Solent Protection Society

News

Protecting the Solent and its Environment for Future Generations Autumn **2020**

# Pollution in its many forms

**During the past year the Solent Protection Society (SPS) has been investigating the impact of pollution on the Solent. This is a huge subject covering everything from shipping to plastic, sewerage to chemicals, noise to pleasure craft disturbance. We have looked particularly at how pollution gets into the Solent and what action is being taken by the various agencies involved. This has also meant looking at what comes down the rivers and out of the many outfall pipes that discharge into Solent waters.**

## Water Quality

We are all familiar with beach water quality monitoring by the Environment Agency (EA) which is the prime government body charged with checking water quality round our shores and in rivers. These reports, usually available weekly online (except in this Covid year where they started late and are monthly at present), are produced between May and September. The beaches are not monitored at other times and there are large stretches of the Solent where there are no designated bathing beaches; the western Solent for example. Here some monitoring is done by the EA but the results are usually contained in annual reports published retrospectively. They do however give a guide to trends.

England's rivers, lakes and coastal waters are as polluted as they were four years ago, with only 16 per cent achieving good ecological status, according to government data published in September.

## Drainage Systems

Combined Sewer Outfalls (CSOs) are largely part of the sewerage system controlled by Southern Water though some may be private. There are hundreds of these CSOs around the Solent. Most of the drainage systems in the Solent area are combined systems, that is sewerage water and rainfall flow through the same pipe. Consequently when there is a discharge, say during a storm or if there is a malfunction, then diluted sewerage comes straight into the river or sea causing pollution. As summer storms have increased, this has been happening more frequently and may on occasions breach the legal limits on the number of times this is allowed. Many of these outfalls are not monitored. Southern Water monitors the main ones and has to report on discharges which are picked up in annual reports by EA. We still await the Water Company Performance reports for 2019.

**Continued on page 2**

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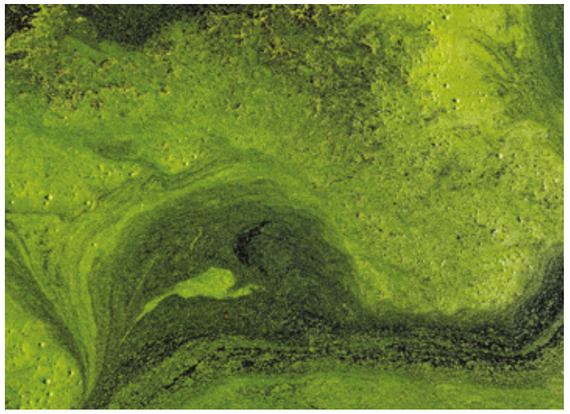
The main culprits are increased levels of nitrogen and phosphorous, with nitrates in particular enriching the water too much causing green algae blooms. These starve the water of oxygen with the inevitable knock on effect on marine life and plants. Not only does this pollution come from sewerage but even greater amounts come from current and historic fertilizer use on farmland and other sources, all of which eventually washes into watercourses. According to reports commissioned by the Solent area local authorities, the bulk of the nitrate content of the Solent waters comes from unspecified 'coastal background sources'. While much of that background will be from natural sources, we suspect that a significant proportion is likely to emanate from the long sea outfalls which discharge into the Solent. In the case of Langstone Harbour, we understand that it takes eleven tidal cycles to completely flush and with the overall flow of water eastbound through the Solent relatively slow, much of the material dispersed from these outfalls will remain in Solent waters for many days, moving backwards and forwards as it slowly disperses on the tide.



*Algae Bloom*

## Nitrate Neutrality

House building in the Solent area has been on hold for most of the year while councils look for ways to make new development 'nutrient neutral'. Natural England produced guidance in June for how new developments could theoretically achieve "nitrate neutrality". It does not, of course, do anything to improve an already bad situation but it is better than nothing.

We remain seriously concerned about the volume of new housing proposed. The direction set by the new white paper on Planning for the Future, currently under consultation, suggests that house building in the Solent area will both increase and accelerate. Without significant upgrades to the waste water treatment network and the adoption of sustainable drainage systems on new developments, the risk of unconsented storm discharges from outfalls will only increase.

## Addressing the Nitrate Pollution Issue

There are a number of potential options identified this year.

- Acquire farmland in a river catchment area and take lower lying fields out of agriculture and 're-wild' it. This method has been championed by the Hampshire and Isle of Wight Wildlife Trust (HIWWT) who have already used a government loan to acquire a farm on the Island. This will be taken out of production to generate "nitrate credits" which HIWWT can sell on to developers to offset the nitrate produced by their development. The profit made will enable HIWWT to pay back the loan and generate funds for the charity.
- Increase the capacity and efficiency of the wastewater treatment network, improving the capability for handling peak storm water discharge events.
- Continue to improve farming methods to reduce nitrate runoff. Over recent decades the farming industry has made significant progress in improving the sustainable use of fertilisers on farms and it is likely that much of the farm sourced nitrate load entering the Solent is historical. The nitrates being released into the ground from agricultural land take years or decades to finally leach through into the watercourses.
- Strengthen Planning policy to ensure that more areas are protected and that building of housing is more tightly controlled with infrastructure contributions increased to assist with the improvement of CSOs.
- Increase the mud flats and sub-sea plants like sea grass which, along with oysters, are proven absorbers of marine pollution, by vigorously protecting and perhaps expanding the marine protected areas around the Solent coast.

This is an extremely complex issue both legally, environmentally and technically, and there are certainly no quick and/or simple solutions. Each of the above options will play a part, but more effort and investment is needed if we are to turn neutrality into a positive decline. Some of this will require further legislation by government and some of it will inevitably mean increased water bills.

The 'rewilding' of farmland to generate nitrate credits has already been used by Fareham and Havant Borough Councils to kick start new housing development and in September 2020, the UK government approved the investment of £3.9 million to set up a first-of-its-kind national online 'nitrate trading' auction platform. This is a worrying development since SPS believes that any mitigation actions for housing development around the Solent should be taken for the benefit of the local area.

While the objective of 're-wilding' farmland is admirable, the benefits are unlikely to be seen in our lifetime. What we will see, however, is the impact of the additional development which the 'nitrate credit' approach will now permit. The problem for the Solent and its wildlife will get worse, not better, for the foreseeable future.

## What actions can SPS take?

**SPS has limited resources but we can continue to monitor the reports that are produced by the various agencies and apply pressure where we find objectives are not being met.**

**We can press for further legislation along with the many other specialist conservation groups who share the same goals.**

**We will try during the coming year to draw our monitoring into a form which illustrates the trends we find around our precious Solent.**



*The established coastal path over Tennyson Down*

# The Proposed English Coastal Path (South)
# Our progress report

The English Coastal Path (South) is part of the proposal by Natural England (NE) to achieve as full a coastal path as possible (as required by the Marine and Coastal Access Act 2009) along the area bordering the Solent. It is part of the coastal path project which covers the whole of England.

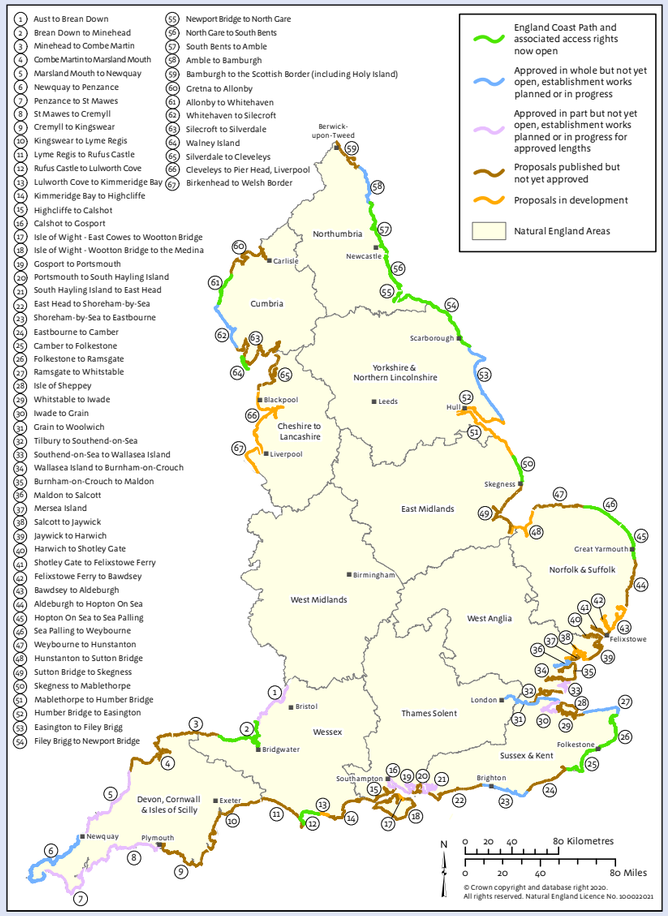
In our last newsletter we set out progress on four of the six sections that border the Solent. This left Section 2 – Calshot to Gosport and Section 3 – Isle of Wight to be published for consultation in late 2019 and early 2020. This report brings the developments up to date.

Calshot to Gosport came out for consultation in July 2019 and the Solent Protection Society (SPS), submitted comments by the deadline of 11th September. 2019. Our comments are set out below.

In March 2020 the Isle of Wight section came out for consultation but left out the tricky section between East Cowes and Wootton which is due later this year. The final consultation date for the published section was delayed by Covid but SPS submitted detailed comments in June. These comments are also set out below.

This year we have included the progress map for the whole of England as well as the progress map for the Solent area which puts the Solent progress into context.

Our sections are 15 to 21 on the "All England" map and you will see that some sections have been partially approved. These are in the Calshot to Gosport, Gosport to Portsmouth and South Hayling to East Head sections. However these partial approvals are often very short stretches within the section, so approval by the Secretary of State is fragmented. Having said that, any approval is better than none if it means some of the proposed improvement works, which can be extensive, can get under way.



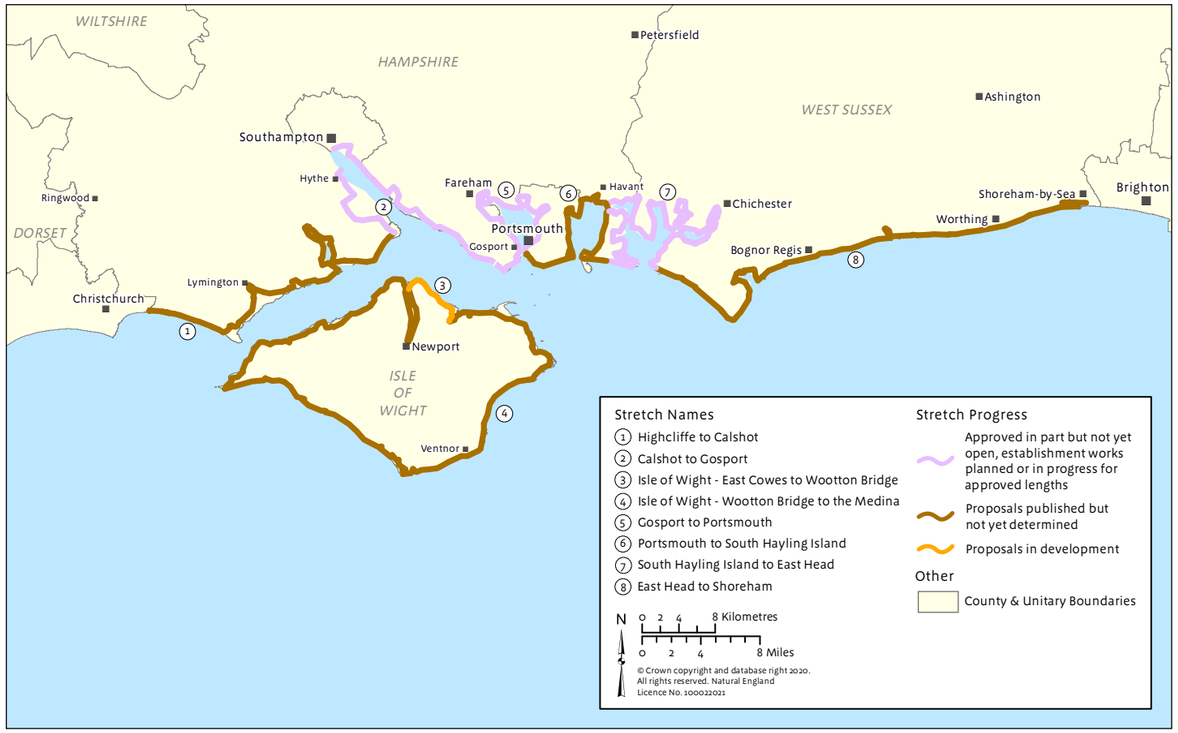

*Whole England Coast Path Progress to 18th August 2020*

**Continued from page 3**

We believe that the experience Natural England has gained, as the progress of the path consultations has developed over the years, has improved both the information available in the documents and the degree of protection for the many Marine Protected Areas (MPAs) around the Solent coastline. That is not to say everyone will agree, either as a landowner or a conservationist, but generally we feel Natural England has found a fair balance. In some sections we have disagreed with the proposals and suggested alternatives to get a path closer to the coast, in others we have supported them. Our guidance has been to make the Solent shore as accessible as possible without unduly affecting the protected sites of which we are rightly proud.

The task of defining the Coastal Path is a mammoth one and the complexity of our Solent coast has meant a great deal of research and very detailed proposals for which Natural England is to be commended. Of course parts will be controversial but overall we hope it is successful and the new sections and various improvements will come to fruition in the not too distant future.

There remains the East Cowes to Wootton section on the Isle of Wight where there is presently no access to the shore line on a very significant part of the Solent. We hope Natural England and English Heritage and other land owners can find a suitable route through.




*South Coast Path Progress to 9th July 2020*

# Our Comments

## Calshot to Gosport:

Generally the Society supports the proposals and is pleased with the links that have been proposed to join up various sections of path and create a more continuous route. It would indeed be nice to find a seaward route past Fawley oil refinery and we would hope NE would keep such an option in mind should circumstances change. Similarly the small detours required on the eastern shore of Southampton Water at Netley and the Holiday Park are a pity. SPS would not favour the alternative routes proposed in various places but would support the proposed line.

SPS accepts that the best of the three options and has been chosen at the three estuary crossings. We support the decision to use the pink ferry at Warsash and the Hythe ferry and note and support the reserve position that Natural England reconsider the matter in the event that either of the ferries cease to operate.

Finally SPS supports the proposed S25A designations proposed throughout the route to exclude the public from the seaward coastal margin in these extensive and important protected areas. We would hope that adequate signage is proposed throughout the route to inform the public of the exclusions and that in critical areas fencing is proposed to physically restrict public and particularly access by dogs.



This will be important if the proposed Fawley Waterside development takes place which will put increased pressure on the path and its margins at the south west corner of the route, but we strongly support the path going on the seaward side of the proposed development.

# Our Comments

## Isle of Wight Wootton to East Cowes:

**IOW-2-S017 and IOW-2-S018. Quarr Abbey Section.**
There is too long a section of the path between Kite Hill and Ryde where there is no view of the sea. We sympathise with Quarr Abbey as quiet contemplation and prayer is the reason for their being there. Quarr is an important and historical Abbey. However we think there is an important opportunity here to improve the view of the sea. If it is not possible to go along the foreshore, even with a winter exclusion using Quarr Road as the alternative, then perhaps a fenced route through Fishbourne Copse would be possible.

The path could then proceed past the heronry (with adequate conservation safeguards) to return up to Quarr Road to the west of the private properties.

**Priory Woods.** *Map 2g. IOW-2-S089 to end of IOW-2-S092.*
We would strongly support the proposals through Priory Woods. The path at high level becomes very muddy and sticky in winter so a board walk is needed.

*The Coastal Path to the west of Newtown Creek*

**Nodes Point.** *Map 2g. IOW-2-S093 to end of IOW-2-S097.*
Strong support again for this section with adequate steps due to the underlying ground.

**Ferry Point.** *Map 2h. IOW-2-S113.* Remove this section. We suggest the path should not pass in front of Ferry House to avoid trampling on developing shingle spit with interesting floral assemblage. Suggest short fenced path between the end of IOW-2-S112 and the start of IOW-2-S114. Information board sited at end of IOW-2-S112

**Yar Quay Bridge.** *Map 2h. IOW-2-S125 and S126.* We draw your attention to the current Planning Application P/00637/14 for nine houses to be built on IOW-2-S126. Suggest Coastal path to follow the current route to join the B3395 about 150 yards to the West unless a route past the housing can be agreed.

**From the "Crab and Lobster carpark" to Bembridge Boarding Campus** *IOW-2-S150 to S158.* This section is frequently closed due to cliff slumping. The option is either to roll back or take Howgate Road (suburban with no view of the sea) so roll back provision is important here.

**IOW-7-S025-S112 Hampstead to Porchfield.**
*Maps 7b ,7c, 7d & 7e*
It is clear that NE have tried hard to improve the Coastal Path around the highly sensitive waterside at Newtown and this is welcomed. The section at Western Haven will cut out a long and uninteresting inland section of track on the Hampstead trail and the proposed 7 month exclusion is appropriate for wildlife. As this is a new path we are not familiar with it and more fencing may be required both here and through the nature reserve to ensure there is no access, particularly for dogs, between the path and the water's edge.

Similarly the section through Walters Copse, past Clamerkin and through to Porchfield removes a long section of road walking. The protections at S095 to S097 seem appropriate and essential but we have no direct knowledge of this section.

We are generally pleased with the detailed work on the Isle of Wight path to identify the places for restrictions and signage.

**IOW-7-S119-S122 MOD land and Burnt Wood** *7f, 7g & Directions Map IOW 7B*
We are less happy with this section. While the revision from Porchfeld to Thorness cuts out a section of road which is welcome it does nothing to improve access to the shoreline. The approximately 1.5 mile section of coast from Newtown to Thorness is the second largest gap in the coastal path fronting the Solent after East Cowes to Fishbourne. The Solent on this stretch has beautiful views across to the New Forest and is an area of water with lots of recreational activity to observe.

We would strongly support the proposal put forward by NE under the option S119 –S125 to align the trail to Brickfields Farm via Shepherds Hill or north of it to return to Burnt Wood, fenced if necessary and following field boundaries. We would ask that this is revisited with the MOD to seek a permissive path which can be closed by the MOD where it leaves the Public Right of Way (PRoW) whenever necessary. A similar arrangement has been made for the ECP at Thorney Island in Chichester Harbour.

**Continued from page 5**

We would also support the proposal put forward by NE under the option S120 –S124 to align the trail through Burnt Wood, preferably in conjunction with the MOD land so that it is available when the permissive path is closed. We recognize that there are sensitivities in going through Burnt Wood rather than the cliff edge but would suggest that this option must be included in the proposals for the future. The route could be fenced back from the cliff edge with explanatory signage, a re-sited badger set could be provided if there was no way round it and the path could return to S123 if there was problem with erosion through to S124.

In the meantime there needs to be a link across the southern end of Burnt Wood from the Public Right of Way (PRoW) to the proposed route at S121 on the east side of Burnt Wood. This would also provide an alternative to the PRoW going through Elmsworth Farm. If the connection through Burnt Wood could be achieved rapidly then there would be no need for the path to the east of the wood.

**IOW-8-S001-S014 Thorness to Gurnard** *Maps 8a & 8b*
This section of path has fine views of the Solent but does become almost impassable in winter due to the muddy clay conditions. The proposed surfacing works will be a big improvement. The roll back proposals are essential as the cliff is prone to frequent erosion. In at least one section of S011 steps will be required cut into the path.

Just before S014 we would ask that a spur is created and steps provided to the beach in lieu of the path reverting to the old route even though the path would not then go behind Marsh Cottage and would use the present permissive path.

**IOW-9-S014 to S021 Spencers Wood.** *Map 9a*
SPS supports the proposal to take the ECP down through Spencers Wood. Replacement steps will be required at S014 and new steps by the slipway to allow safer access to the beach at S022.

**IOW-10.** *Generally Maps 10a to 10f*
SPS supports the tidal River Medina being included in the coastal path and are pleased to see that all the land in the coastal margin between the path and the water's edge at all states of the tide are to be excluded under a S25A direction as set out in 10.2.15.

**IOW-10-S070 to S074. Whippingham.** *Map 10f.*
While the reason for following a more inland route from Folly Works is understood, we wonder if a route from just north of the boardwalk and proposed kissing gate could follow the field boundaries to run North to join Saunders Way at S074 and so avoid road walking on Beatrice Avenue and be a more pleasant path and somewhat closer to the water's edge.

*The Isle of Wight coastal path from Gurnard looking across Thorness Bay*

**There is no access beyond the bay to Newtown in the distance. SPS have asked that this 1.5 mile section be reviewed to provide a permissive path through part of the MOD land similar to arrangements at Thorney Island.**

# Solent European Marine Sites (SEMS):

## Concerns about disturbance and pollution

Worldwide, ports, industry, housing and associated infrastructure have crowded onto estuaries that were previously quiet marshy areas, the preserve of birds, invertebrates and fish; places of peace and beauty. In many cases abroad, the loss of habitat, increased pollution and disturbance has destroyed these valuable environments, requiring major regeneration programmes. On the Solent, we have been fortunate enough to have sufficient Conservation Law and management initiatives in place to safeguard our coastal conservation sites, habitats and their species. Despite the protective legislation these areas are under great pressure.

The Solent European Marine Sites (SEMS) is the collective name for the areas of conservation importance around the Solent. SEMS also includes Marine Protected Areas below Mean High Water designated as Special Areas of Conservation (SACs), which protect habitats, and Special Protected Areas (SPAs) which protect birds and their associated invertebrate communities. The SEMS area lies between Hurst Castle and Chichester Harbour, including sites on the north shore of the Isle of Wight. The legal framework for the management of European Marine Sites can be found in Section 38 of the EU Habitats Directive and is transposed into UK law as the HabsRegs (updated, 2017).

SEMS management includes our smaller Solent estuaries, such as the Lymington and Medina Rivers, which are also designated as Ramsar sites. The Ramsar Convention covers the ecological fitness of estuarine habitats and species as a whole. (This was an early international environmental Convention, which was signed at Ramsar, Iran in 1971, and was a major step forward in the protection of key estuarine and aquatic sites worldwide, particularly for migratory birds.)

Responsibility for these sites lies with the SEMS management and stakeholder group. Advised by Natural England and with a secretariat provided by Solent Forum (www.solentforum.org.uk) they produce a comprehensive annual report which assesses the ecological fitness of, and threats to, each SSSI component of the SEMS sites. Any actions required are taken forward by the



*Bembridge Harbour and the Duver Marina*

Solent Forum Natural Environment Group. The varied nature of the sites and the many Local Authorities involved requires the co-operation of many stakeholders. Solent Forum provides the secretariat which pulls this all together – no mean task, and one carried out by a small, key and capable team.

At the time of writing, the SEMS management report for 2020 is in draft form and can be found at www.solentems.org.uk. Information continues to be added.

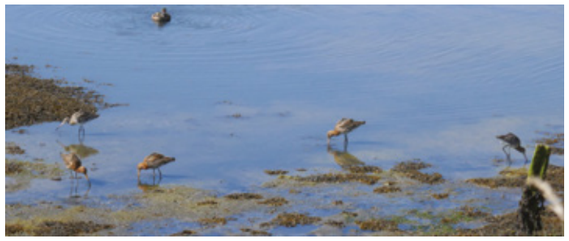
In brief – this year's assessment of the SAC found that although the coastal lagoons were considered to be in 'favourable condition', other features, including the estuaries have been found to be in 'unfavourable condition'. The reasons for this unfavourable assessment as listed in the draft report are:

- Elevated nutrient levels (see below)
- Low quality of invertebrates in subtidal sediments
- Elevated contaminants, mostly TBT
- Continued decline in extent of saltmarsh
- Decrease in intertidal and subtidal seagrass compared with their historic extent

An updated, more detailed method of assessment will be used in 2021.

Regarding the condition of the SPA (Birds), there is concern due to the proliferation of housing development within a couple of hours' drive of the Solent which has led to increased recreational pressure on our coastal habitats. Dog walkers, canoeists and more recently, paddleboarders seek out and disturb areas which were previously inaccessible such as creeks in saltmarshes. Drones, although occasionally used by the government agencies for scientific purposes, mimic a predatory hawk and cause alarm and disruption among nesting and feeding waterfowl and waders, frequently resulting in the loss of a brood.

Due to increasing concern about disturbance to these habitats, particularly to the saltmarsh, the responsibility for wardening and education has been managed by Bird Aware Solent (www.solent.birdaware.org) with a system of rangers who engage with the public, educating and informing, and explaining the dangers of disturbance on these fragile habitats.



*Godwits feeding in a protected Solent estuary*

In January 2020, a new large SPA was designated, covering the coastal area between Dorset and Sussex and including the whole of the Solent. Although it will be managed to safeguard the habitats of all migratory waterfowl and waders it is designated specifically to encourage the recovery of the Tern population.

The Solent Protection Society (SPS) is particularly concerned about the increased phosphate and nitrogen load in Solent waters and their effect on the biota. Both chemicals cause eutrophication (chemical enrichment of the water) which stimulates the formation of large green mats of algae. These mats mostly occur in hot weather and are very damaging, depriving habitats of oxygen and killing dependent species. SPS is pressing both Southern Water and the Environment Agency for more transparent and frequent reporting of outfall monitoring. There is more information regarding this SPS Council initiative in another part of this Newsletter.

The Solent Protection Society Mission Statement includes the words – *"The Solent Protection Society exists to ensure the ecological and environmental well-being and wise management of the Solent area."* These words chime well with the strategy of the Solent European Sites management team. Their job is a difficult one. Modern day pressures from recreational activities and pollution from housing, industry and farming on these precious areas of saltmarsh, maritime woodland, coastal lagoon and shingle are relentless.

Regarding disturbance, the 2020 SEMS report saw a relatively stable situation, although this is probably temporary. The effects of the recreational pressures manifest on the release of the Covid 19 lockdown will be included in next year's report.

# The pressure of new homes on the environment

*Run Off causing Green Algae Bloom*

We are all aware of the Government targets to increase housing supply, with a Nationwide target of 300,000 new homes per year. Presently the achieved figure is about 130,500 homes per year. (reference "Stimulating housing supply – Government initiatives 20 April 2020") These targets are reflected in the Local Authorities in and around the Solent.

Developers, and their Architects, have been concentrating, for many years, on "sustainability"; low carbon outputs from materials and building methods. This was administered by a complex Code for Sustainable Homes (now withdrawn). These requirements concentrated on energy usage, resulting in greenhouse gas emissions, which contributed to climate change. The long term aim was to make housing "energy positive" which, in this country, is far from being realised.

We have become increasingly aware of the potential damage by new development to the environment, not only visually, but in terms of pollution by way of additional nitrogen and phosphorus output into the waterways and the water treatment system, which in itself, is overloaded and unsustainable.

The water environment within the Solent region is an important area of wildlife, is internationally recognised, is an EU-Protected site, and protected under the Water Environment Regulations and the conservation of Habitats and Species Regulations. Any development within this region has the potential to impact upon the Local Environment and the Solent Complex. The problem of new Housing Developments is that they increase the run-off of waste water, which is rich in Nitrogen. This, in turn, increases algae bloom which can severely damage the ecology of wildlife habitats, particularly the bird population. The rivers Itchen and Test show high levels of nitrate and phosphates which lead to the growth of this algae.

Following an EU Directive and court ruling on protective sites (2018) non-binding advice was issued from Natural England, which stated that developments bordering the Solent must be Nitrate-Neutral, (target 2030). This had the effect of "freezing" development within the Solent Region and meant that Local Authorities could not deliver on their housing targets. The Local Authorities have been working with Natural England, Southern Water and the Environment Agency (EA) in an attempt to solve this problem.

Natural England has produced a guidance document **https://solentprotection.org/nitrates/** to encourage nutrient neutrality, by way of "Nitrate Credits", with a contribution payable by the developer. This was initially introduced by Portsmouth City Council to solve the Nitrate crisis.

## Current examples of mitigation proposed by Local Authorities

Fareham Borough Council (FBC) appears to be proposing to use an additional contribution to the established Section 106 legal agreement, to cover specific developer contributions, which would be attached to any specific Planning Permission. Payment would be made by the developer once the project proceeds. This gives the Local Authority (LA) a means to charge a specific site mitigation. By way of an example, FBC are proposing to improve the wastewater treatment works at Peel Common and would seek funds to enable this to be achieved.

Portsmouth City Council has developed a strategy whose overall aim is to reduce the wastewater sent to Budds Farm treatment works in Havant. They have identified that the strategy could create enough credits to provide an additional 518 homes per year. Portsmouth City Council presently plans to build 584 dwellings per year.

Eastleigh Borough Council (EBC), which had a target of 5,300 homes, are already asking that the Developer contributes a sum of £4,500 per dwelling, which relates to land cost and ongoing maintenance. This will be used to identify areas of agricultural land and remove these from high nitrate use to a lower intensity use thus, in theory, offsetting the nutrients produced by new housing developments. EBC have recently had their "local Plan" proposals rejected by the Planning Inspectorate and hence it is not known how they will achieve these targets.

*Building extending onto Agricultural land*

Although land within the City is limited. Southampton City Council have a target of 726 homes, a £144m investment. The Council have published a "City Vision" in the form of Habitats Regulations Assessment and Sustainability Appraisal. The Vision includes water courses, soil resource, coastal defences, air quality, etc.

The Isle of Wight has a huge government target of 9600 homes or 641 homes per year with a population only 55% of Southampton.

Fareham Borough Council are projecting 2,700 homes over the next 5 years, at approximately 500 homes per year. Havant appears to have a shortfall of 4,800 homes until 2036. New Forest District Council has a projection of 1,380 to 2036, which includes Fawley Village 380. These are target figures available as at August 2020. They may vary with updated policies.

In addition Local Authorities have also joined with the Solent Recreation Mitigation Strategy, a way of safeguarding the countryside for public recreational use, by raising funds from further payment by the developer. This is set by the each LA as a contribution per dwelling.

All these contributions are in addition to the existing Community Infrastructure Levy (CiL). This is an established Government directive (revised 2019) by which LAs can apply a levy to support community infrastructure such as roads, pavements, cycleways, green spaces, playgrounds, etc.

## Will the Nitrate Credits be enough to safeguard the Solent Wetlands?

The preceding figures illustrate that our Local Authorities are developing strategies whereby they identify areas of agricultural land, which may be removed from a high nitrate intensive use to a lower intensity use, offsetting the nutrients produced by new housing developments. This, in theory, will ensure no net increase in nitrates within the Solent, but has yet to be proven in practice. It also loses good agricultural land which conflicts with the Agricultural and planning policies, which will contribute to a net loss of soil resource (Agriculture) and sterilisation of land. However, developers do have a responsibility to identify the steps they intend to take independently to achieve Nitrate-Neutrality within their proposals, including opportunities to work with third party landowners.

There are still the issues of additional nitrogen and phosphorus output seeping into the waterways and overloading the public sewers and treatment plants, already surcharging during inclement weather. The developer still has to provide an effective sustainable drainage system, but in many instances, it connects to an existing overloaded drainage system and treatment works.

## Summary

These mitigation credits mean that, in theory, development can proceed and Local Authorities can plan to meet their housing targets. Will the measures now in place, through the planning process, be enough to safeguard our local environment and will mitigations through Nitrate Credits be effective? There is a danger that mitigation through financial contribution will just be another cost to add to the development, in addition to the cost of appropriate consultants to examine the local and wider issues. The management by Local Planning Authorities will be influenced by the need to supply the additional houses in accordance with Government targets.

The Solent Protection Society will continue to monitor local development and make appropriate comments on these evolving planning policies. In particular Local Authorities' identification of appropriate sites for development, their proposals to offset local agricultural land and those so called "Nitrate Credits" which allow development to proceed.



www.solentprotection.org

# Hurst Spit, Keyhaven and Lymington Marshes

*Hurst Castle*

In last year's Newsletter we referred to repair work needed to restore Hurst Bank and the castle following storm damage which had, in part, undermined the foundations of the castle. In the months since then, the Local Authority and English Heritage have undertaken substantial reinforcement to ensure continued pedestrian access to the spit and castle and protect the salt marshes and wildfowl habitats. We understand that there is evidence of subsidence in the castle and that further work to the spit is under consideration.

During the year there has been more storm damage in the area and lately to the west of Milford where seawalls are damaged.

As a result of increasing storm damage, probably due to climate change, the Environment Agency in partnership with Hampshire and New Forest District Councils and Natural England, are exploring a sustainable future for the coastline between Hurst and Lymington, Solent Protection Society were invited, together with other local interest groups, to participate in the initial discussions and we hope to continue to be involved as the project develops. It is likely to be a lengthy and costly exercise with a cost of tens of millions of pounds being mentioned.

It is recognised that maintenance of the sea defences cannot continue as before, not least because local supplies of shingle are running out and the trend of the spit to move landwards will put increasing pressure on the salt marshes. To put this into context, it is estimated that within a hundred years, climate change and resultant sea level rise will result in high tide levels being in excess of one metre above today's levels. Saltgrass Lane between Hurst and Keyhaven is now regularly covered at high tide and estimates suggest that by 2070 water depth may be increased by more than half a metre.

The Environment Agency's initial presentation analysed the risks of doing nothing and letting nature take its course. These included flood risk to both residential and commercial property, the failure of existing seawalls within this decade, and damage to marine and salt marsh habitats. Habitat loss is currently estimated to be about one percent a year and birds, notably Terns and Mediterranean Gulls are in decline as a result of habitat loss and reduced sources of prey.

Work impacting on flood risk has so far concentrated on the repair and reinstatement of the spit but it seems that this alone will not be sufficient to preserve and protect this valuable marine environment. Expenditure will be considerable, as indicated above, but without it this part of the Solent coastline will change radically and permanently. We must hope that decisions can be made and agreed and work started before a repeat of the storm damage already seen this century.



# The South Marine Plan

The Solent is a part of the South Marine Plan, produced by the Marine Management Organisation (MMO). This plan has now been in existence for two years and is invaluable in judging both marine licence applications and land based applications. We have established contacts with our local Marine Management Office and often with the individual case officer concerned. This position has improved over the last two years as the MMO has recognised the importance of organisations like the Solent Protection Society; we are neither an applicant nor a decision making body but an 'other stakeholder' and so our voice has to be strong to be heard.

We have participated in annual reviews of the plan as part of the MMOs' monitoring exercise and have had some impact on how the MMO considers applications in the light of the Marine Plan.

One of our concerns during the past year has been related to the many applications for dredging in the Solent. There are specific policies in the Plan to encourage beneficial use of dredgings and we are keen to see this taken up to replenish our eroding salt marshes which are essential in many ways to the health of the Solent as well as protecting the foreshore. Applications prior to the Marine Plan have not had to consider this in depth and have generally opted to dispose of dredgings offshore. It has been a struggle to get these parts of the plan properly addressed, however we are encouraged that applicants are increasingly being asked to justify why beneficial use has not been properly considered.

*Dredgings used to recharge beach*

As many will know there has been a trial going on at Lymington which provides a lot of information about techniques and there is ongoing research through Solent Forum and ABP Mer.

We hope this will eventually result in replenishment, not dumping, being considered a priority.

For anyone interested in finding out more contact the secretary secretary@solentprotection.org

## Marine Licences and the South Marine Plan – What's been happening?

One of our major tasks is to check proposed developments in Solent waters to ensure they will enhance, or at least not damage, those features of the Solent which we all want to preserve and improve. Since February 2017 we have been doing this by monitoring Marine Licence Applications in the Public Register issued by the Marine Management Organisation (MMO). The public register covers the whole coastline of England and is divided into regions – not the same regions as those used for the Marine Plans. The Solent is included in the South East Marine Licence region which extends from Southend to west of the Isle of Wight. Sometimes Solent applications are misallocated to the South region, which extends west to Dartmouth so we have to look there too. The summary of Applications is supposed to include location but often this is left blank or uses some extremely local designation such as the name of a house where the owner wants to build a slipway. In such cases we have to dig deep into the associated documents, sometimes as many as 25, to find whether the application is for work in the Solent.

Most applications involve work on or very close to the shoreline but some, not usually in the Solent, are in deeper offshore waters, such as offshore wind farms and new power cables to/from France, enhancing Britain's capacity to import or export electricity.

Each month we issue a report to our Society's Council showing all those applications which are open for consultation, together with a summary of the proposed work; those applications which the MMO have already decided whether to permit or refuse; and those applications which have been submitted but not yet decided. Our Council decides whether we should object, ask more questions, or suggest some improvements to the scheme or some conditions which should be imposed.

In August there were four applications open for consultation which all happened to be in the Southampton area although two of them were found in the wider MMO's South region. And there are five applications which have already been completed by the MMO.

Current applications open for consultation, which we are considering at the time of writing are:-

1. Extending the Ocean Quay Marina on the River Itchen, where we are concerned about excessive narrowing of the navigational channel and have asked for the extensions to be reduced in length so as not to extend into the river any more that the neighbouring Shamrock Quay.
2. Maintenance at Hythe Marina Village comprising replacement piles and augmenting the rock-armoured sea defences.
3. Capital dredge at Ashlett Creek to improve access to the moorings of Ashlett Sailing Club.
4. Maintenance dredging by Solent Gateway Ltd., who own and operate the military port at Marchwood. This together with item 3 are cases where we encourage MMO to get applicants to take seriously the need to find beneficial uses of dredged material such as replenishment of salt marshes and seagrass beds instead of assuming it can be dumped at sea as has always been done in the past.

Our comments are taken seriously by the MMO who often pass them on to the Applicant and we usually get a reply giving more information or agreeing to consider our concerns. When the decision is made there are often changes or conditions imposed which reflect our concerns and so we believe that our interventions have a beneficial effect in mitigating any adverse effect of developments, and improving conditions in the Solent.

# Fawley New Town

This is the third report in our annual newsletter concerning plans by Fawley Waterside Ltd. to build a new small town on the site of the former Fawley Power Station.

The development of this power station site will provide 1500 new homes and commercial properties. Some 470 of the homes will be affordable properties in a scheme which will cost nearly £1bn. There will be an underground car park with more than 2,000 spaces, a 98-metre-high landmark building to replace the former power station's iconic chimney, a 150-bedroom hotel and boat stack to store up to 600 vessels.

The plan features almost 100,000 square metres of new commercial, civic and employment areas, along with public open space. An urban forest will be planted to create a buffer between the industrial and residential areas. A canal will be formed to create a dock area and berthing facilities for leisure boats and yachts and a two hectare area has been cleared to provide a habitat for wildfowl.

The scheme requires final approval by the New Forest District Council (NFDC) and the New Forest National Park (NFNP).

When we wrote our last report, the NFDC planning department had published a twelve page letter to the developers asking for clarification of several aspects, more information on other aspects, and expressing concern about some features of the plan. As a result the developers issued a revised plan in April 2020. The main revisions are:-

- Residential properties in the Northern Quarter have been removed and replaced with commercial floor space.
- Height and location of the landmark buildings in the Heart of Town have been amended and the height and form of the principal landmark building has been reduced.
- The 11 storey crystal tower has been replaced with a mixed use building of 4-5 storeys.
- Tree Planting Plan has been amended to create an oak tree lined boulevard and introduce trees along the esplanade.
- The form and layout of the Saline lagoon/creek has been amended.
- Flood defence works have been included within the design code.

*View of the proposed town from the south*

Following this there was a second round of public consultation and Solent Protection Society sent the following reply:-

*These further comments are from the Solent Protection Society (SPS) which exists to protect the Solent and its tidal rivers and estuaries for future generations. The comments are primarily directed at the element of the scheme within the control of NFDC however we have copied them to NFNP as that aspect of the scheme in the national park, while of less concern to SPS, is an integral part of the whole and does have some impact on the waterfront.*

*The comments are a response to the revisions in the 2020 application referred to as Applications 1 & 2 but under the original reference 19/10581. We understand our comments on the original application will remain valid though clearly some of them have been addressed in the latest documents, which is welcome.*

*SPS welcomes the overall revisions that have been made including the additional information such as views from the sea and greater environmental information. We may have missed some of this information in the many earlier documents but have found more this time.*

1. *We support the revisions to the landscape proposals and articulation of some of the buildings particularly along the waterfront. It is a pity that no trees are proposed in front of the National Grid Fawley Sub-station (NGFSS), where the coastal path will run. While we recognize that this land is presently outside the application boundary there seems to be a space between Eastern Rd and the High Water Line of about 20 metres, so room for trees.*

   *The NGFSS buildings and land are, we understand, leased from the landlord, Fawley Waterside so the trees could be conditioned as off-site works in support of the proposal.*
2. *The plan says "Office uses and a marina may be included ... subject to demand and viability." We are concerned if this means the central canal may not be an obligation as it is central to the proposals whether or not it has a marina use.*
3. *The Marine Management Plan (MMP) is admirable and we would hope could be implemented in its entirety. We would like to see, as a minimum, monthly water quality testing throughout the year with an annual report, for the life of the project as part of the legal agreement. We would like to see the type of craft to be managed, listed under Scope of MMP Requirements, Schedule of Actions, point 4, expanded to include PWCs (Personal Watercraft). These are not categorised as boats and they are the type of craft most likely to offend.*
4. *The surface water drainage system relies on drainage direct to the Solent, we would like to see evidence that the applicant has considered whether this drainage will remain satisfactory taking into account the likely sea-level rise that will take place during the life of the development.*
5. *We have not seen any evidence that beneficial use of dredgings will be considered whenever possible. While this may, we hope, be part of a Marine Licence under the South Marine Plan in the future it should in our view also be included in the Marine Management Plan as part of the replenishment of the salt marshes which are subject to erosion.*
6. *Finally we consider the illustrated views from the sea for the revised proposals to be an improvement on the waterfront including the landscaping, lighting and the landmark buildings which, despite some reduction in height, remain sufficiently distinctive.*

On 19 July the planning officers' report to the NFDC Planning Committee was published. This included a short section on the response of the Solent Protection Society which, we feel, is a good summary of our position and gives SPS due weighting. It reads as follows:-

10.6 *Solent Protection Society:- Concerns were initially raised that the proposals would not adequately meet policies for the area. In particular, there were concerns relating to the size and scale of buildings fronting the water; it was felt light pollution would be to the detriment of the marine environment; it was considered more tree planting was needed to the coastal edge. There were also concerns about storm water overflows and the monitoring of water quality. With the amended proposals, the revisions to the landscaping are supported, but feel the visual impact on the retained national grid building could be better mitigated; consider the Marine Management Plan to be admirable; would expect dredged material to be beneficially reused; the amended designs as seen from the sea are an improvement and are sufficiently distinctive.*

On 27 July NFDC's Planning Committee met and gave Outline Planning approval which included 69 conditions some of which will be of interest to SPS, for example:-

- approval will be needed for the source and transport to the site of the material needed to raise the height of the land by about 1 metre.
- regarding the foul drainage, approval of sewage disposal plans will be needed before each development stage.

The developers expect to continue demolition of existing buildings this year and next, including the iconic 198m high chimney, with infrastructure development beginning in 2022. The first houses are expected to be available by 2024 and the development will continue until 2035.

It is expected that detailed planning permissions will be sought separately for each stage. SPS intend to continue monitoring throughout and to make representations whenever appropriate.


www.solentprotection.org

# Biogas

Part of Solent Protection Society's activities this year has been to investigate the efficiency of coastal Waste Water Treatment Works (WWTWs). Our research revealed that the increased level of nitrates in Solent waters is, in part, caused by the discharge of effluent from WWTWs.

Although clearly much improvement is required to waste water treatment, a substantial benefit from these plants, which have been developed since the 1970s, is the capture of Biogas which is as a "green" fuel. The capture of biogas is a great benefit as not only is it a free green fuel but it also prevents the release of methane which has a global-warming potential 25 times more potent than carbon dioxide.

So Biogas is a renewable energy source, mainly consisting of methane and carbon dioxide, created by the anaerobic fermentation by bacteria of organic waste containing carbohydrates. Biogas can be produced from many sources of raw materials such as agricultural waste, municipal waste, plant material, sewage, green waste and food waste.

A **Biogas Plant** is an anaerobic digester that treats farm waste and energy crops. A Biogas Plant can be fed with energy crops such as maize, silage or biodegradable wastes including sewage sludge and food waste. Using anaerobic digesters, (air-tight tanks with different configurations), the micro-organisms transform biomass waste into biogas and digestate. Digestate is the remaining inorganic matter not transformed into biogas which can be used as an agricultural fertiliser.

Higher quantities of biogas can be produced when wastewater is co-digested with other residuals such as that from the dairy, sugar, and brewery industries. For example by mixing 90% of wastewater from a beer factory with 10% cow whey, the production of biogas can be increased by 250% in comparison to the biogas produced solely from brewery wastewater.

There are four large Waste Water Treatment Works operated by Southern Water in the Solent area, at Budds Farm Havant, Millbrook Southampton, Peel Common near Fareham and Woolston Southampton. Southern Water is increasing its capacity to generate electricity from biogas with the installation of new Combined Heat and Power (CHP) engines.

We welcome these cost effective developments which will no doubt assist the UK in meeting its reduced $CO_2$ targets.

*Digestate as fertiliser*



# The Benyon Review:

## Will 'Highly Protected Marine Areas' be introduced to the Solent?

When Marine Conservation Zones and Marine Protected Areas (MCZs & MPAs) were first introduced under the Marine and Coastal Access Act (2009), there was a requirement to designate scientific control areas within each bio-geographical area. Termed "Reference Areas", these zones were designed to represent the ecologically fittest examples of each vulnerable species or habitat, listed as "threatened or declining" by the OSPAR Commission* (see below) and to provide a baseline example of what could be achieved in a specific geographical area. However, as virtually no habitats remain untouched or unchanged by man within our busy North Eastern Atlantic coasts and seas, the designation of Reference Areas was considered impractical. The project needed rethinking.

To ensure the integrity of the MCZ/MPA project, there remained the practical need to provide the scientific community with a network of control habitats. An independent review, chaired by the former Defra fisheries Minister Richard Benyon, recently studied the issue. The Benyon Review was published on 8th June 2020, and can be found on www.gov.uk.

In brief, the Benyon Review recommends the introduction to English waters of new conservation areas called Highly Protected Marine Areas (HPMAs). They would be designed to meet the difficulties of providing higher levels of protection for vulnerable habitats and species under the complex and pressurised conditions of our modern coastal regions.

Regulation is likely, for example, to involve the disallowance of commercial fishing, construction, dredging, sewage discharges, dumping, littering, anchoring and other activities incompatible with habitat health and recovery. HPMAs would not be total no-go areas so non-damaging levels of activity and recreation such as canoeing, or dinghy sailing would be allowed where appropriate.

As with other Marine Protected Areas, HPMAs would be designated on ecological principles and would be intended to assist in the recovery of marine ecosystems in English waters, allowing vulnerable habitats such as seagrass and maerl beds to flourish undisturbed. An ecologically healthy HPMA could provide nurseries for young fish and a safe haven for other marine species, creating a reservoir of species which would seed the locality, while increasing biodiversity and enriching local fisheries.

*Maerl bed*

Should HPMAs be designated, the need for compliance with higher level of management, regulation and enforcement would require early and regular engagement with stakeholders, hopefully resulting in voluntary approaches and codes of conduct. It would also require commitment and financial support from the government.

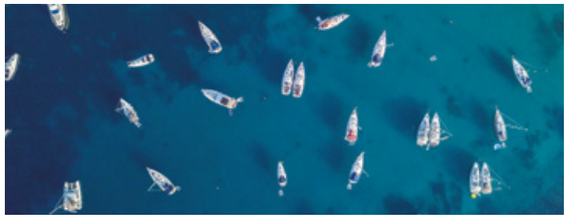
The review panel has recommended that pilot sites should be introduced, covering a range of different marine environments, both inshore and offshore and geographically spaced. It is estimated that five pilot sites will be required to fulfil these requirements. It is possible that one may be in Solent waters.

*OSPAR is the UN Convention for the Protection of the Marine Environment of the North East Atlantic. It is the mechanism by which 15 governments (including the UK), and the EU co-operate to protect the marine environment of the North East Atlantic. It is worth looking at their website:- www.ospar.org

# Seagrass and Recreational Yachting

The Solent is now centre-stage in an important new initiative, led by Natural England, to find ways to protect critically endangered Seagrass Meadows. The Life Recreation ReMEDIES project (**R**educing and **M**itigating **E**rosion and **D**isturbance **I**mpacts (**E**) affecting the **S**eabed) will particularly focus on the threats raised by the mooring and anchoring of recreational boats. Five sites have been chosen along the south coast for the study, the largest and busiest being the Special Area of Conservation, **Solent Maritime**. It includes areas of Chichester Harbour, Langstone Harbour, the stretch of Coast between Stansore Point and Hurst Castle, and that between Osborne Bay and Yarmouth on the Isle of Wight.

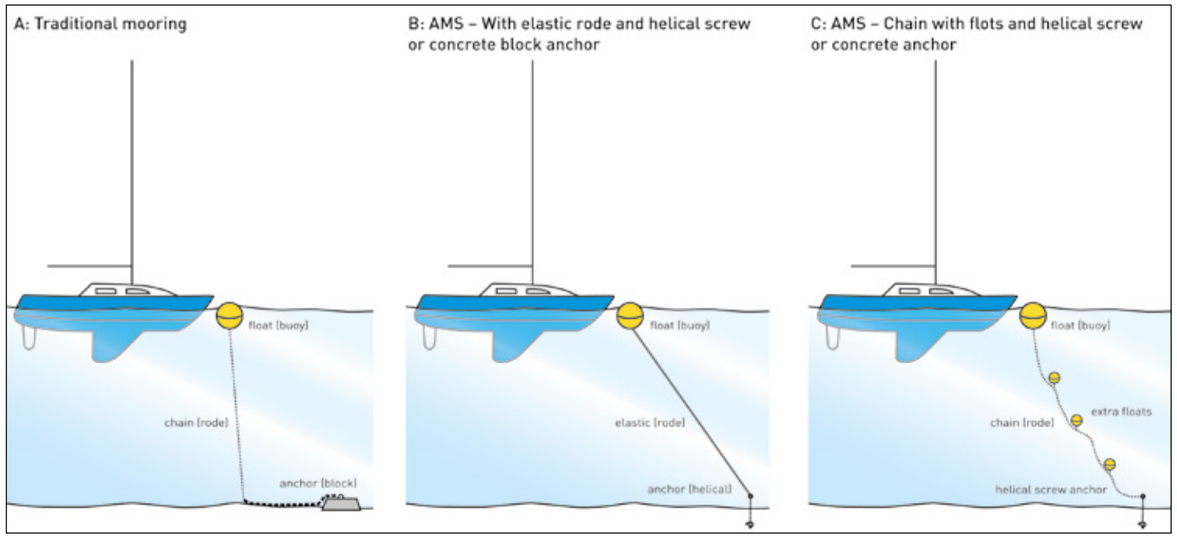
Boat owners are learning what ecologists have known for years, that seagrass meadows are highly important; they stabilise the seabed, absorb carbon, slow climate change and are the natural habitats for a plethora of marine animals, algae, rare seaweeds and are nurseries for many of our commercially valuable fish. They buffer wave energy, reducing erosion of our coastline, always a concern in the Solent. The evidence shows that traditional buoyed mooring chains scour deep abrasions in the sediment, thereby destroying the habitat. Recovery is slow and difficult as the scar will often fill with debris rather than allow the sediment to settle to its previous depth, thus enabling the rhizomes and root systems to re-establish. Evidence of long-term damage to the seabed from anchoring is less apparent but the random nature of the fall of the anchor and chain, whilst not scouring the sea-bed, will 'harrow', typically, 40 square metres over the rise and fall of a tide. Seagrass beds flourish in relatively shallow, sheltered bays and alas, enjoy the same merits that make for a good anchorage!



For a generation now, Advanced Mooring Systems (AMS) have been trialled around the world, particularly in North America and Australia. The outcomes have been mixed. The options have usually been different adaptions of a helical screw into the sea floor, rather than a concrete block or an anchor, together with a floating rode, either a chain whose weight is supported by small floats or one made of synthetic elastic or rubber. All of these have proved to work better in waters with a lesser tide range and moderate wave depth. There is no 'one size fits all' with AMS; they need to be designed to cope with the specific conditions of the site in question. They are expensive to make and need regular maintenance; the synthetic materials do not weather well and organisms are prone to grow in between the fibres and weaken the elastic. The need for reliability of the installations is emphasised by the high value of the vessels using them and the Insurance implications.

The ReMEDIES project sets out to square the circle by finding solutions to all forms of anthropomorphic damage to Seagrass, exploring the most effective means of preventing it, and then seeking the co-operation of the recreational boating community. To that end The Royal Yachting Association and its environmental programme, The Green Blue, who along with the Ocean Conservation Trust and the Marine Conservation Society are partners in the Project, are working with many local stake-holders to identify their needs.

Persuading chart makers to plot the Seagrass beds in question on Marine charts is an early initiative already under the microscope.



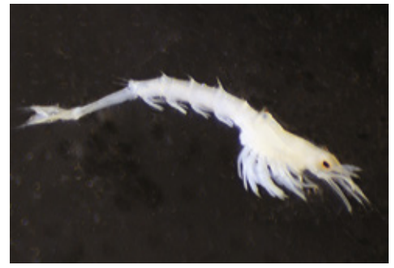



# Planktonic Monsters of the Solent

The waters of the Solent and Southampton Water hold a rich planktonic flora and fauna. Plankton comprise a wide range of organisms which live at least part of their lives drifting in the water column. Their size ranges from that of a single bacterium to a huge jelly fish the size of a dustbin lid or larger. This article will focus on some of the small animals that can just be seen with the naked eye, but which under the microscope reveal themselves to be remarkably odd-looking monsters which would be quite fearsome if they were the size of a cat. Included in this article are species observed and photographed over the last year in plankton samples collected along Southampton Water and the Solent.

Southampton Water plankton includes millions of larvae of crustaceans which, as adults, live on the sea floor as crabs and prawns. Their larvae can be remarkably odd. For example, the predatory larva of the mantid shrimp, *Meiosquilla desmaresti*, is like an aquatic praying mantid, with large eyes held away from the body on straight bars. This species is uncommon in British waters so the presence of larvae in Southampton Water suggests the Solent holds an important population. Another odd crustacean larva is the burrowing prawn, *Axius stirhynchus*. The larva has a series of defensive spines along its back. This species is also quite rare in British waters but is commonly observed in the Solent plankton. A far more abundant crab species, with a remarkable larval stage that takes defensive spines to the ultimate extreme, is *Pisidia longicornis*, the long-clawed porcelain crab. In early summer these larvae are remarkably abundant in the plankton.

*Stomatopod larva of the mantid shrimp, Meiosqilla desmaresti*



*Larva of the burrowing prawn, Axius stirhynchus observed in the Solent.*

*The larvae of Pisidia longicornis, the long-clawed porcelain crab, photographed from Southampton Water*

*The skeleton shrimp, Caprella mutica, an invasive species now common in Southampton Water*

*The pycnogonid or sea spider, Ammothea hilgendorfi, which is now commonly observed in the plankton of Southampton Water*

*Female (above) and Male (bottom) Myrianida edwarsi, a planktonic polychaete worm common in the Solent*

Each year some odd shaped creatures, which normally live on the sea bed enter the plankton. Possibly this is when they are seeking a mate or when they are in search of new habitat. One of these is the skeleton shrimp, *Caprella mutica*, which, only recently, entered our waters from Japan probably on the hull of shipping. The head is on the left of the image supported on a highly extended neck. Another invasive species commonly observed in our plankton is the Pacific pycnogonid or sea spider *Ammothea hilgendorfi*. It is surprising that such a slow-moving animal is so common in the water column. It has recently become one of the more abundant invasive species in our waters.

As a final example of the odd animals which are encountered it may come as a surprise that there are planktonic worms. One of the most remarkable in the Solent plankton is *Myrianida edwarsi*. The males and females look quite different so images are included of both sexes. The females carry the eggs.

*Images Peter Henderson*

# Dilution is the Solution to Pollution – *Or is it?*

### A little history to explain why we are still in a mess

We all complain about pollution and think that it should be avoided. In earlier times this was simply done by dilution, however some form of waste disposal becomes more important as population and industrial enterprise increases. Here is a little history which may explain the dilemmas faced by the various agencies involved, and ultimately by Society.

The Romans built sewers in their city but there was no treatment system so it was basically a means of removing the pollution from the city where it was diluted. Until the 1800's there were few places where there was an organised sewerage treatment system.

As cities grew as part of the industrial revolution, sewers, initially open drains then piped systems, were constructed in a haphazard way and living conditions, particularly for the poor, became very unsanitary. There were numerous outbreaks of Cholera and following a serious outbreak in London in 1831, Dr Jon Snow demonstrated that this was caused by pollution of drinking water from sewage.

Before 1857 there was little requirement for anyone to take responsibility for the pollution of rivers or the sea in Britain, and they were simply used to dump any waste. The Public Health Act 1875 was passed which made Local Authorities responsible for sewers and drainage within their Areas.

*The Great London Stink cartoon*

There followed legislation and engineering works that are still the basis of much of the present-day system. In London the "Great Stink" of 1858 resulted in Joseph Bazalgette's construction of the London Sewers many of which are still in use today. Although a major achievement for the time, they simply took the problem downstream, outside the Metropolitan boundary, where raw sewage was discharged to be diluted in the Thames Estuary.

Similarly, locally in Portsmouth in 1865, council sewers were constructed and as the land is low-lying a steam pumping station was built at Eastney to pump essentially raw sewage into Langstone Harbour.

At this time the words "Sewer" and "Drain" were almost interchangeable and the system was designed to dispose of all "waste water" – rainwater, domestic and industrial effluent, and so they were all mixed in a single system. It didn't really matter which as it would all end up in the sea or river to be diluted rather than treated.

As in England the prevailing wind is from the West, the outfalls of the sewers for coastal towns were usually constructed downwind in the East, which is why for many towns the West End is the wealthy area and the East End the poorer sector, this can be seen in Southampton and even in Cowes.

However this combined sewer system has severe disadvantages – in dry conditions the flow (Dry weather flow – DWF) is only waste water, mainly domestic, but when it rains, particularly sudden heavy showers, the volume can increase sometimes a hundred fold in a matter of minutes. This means that the pipework must be designed for the rainwater flows and this makes treatment very difficult.

In older residential developments most are combined systems, in which the rainwater and wastewater are mixed, further adding to the difficulty of separation. In the last 50 years or so new developments have separate systems but often have to become combined once they meet the main sewer.

In 1898 a Royal Commission was set up to investigate methods of treating sewage consistent with public health. The commission continued to meet until 1912 and its findings formed the basis of legislation until the 1974 Water Act. One of the main findings was for sewage works to meet "Royal Commission Standard" (i.e. 20mg/l Biochemical Oxygen Demand (BOD) and 30mg/l for suspended solids – known as "30:20"). However, this standard, which was set to avoid unreasonable cost, only applies to a flow of 3 x DWF. In excess of this flow it is permitted to discharge diluted sewage directly to the watercourse, either from the works or from a Combined Sewer Outfall (CSO) – in effect an overflow system before the sewage gets to the treatment works.

Things didn't change significantly until two further Acts, the 1973 Water Act, which transferred responsibility for sewage disposal from more than 1300 councils to the 10 newly formed Water Authorities. The 1974 Control of Pollution Act which made the "30:20" standard a minimum and introduced the concept that the standard should be set according to the environmental requirements of the receiving watercourses.

During this time, it was still normal practice for Coastal Towns to discharge raw untreated sewage directly to the sea via "Short Sea Outfalls" – generally just below low water. However, in the 1970's a new concept of "marine treatment" became common – this is not exactly treatment in any meaningful way but taking the sewage further off-shore by means of "Long-Sea Outfalls". These were built in many locations and locally at Eastney and Sandown, so the sewage was diluted by the sea before it reached bathing beaches.

Although not an effective solution, as standards increased due to improved environmental understanding and European directives, these Long Sea Outfalls have continued to be used now to discharge treated sewage from new works built inland.

The next major change came in 1989 with Water privatisation when the ten Regional Water Authorities were sold off to become the private Water Companies we know today (actually they are mainly Sewage Companies, but perhaps that would have made it more difficult to sell shares), and the regulatory and river management agency became the National Rivers Authority (NRA).

The Environment Act 1995 merged the NRA with other environmental regulators to become the Environment Agency but made little change to the regulatory regime for discharge to rivers and the sea.

So under the current system the (privatised) Water Companies have a duty to follow all the Environmental Regulations, which are mainly European Directives brought into English law but are constrained in how much they can spend by OFWAT, who have to balance the cost to the customer, via our water bills, with the environmental improvements.

So rather sadly we conclude that Legislation and Money are the only Solution to Pollution.



# Silting in Bembridge Harbour is a serious problem:

## Rebuilding an old groyne may help

*'The sand is building a large island in the centre of the harbour'*

Bembridge is a popular place for visitors both afloat and on land. It has a rural character and an atmosphere of great charm. On a beautiful evening, with the sun setting in the west, the tinkling of the yachts' rigging and the call of the birds on the mudflats, it is hard to imagine change. It would be wonderful to fix it all in aspic but unfortunately a number of factors – physical, historical and economic are inexorably affecting the future of this lovely harbour.

Sand is entering the harbour faster than it can be taken out on the tide. The future of boating, whether dinghy sailing, yachting or for the small fishing fleet, is at risk from silting.

Until the 1870s Bembridge Harbour, known in those days as Brading Haven, was a much larger estuary, reaching up as far as the quay in Brading, which is dated to Roman times. Bembridge village was merely a hamlet with a coastguard station at the entrance.

In historical times a number of efforts were made to drain the upper reaches of the estuary, culminating in the building of the embankment (completed c1870) and the later addition of the railway line. The embankment and the railway boosted the local economy, but it also greatly decreased the size of the harbour.

The reduced volume of harbour water changed the pattern of the tidal prism, and with much less water to run in and out of the harbour, there was less power in the tidal flow to carry sediment out of the harbour – the chief cause of the silting of the harbour.

Sediment enters the harbour from two sources. Some fine muds come down the East Yar River to settle at the west end of the harbour, but the main concern is the sand coming in through the entrance of the harbour on the flood tide. While the base of the spit running from Bembridge Point towards Bembridge Fort is considered to be stable, the upper layer is mobile. Wave action, a north-westerly longshore drift and the occasional south-easterly gale shift this upper layer of sand towards the entrance where it is transported into the harbour on the tide. The reduction in the tidal prism means that the ebb tide is not sufficiently strong to transport all the sand back out. The sand is building a large island in the centre of the harbour; it already emerges at half-tide and is increasing in size.

In a geological timeframe, estuaries are transient landscapes. The usual pattern is that unless there is major geomorphological or climatic change, estuaries eventually silt and fill in. Bembridge Harbour is no exception. The Brading Haven estuary dates from about seven thousand years ago, when the climate warmed sufficiently after the last fillip of the ice ages and water from melting glaciers raised sea level, causing the Eastern Solent to fill with water.

In order to continue the current usage of the harbour, it is essential that there is a reduction in the ingress of sand at the entrance or the harbour will silt and become land.

*Bembridge Point Groyne*

There is a popular and active local initiative to rebuild the collapsed groyne on Bembridge Point. Plans have been drawn up and money is being raised successfully. The rebuilt groyne would assist in controlling sediment transported along the beach and into the harbour, reducing the bulk of the ingress and buying time for the current usage of the harbour. Rebuilding this groyne is a complex project as it must be set deep into the ground in order to withstand the great forces involved. The cost of the project is estimated to be in the region of £200,000. Once rebuilt, the groyne will need regular attention with the removal of sand from the SE side. Annual maintenance dredging will remain essential. It is fortunate that the Harbour Authority was able to dredge the channels this summer despite Covid restrictions. It should be remembered that Bembridge Harbour is an SSSI and part of the Solent European Marine Sites (SEMS) mosaic of conservation sites so any dredging of the centre of the harbour, including the removal of the sand island, is at the discretion of Natural England.

The new groyne will not solve the whole siltation problem, but it will help; for locals and harbour users, doing nothing is not an option and we wish the project well.

# The Mission Statement of the Solent Protection Society is:-

**Conservation costs money and requires the supportive will of both government and people. Such diverse and valuable conservation areas as those around Bembridge Harbour need constant vigilance. While being true to our Mission Statement, the Solent Protection Society believes in encouraging the socio-economics of an area, thereby enabling an element of local self-help in conserving these special areas against both inappropriate development and against natural forces such as erosion and silting.**

**SPS Council members are out and about all around the Solent, and we are handy with a camera to assess potential damage. The Solent Protection Society Council members are ready to raise issues with relevant Local Authorities and Government Agencies in the case of potentially damaging development or actions.**

**We remain vigilant. Please help us to continue our work.**

> "The Solent Protection Society exists to ensure the ecological and environmental well-being and wise management of the Solent area, its natural beauty and amenities, so that these may continue to be enjoyed by present and future generations."

Solent Protection Society

## DONATIONS

To enable us to continue our important work, the Solent Protection Society need more funds over and above our modest membership subscriptions. Please consider making a donation now to help us to protect the Solent for future generations.

### GIFT AID – HAVE YOU COMPLETED A GIFT AID FORM?

Under the Gift Aid scheme, for every £1 you give, either as a subscription or donation we are able to recover 25% from the Inland Revenue. It does not cost you anything – you simply declare that you are a taxpayer. If you have not already completed a declaration would you now be good enough to do so by completing this coupon, cutting it out and sending it to The Secretary, Solent Protection Society, Sandy Down Cottage, Lower Sandy Down, Boldre, Lymington, Hants SO41 8PP.

### PLEASE TREAT ALL MY SUBSCRIPTIONS/DONATIONS UNTIL FURTHER NOTICE AS GIFT AID.

I confirm that I pay an amount of income tax/capital gains tax at least equal to the tax that Solent Protection Society (registered charity No. 1154317) will reclaim on my subscription/donations and on all other donations to charities or community amateur sport clubs.

### GIFT AID COUPON

Date...../...../2020 Postcode.....

Signature.....

Name.....

### LEGACIES – PLEASE THINK OF THE SOCIETY AND ITS WORK

In addition to the very welcome donations over past years, from time to time we have also received very generous bequests from those who have had an interest in what we have been doing. If you are updating your Will and would like to remember the Society this would be appreciated. Equally if you have already made a Will you can make a provision for a bequest either by executing a formal codicil to the Will or by leaving a letter of direction to your executors.

To join the Society please contact:
The Secretary, Solent Protection Society, Sandy Down Cottage, Lower Sandy Down, Boldre, Lymington, Hants SO41 8PP
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