COUNTY: GLOUCESTERSHIRE & WILTSHIRE SITE NAME: COTSWOLD WATER PARK

DISTRICT: COTSWOLD & NORTH WILTSHIRE SITE REF: 15PN3

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended.

Local Planning Authority: Gloucestershire County Council, Wiltshire County Council, Cotswold District Council, North Wiltshire District Council

National Grid Reference: SU 00 93 to SU 20 99 Area: 135 (ha.) 337 (ac.)

Ordnance Survey Sheet 1:50,000: 163 1:10,000: SP 10 SE, SU 09 SW, SU 09 NW, SU 09 NE, SU 19 NE, SU 29 NW

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): June 1994 Date of Last Revision: –

Other Information:
New site. Listed in "A Nature Conservation Review", edited by D A Ratcliffe, Cambridge University Press 1977.

Description and Reasons for Notification:
The Cotswold Water Park is an extensive system of over a hundred lakes formed by mineral extraction from the Upper Thames floodplain in south-east Gloucestershire and north-west Wiltshire. A series of lakes has been selected to cover the range of variation of the plant communities associated with these nationally scarce marl waters. These lakes also contribute to the importance of the Cotswold Water Park for wintering and breeding birds.

Since the turn of the century, sand, gravel and occasionally clay have been quarried. The sand and gravel are derived from the Jurassic limestone of the Cotswold hills, washed down and deposited in the floodplain some ten thousand years ago by the melt water from retreating glaciers. These deposits are two to seven metres thick and were laid down over impermeable Oxford Clay, so the water table lies in the gravels or the soils above. Consequently, when mineral extraction ceases, the gravel pits flood to form relatively uniform lakes with an average depth of two to four metres. The water is lime-rich because of contact with the surrounding gravels, so there is often a deposit of calcium carbonate, or marl, on the lake bed. Such waters are very clear and usually have a characteristic blue tint. Marl lakes are nationally scarce and support distinctive aquatic plant communities. The Cotswold Water Park is the most extensive marl lake system in Britain.

Within the Cotswold Water Park, the older lakes tend to have been dug wet and often have a varied profile and shallow margins. More recent mineral working has involved dewatering to allow dry digging, which tends to produce steep-sided lakes with a more uniform cross-section. The selected lakes were created by both wet and dry working.

The lakes support an aquatic vegetation type characterised by the abundance of spiked water-milfoil *Myriophyllum spicatum*, fennel pondweed *Potamogeton pectinatus*, stoneworts *Chara* spp. and Canadian waterweed *Elodea canadensis*. Two variants of this lake type occur, both of which are characteristic of lowland Britain. One form is particularly typical of marl lakes and is rich in stoneworts, a group of large 'freshwater' algae. The other variant, which is associated with more nutrient-rich water, is richer in species and is typified by Canadian waterweed *Elodea canadensis* and common duckweed *Lemna minor.* The lakes were selected to include examples of both variants with the richest aquatic flora in terms of submerged, floating and emergent plants. The occurrence of scarce or unusual species or features was also taken into account.

An outstanding feature is the presence of eight species of pondweed *Potamogeton* spp. These include shining pondweed *P. lucens*, a species of clear, marl waters, and the nationally scarce, hairlike pondweed *Potamogeton trichoides.* At least four species of stonewort, some of which are characteristic of marl lakes, also occur. These are indicators of high water quality and include the nationally scarce, bearded stonewort *Chara aspera* var *aspera.*

The lakes support a variety of marginal species. One of the lake types is typically dominated by bulrush *Typha latifolia*, and the other by soft rush *Juncus effusus.* Other widespread species which form quite extensive stands in the context of the Cotswold Water Park include reed canary-grass *Phalaris arundinacea*, common reed *Phragmites australis* and common club-rush *Scirpus lacustris.* Areas of mixed, marginal vegetation, with water-plantain *Alisma plantago-aquatica*, common spike-rush *Eleocharis palustris*, water mint *Mentha aquatica*, and brookweed *Samolus valerandi*, also occur.