

Breeding waders: Four most recent major collaborative surveys on Levels and Moors, 1992, 1995, 1997, 2004.

**30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:**

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Existing programmes: Guided walks and school group visits are available to Shapwick National Nature Reserves. Somerset Wildlife Trust run their own programme of events on Westhay Moor SSSI and likewise the RSPB on West Sedgemoor SSSI. English Nature's team newsletter for farmers and landowners runs regular features about the site.

Interpretation facilities: Are available at the Peat Moors visitor centre adjacent to the Shapwick National Nature Reserve. Interpretation panels have been located around the Reserve where appropriate. SWT have provided interpretation boards on Westhay Moor SSSI.

**31. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

**Activities.**

Controlled microlighting with few reported incidences of disturbance.

Wildfowling on a number of moors across the area although the affects of disturbance on the Ramsar is largely unknown and requires further work. Further work on disturbance to waterfowl has been undertaken for EN. Closer working between Wildflowing Clubs, BASC is ongoing.

#### **Facilities provided.**

Limited facilities for visitors to use the site except at NNRs in Brue Valley. General visitors and bird watchers at Shapwick National Nature Reserve, Westhay Moor and West Sedgemoor. Walking, including dog walking on droves, cycling, bird watching, coarse angling on the Main Drains may cause some limited disturbance to sites.

#### **Seasonality.**

All year.

#### **32. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

#### **33. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

#### **34. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

#### **Site-relevant references**

Bratton, JH (ed.) (1991) *British Red Data Books: 3. Invertebrates other than insects*. Joint Nature Conservation Committee, Peterborough

Brookhouse, J, Mills, S & Self, M (1999) *Reedbed creation at Ham Wall – interim report. A case study*. Royal Society for the Protection of Birds, Sandy

Campbell, S, Hunt, CO, Scourse, JD, Keen, DH & Stephens, N (1998) *Quaternary of south-west England*. Chapman & Hall, London, for Joint Nature Conservation Committee, Peterborough (Geological Conservation Review Series, No. 14)

Chown, D (2002) *Assessment of the potential for disturbance to winter waterfowl at Moorlinch SSSI, with emphasis on the Raised Water Level Area*. English Nature

Chown, D (2003) *Night-time use of the Somerset Levels and Moors floodplain by waterfowl: final report, winters 2001/02 and 2002/03*. English Nature

Dawes, A, Leece, J (2002) *Somerset Levels and Moors breeding waders of wet meadows*. Royal Society for the Protection of Birds

Evans, C, Street, L, Benstead, P, Cadbury, J, Hirons, G, Self, M & Wallace, H (1995) Water and sward management for nature conservation: a case study of the RSPB's West Sedgemoor Reserve. *RSPB Conservation Review*, 9, 60-72

Ferns, PN (n.d.[1978]) *The Severn estuary. A heritage of wildlife*. Severn Estuary Conservation Group

Ferns, PN, Green, GH & Round, PD (1979) Significance of the Somerset and Gwent Levels in Britain as feeding areas for migrant whimbrels *Numenius phaeopus*. *Biological Conservation*, 16(1), 17-22

Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. [www.wwt.org.uk/publications/default.asp?PubID=14](http://www.wwt.org.uk/publications/default.asp?PubID=14)

O'Neil, P & Beebee, TJC (2005) The great silver water beetle in Britain: a cry for help *British Wildlife*, 16(4), 265-269

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Shirt, DB (ed.) (1987) *British Red Data Books: 2. Insects*. Nature Conservancy Council, Peterborough

- Somerset Levels and Moors Partnership (2003) *The Somerset Levels and Moors. Bibliography*. Somerset County Council, Taunton, for Somerset Levels and Moors Partnership. [www.somerset.gov.uk/levels/Bibliog/bibliogr.htm](http://www.somerset.gov.uk/levels/Bibliog/bibliogr.htm)
- Stewart, NF (2004) *Important stonewort areas. An assessment of the best areas for stoneworts in the United Kingdom*. Plantlife International, Salisbury
- Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) [www.jncc.gov.uk/UKSPA/default.htm](http://www.jncc.gov.uk/UKSPA/default.htm)
- Tallowin, JRB & Smith, REN (1994) The effects of inorganic fertilisers in flower-rich hay meadows on the Somerset Levels [and] Executive summary. *English Nature Research Reports*, No. 87
- Taylor, ARD (1999) *The Somerset Levels and Moors. An introduction to an internationally important wetland system*. Somerset County Council, Taunton, for Somerset Levels and Moors Partnership. [www.somerset.gov.uk/levels/SLMint.htm](http://www.somerset.gov.uk/levels/SLMint.htm)
- Williams, R (1992) Classic British wildlife sites: The Somerset Levels. Their landscape and wildlife – still under threat. *British Wildlife*, 3(6), 350-365
- Williams, R & Williams, R (1992) *The Somerset Levels*. Ex Libris Press, Bradford on Avon
- Wolseley, PA, Palmer, MA & Williams R (1984) The aquatic flora of the Somerset Levels and Moors. *Nature Conservancy Council, CSD Report*, No. 545

---

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**  
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • email: [ramsar@ramsar.org](mailto:ramsar@ramsar.org)