



SAVE OUR SOUTH COAST ALLIANCE

NITRATES AND NEW PROPOSED DEVELOPMENT IN THE CHICHESTER DISTRICT.

By

Richard C. J. Pratt, BA (Hons), PGCE, MSc (Arch), FRGS

Formerly of Birmingham School of Planning & Landscape Architecture and Brighton University Faculty of Built Environment

ASSOCIATION MEMBERSHIP:

Town & Country Planning Association

Royal Geographical Society/ Institute of British Geographers

What is the current state of nitrogen discharge to Chichester Harbour? It is already suffering and is likely to suffer at a faster rate with more development. Three Waste Water Treatment Works (WWTW) at Chichester (Apuldram), Bosham (Harts Farm) and Thornham are operated by Southern Water (SW) as is the network of sewer pipes, pumping stations and Combined Sewer Outfalls (CSOs). These all debouch to Chichester Harbour. Only the WWTWs have any kind of nitrate screening systems.

Yet Chichester Harbour area is covered by various internationally recognised and accredited designations. These are as follows: Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), Special Area of Conservation (SAC) and a Ramsar site.

In addition to its AONB status, Chichester Harbour is of international importance for its wintering bird populations, marine and coastal habitats and species as designated under EC Directives and the Ramsar Convention. The combination of tidal water and low-lying arable farm and woodland that surrounds the harbour provides a suite of valuable habitats for wildlife in Southeast England. The whole of the tidal area of the Harbour and some of the surrounding land is recognised as being of huge significance for nature conservation.

The mudflats, saltmarsh, grasslands, dune and shingle support substantial populations of overwintering waders, wildfowl and breeding seabirds, and other flora and fauna. For this reason, Chichester Harbour carries a number of international, European and national designations.

At the national level the intertidal area and some of the land is designated as a SSSI which is designated under the Wildlife and Countryside Act 1981 as a national network of areas with the greatest value to wildlife or geological conservation.

There are also Ancient Woodlands, which are sites that have been continuously wooded since at least 1600. Due to this they generally have a high diversity of flora and fauna, and can be considered irreplaceable. The Ancient Woodland Inventory is a non-statutory inventory of the Ancient Woodland sites in the UK, ancient woodland is a UK Biodiversity Action Plan (BAP) priority habitat. The inventory has recently been revised for Chichester District and it notes the following sites as

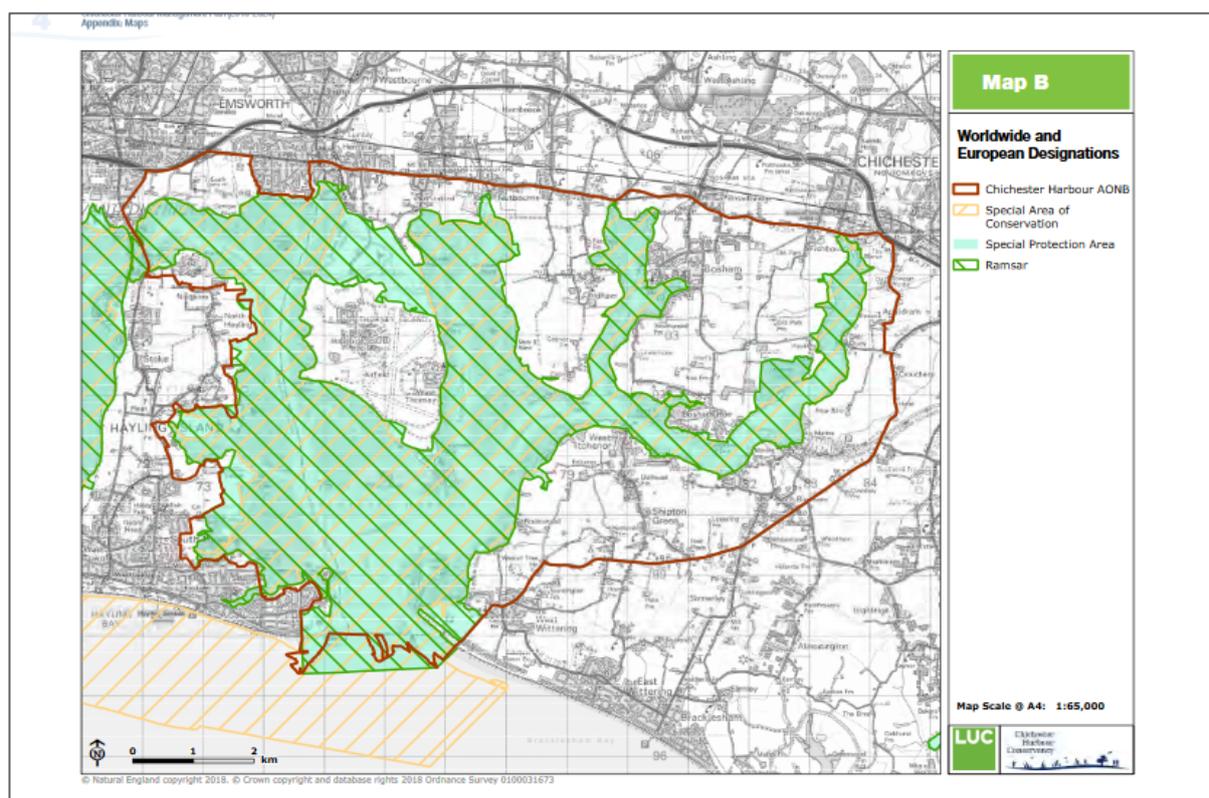
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ancient woodland: Old Park Wood, Black House Copse, Trews Copse, Fletchers Copse, Wolves Copse and Churchfield Copse.

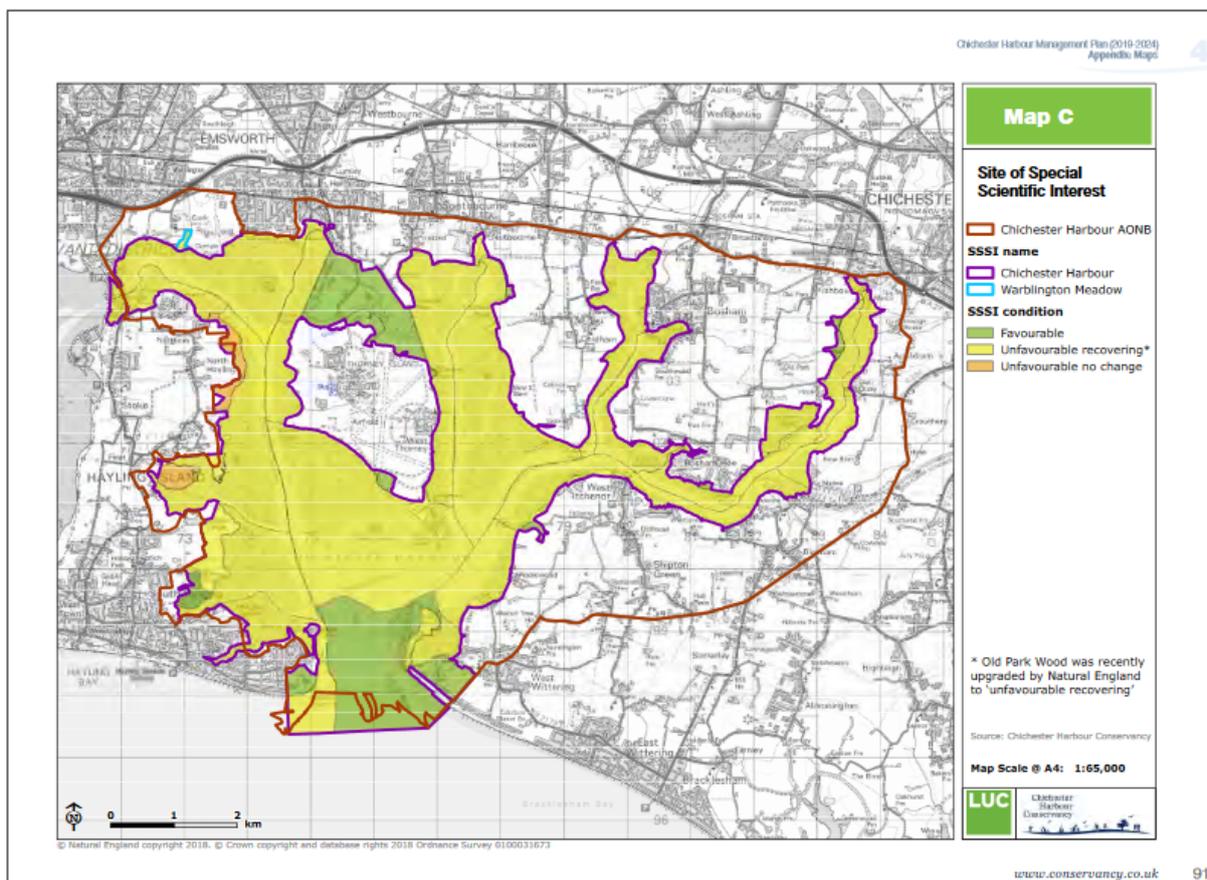
At the European level the intertidal area and some of the land is designated under the ‘European Birds Directive’ as a SPA, to protect habitats used by migrating birds. Many of the inland fields within the Parish area are important wader roosts and provide supporting habitat for the internationally important Dark-bellied Brent Goose.

The intertidal area is also designated as a SAC under the European Habitats Directive to protect habitats, flora and fauna of EC interest. At the international level, Chichester Harbour is also designated a Ramsar site under the Ramsar Convention (held at Ramsar in Iran) as an internationally important wetland.

See below for relevant maps from the Chichester Harbour AONB Management Plan Review (2019-2024) Third Review



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The discharge of nitrates and other nutrients to the waters of the harbour pose significant threats to water quality. Eutrophication (1) has been identified as a major influence in the Solent and in particular for Chichester Harbour. The impacts across Europe were recognised from the late 1960s. Within Chichester Harbour it has led to a significant increase in algal growth. Each year from May, when water temperatures rise sufficiently this growth chokes lee shores where it piles up, choking intertidal mudflats, the spartina, mooring lines and floating in the navigation channels as dense mobile vegetative islands. The spartina is itself an important element of the landscape of CHAONB. It was noted that it was “an ideal agent for trapping and stabilising unconsolidated estuarine muds and balancing the erosion of muddy coastal shores (Martin, 1990)” in a 2004 report for Natural England (2). The loss of spartina from the shores of the harbour since the 1960s has been oft noted by those who knew it then and see it now. The Environment Agency’s work on climate change impacts on Chichester Harbour in 2005 revealed that there had been a 50% loss of salt-marsh coverage since 1946. The dominant species of saltmarsh is spartina anglica, but also some small cord grass.

The salt marsh is also an important ‘damper’ of storm-blown tides, breaking the impact on lee shores (3). Hence its importance as an aid to the prevention of coastal erosion within Chichester



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Harbour. Whilst the spread of spartina elsewhere e.g. Lindisfarne, has been a cause of concern with respect to over-wintering waders feeding on intertidal mudflats, so too does the algal blooming that completely carpets the mud-flats of parts of Chichester Harbour as a result of eutrophication. This algal blooming is referred to by the EA as 'algal carpets' when it extends across saltmarsh and intertidal mudflats, typically between late April and August.

Nitrates are the biggest single driver of eutrophication. Much of this nitrate is from previous agricultural run-off which has now been addressed, but the leaching of nitrates from the substrate will take up to 40 years to cease. Meanwhile the impact of outflows from the built environment continues to increase.

In answer to a question by Cllr Penny Plant, Southern Water stated in November 2019 the following.

"The Bosham works removes around two thirds of the nitrates that are in the wastewater flows that comes into the works - the before and after nitrates figures are approx. 30mg per litre and 10 mg per litre respectively (annual average).

"This is in line with the EA operating permit for the site, with current available treatment technology able to deliver a 'best' treatment standard of 9mg per litre. As I may have mentioned, our three works that release treated wastewater into Chichester Harbour (Chichester, Bosham and Thornham) account for 5% of the nitrate load in the harbour water (based on EA analysis), with diffuse pollution washed in on tides making up 50% and agricultural run-off making up a fairly large share as well."

These are flows running through the WWTW. However, we know that given the groundwater conditions exacerbated by intense periods of rainfall, there are many occasions when licensed discharges take place through the Combined Sewer Outfalls (CSOs). These flows are not scrubbed of nitrates. An example of the numbers even in dry conditions is the month from 27th March- 28th April (a very dry period), the Bosham Association had received around 15 notifications from Southern Water advising of such discharges into the harbour. These intensify during periods of prolonged rainfall. Below is a graph provided by SW of their annualised 'spills', a euphemism for discharges via the CSOs. These are not subject to nitrate scrubbing because they don't pass through the WWTWs.

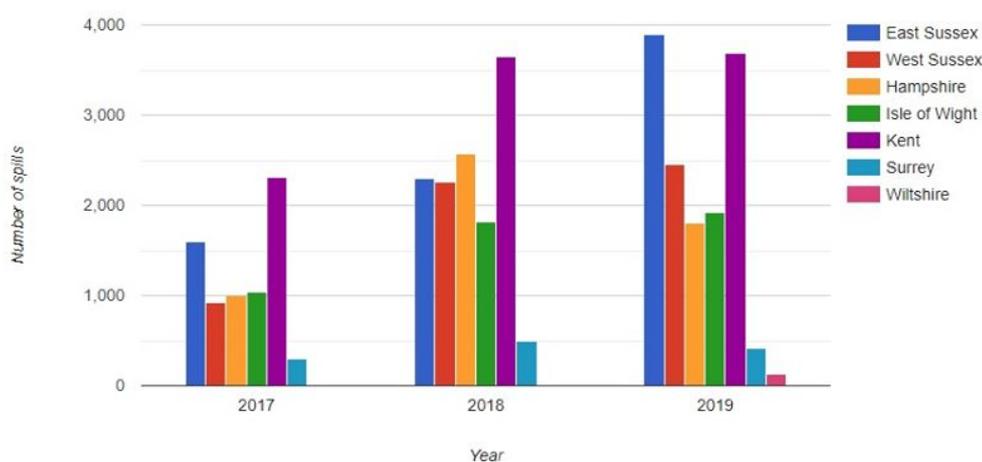
Source: <https://www.southernwater.co.uk/our-performance/flow-and-spill-reporting>



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Total number of spills per county, per year

We report our spill data annually (calendar year) to the Environment Agency. The graph below shows the total number of spills from our wastewater treatment sites each year, divided by county.



Spills are more common during severe weather events. Our region has experienced several periods of intense, heavy rainfall in recent years which has led to more frequent spills.

So what is at stake if planned developments are not made nitrate neutral in the Chichester District? Nitrate-neutral house building has belatedly become a concern and received some considered thought in respect of the Solent’s sensitivities (4)

Turleys, the environmental planning consultants state the issue succinctly as follows:

“What is the planning issue? The planning issue relates to ‘likely’ significant adverse effects caused by eutrophication resulting from increasing nitrogen levels (and to a lesser extent phosphorus) from land use and development restricting the growth, distribution and variety of food available for wading birds protected under the Conservation of Habitats and Species Regulations 2017 at internationally designated ecological sites across the Solent area. For the avoidance of doubt, this issue differs from the recreational disturbance of bird species addressed through the Bird Aware ‘Solent Recreation Mitigation Strategy’ and may require additional mitigation measures. Produced in draft in March 2018, the Integrated Water Management Study (IWMS) highlighted that internationally designated ecological sites (Special Protection Areas, Special Area of Conservation and potential SPA designations) located within the Partnership for Urban South Hampshire (PUSH) and surrounding area have the potential to be affected by increases in discharges of treated sewage effluent from future housing growth. Recognising this as a potential issue (and that further work was needed), the IWMS set out an action plan for the constituent local planning authorities of the PUSH area to develop a co-ordinated sub-regional mitigation strategy to address the nitrogen issue. This strategy is still being developed and no timetable for its production has been made available.



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Notwithstanding the above, following the recent tightening of environmental regulations through European case law, Natural England is evidently becoming more proactive in their opposition to development proposals with objections noted in respect of Local Plans and to individual planning applications (even those of a minor nature). What proposals are likely to be affected? Whilst the area affected is still being refined, at present, the nitrogen issue is likely to affect all residential development proposals in the PUSH area (including areas to the north of PUSH) and parts of Chichester District. This includes applications that have been submitted but have not yet been determined, and may even affect reserved matters applications (even where nitrogen load was not highlighted as an issue at the outline application stage). It may also be necessary to mitigate the impact of supporting land uses such as new open space including any SANG, Nature Reserves or Bird Refuge Areas, where these give rise to increased nitrogen load. However, Natural England has acknowledged that some open space, depending on its management and typology, may itself be counted as mitigation. Other types of development that attract people into a catchment area (i.e. tourism attractions / accommodation) may also need to address their nitrogen loading. To determine whether the nitrogen load is likely to increase as a result of a particular development, Natural England has produced a 'working draft' Methodology to calculate the nitrogen budget for developments. (Please contact Turley if you would like a copy of the Methodology). In short, where the results of the calculation show a positive net balance in total nitrogen, mitigation to achieve 'nitrogen neutrality' is likely to be required."

We living within Chichester District have welcomed the stance of Havant Borough Council in issuing the "Position statement on nutrient neutral development". The full statement may be found at:

<https://www.havant.gov.uk/sites/default/files/documents/Position%20Statement%20on%20Nutrient%20Neutrality.pdf>

It draws attention to many geo-physical features shared by its eastern neighbouring District Council. Amongst these, the following:

"The Council is already committed to development only taking place if it is sustainable development that includes relevant environmental protections. Part of the consideration of this is whether there would be a detrimental impact on the water quality on any European Designated Nature Conservation Sites. However, it should be noted the contribution from urban areas to this is relatively small and from new development extremely small. The majority of nitrogen deposition into the harbour is from agricultural practices or background deposition, the source of which is not known."

The statement cites as justification for applying the precautionary principle for all new development states the following

"The Conservation of Habitats and Species Regulations (2017 as amended), hereafter referred to as the Habitats Regulations are the UK's transposition of European Union Directive 92/43/EEC on the



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‘Conservation of natural habitats and of wild fauna and flora’ (the Habitats Directive). There are significant responsibilities conferred on the Council as a ‘competent authority’ under The Habitats Regulations. Chiefly, it requires the Council to only approve plans or projects (such as planning applications or a local plan) if there is no likelihood of a significant effect on any European designated nature conservation site.

“New development necessitates the provision of connections to the foul water drainage network. This could increase nutrient load at the Solent European Sites. Nutrient enrichment, can arise from wastewater treatment required in support of new development, even if it is a proportionately small contribution.

“An increase in nutrients in the macroenvironmental cause a process called eutrophication. Increases in nutrients cause this process which are found in effluent, fertilisers used in arable agriculture and faeces from animals”

The statement goes on to explain the impact of eutrophication on the Solent’s natural habitats and wildlife covered by a number of protective designations including all those that also cover Chichester and Pagham Harbours. These are:

- Chichester and Langstone Harbour Special Protection Area (SPA)
- Chichester and Langstone Harbour Ramsar Site
- Solent Maritime Special Area of Conservation (SAC)
- Solent and Dorset Coast Potential Special Protection Area (pSPA)

These are hereafter referred to the Solent’s European Sites.

The statement affirms that

“These sites consist of Special Areas of Conservation (SACs, designated under the Habitats Directive) and Special Protection Areas (SPAs, classified under the Birds Directive). Additionally, UK Government policy (section 118 of The National Planning Policy Framework and Circular 06/05) recommends that Ramsar sites listed under the Convention on Wetlands of International Importance (UNESCO, 1971), are treated as if they are fully-designated European sites for the purposes of considering development proposals that may affect them.”

An issue that this sharply raises for Chichester District Council is “are they participating in an integrated water management scheme with adjoining and overarching statutory regulators?” The National Planning Policy Framework requires that local planning authorities maintain effective cooperation (paras 24-27). This does include the Chichester Harbour Conservancy (responsible for the AONB within the District, but should also include Havant Borough Council as well as the Environment Agency and Natural England, through an Integrated Water Management Strategy.



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Additionally, The Havant Statement also raises the issue of a nitrogen budget (part of their District-wide Local Plan). Has Chichester considered as part of its sustainability appraisal or strategic environmental assessment such a methodology? Based on such a budget the District Plan should clearly set out appropriate strategic mitigation options available within the District that would mitigate all development planned within its area. These could include

- require much higher water efficiency standards of all new developments
- Taking lower-grade land out of agricultural use and converting it to a use that does not artificially increase the nitrogen load of the land
- Create wetland environments that act as a nitrogen sink and remove nitrogen from rivers and streams (catchment management solutions) whilst respecting the special qualities of our chalk streams which run between Downs and Sea.
- Increase the requirement for open space/Suitable Alternative Natural Green Spaces (Green open space provided and managed to mitigate the harmful effects of new development on protected bird habitats) for all developments on existing agricultural land.
- Agreement with Southern Water that they will increase the nitrogen removal rate at the receiving Waste Water Treatment Works beyond consented levels
- Contribute to taking land out of agricultural use and catchment management solutions within the river catchment area or funding higher level agri-environmental stewardships schemes for the impacted protected site
- Implementation of Brent Goose and Wader refuges

Since nitrogen mitigation will not be entirely addressed by on-site development, Havant BC have resolved to have recourse to Grampian Conditions. A Grampian Condition prohibits development authorised by the planning permission or other aspects linked to the planning permission (in the case of housing, occupation of the development) until a specified action has been taken (in this case the provision of an avoidance and mitigation package).

The Grampian condition is a facet of planning Scottish case law established by Grampian Regional Council v City of Aberdeen District Council (1984) 47 P&CR 633. The term is commonly also used in England and Wales. A "Grampian condition" is a planning condition attached to a decision notice that prevents the start of a development until off-site works have been completed on land not controlled by the applicant.

CDC could adopt supplementary planning guidance on nitrate reduction for Chichester Harbour*, just as the Dorset Partnership did for Poole Harbour to justify the conditioning of development in the harbour water catchment area. This would enable the authority potentially avoid appeal costs against refusals of consents for those who fail to meet the mitigation tests. This has also been the strategy of Portsmouth City Council being discussed in the Autumn of 2019. Havant Borough Council



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have set out a nitrate check-list combined with its checklist on recreational disturbance. It has also brought forward a legal framework to address the challenge of meeting government housing targets and protecting water quality along its shores and in its harbour.

* Much, if not all of the above argument is applicable to Pagham Harbour, but without more research I do not feel confident to comment.

**DP for SOSCA
29/04/20**