

Solent Maritime SAC Condition Assessment and improving water quality in the Solent



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- Solent Maritime SAC condition assessment
- Impacts of nutrients
- Sources of nutrients
- Measures currently being taken to reduce nutrients
- What can SEMS group do to help?

Solent Maritime SAC



- **Solent Maritime SAC Condition Assessment**
- Summary assessments, together with the qualifying sub feature assessments, are given for the site's marine qualifying features:
 - Estuaries
Unfavourable - **water quality nutrients**; reduced extent of saltmarsh
 - Mudflats and sandflats not covered by seawater at low tide
Unfavourable - **water quality nutrients**
 - Sandbanks which are slightly covered by sea water all the time
Unfavourable – **water quality nutrients**, TBT, slipper limpet, infaunal index
 - Coastal Lagoons
Favourable - but decline of lagoonal cockle and non native species

Impacts of nutrients – Macro algae growth



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- **Most clearly evidenced by lush green macroalgae growth**
- **Leading to an impact on invertebrates and bird feeding behaviour**

Impacts of Nutrients – Birds, Seagrass beds and Saltmarsh



- **Declines in shelduck numbers**
- **Wider effects on the functioning of estuarine ecosystems**
- **Saltmarsh and seagrass loss**



Impacts of nutrients– recreational users, tourism and fisheries

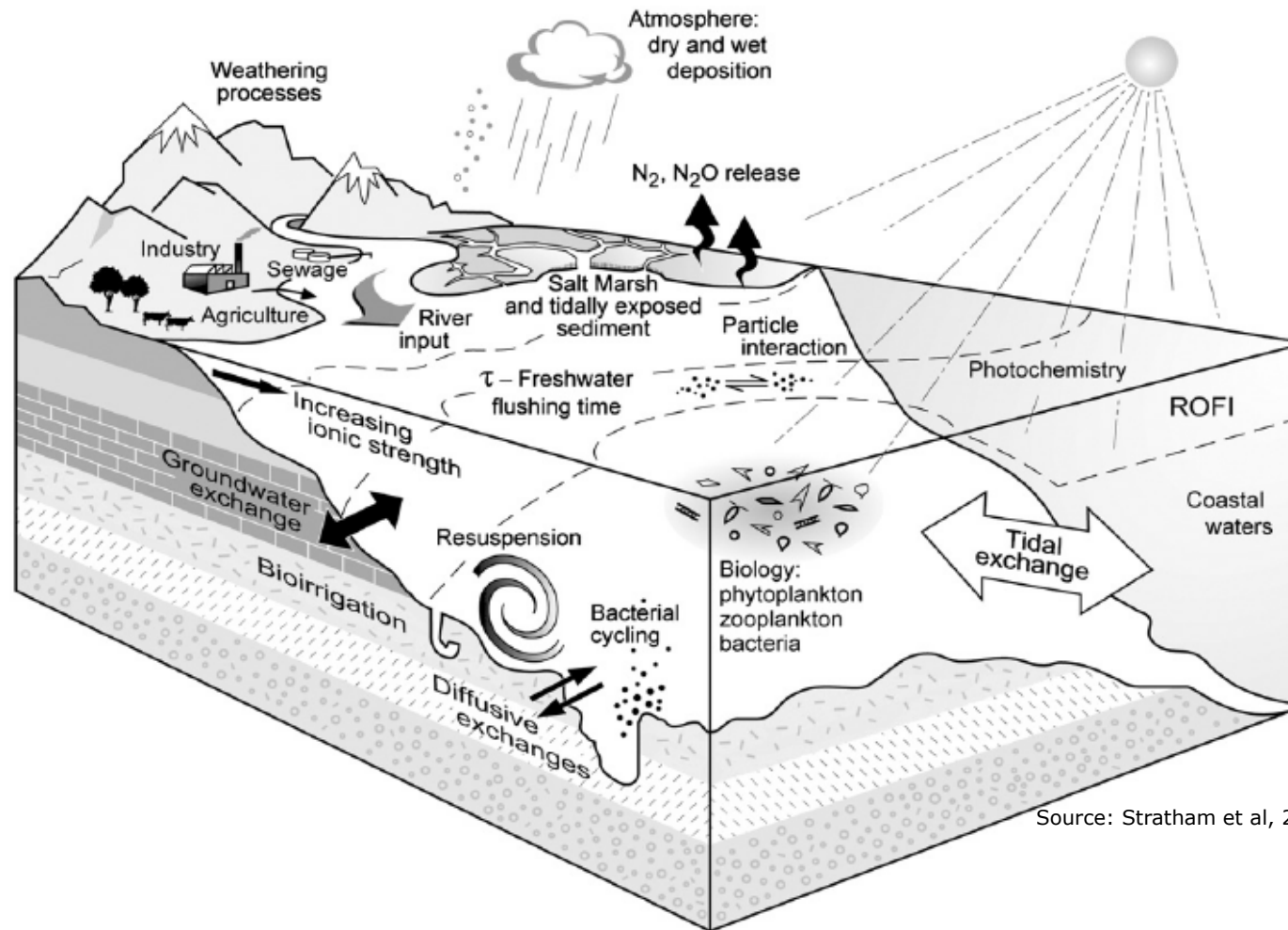


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- **Bad smells effecting tourism**
- **Entanglement in boat propellers**
- **Impacts on shellfisheries**

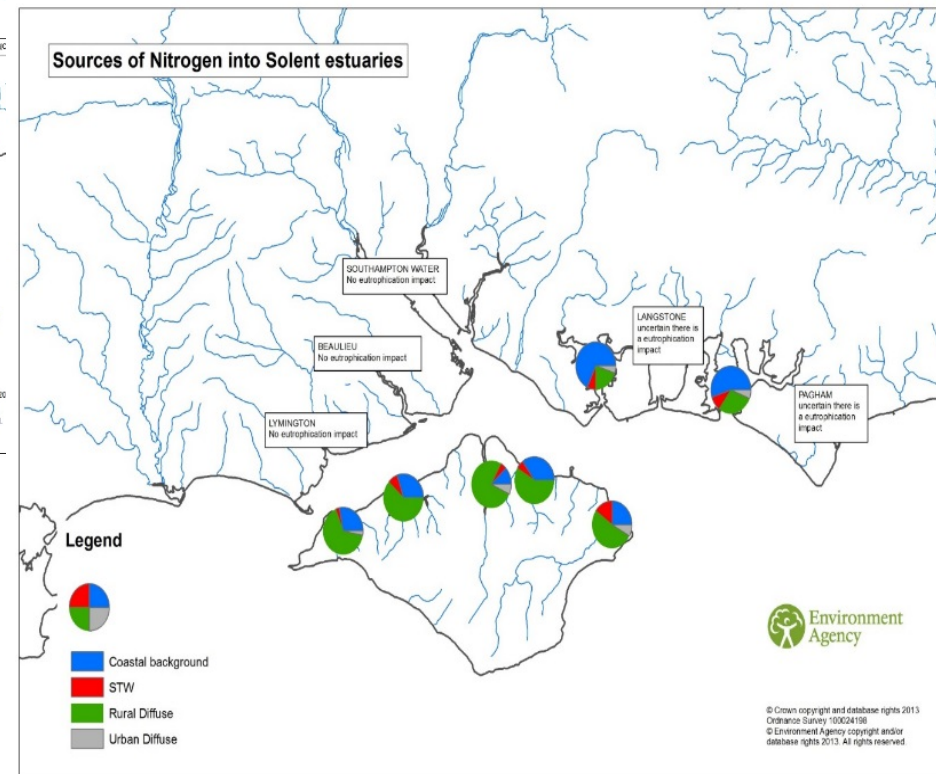
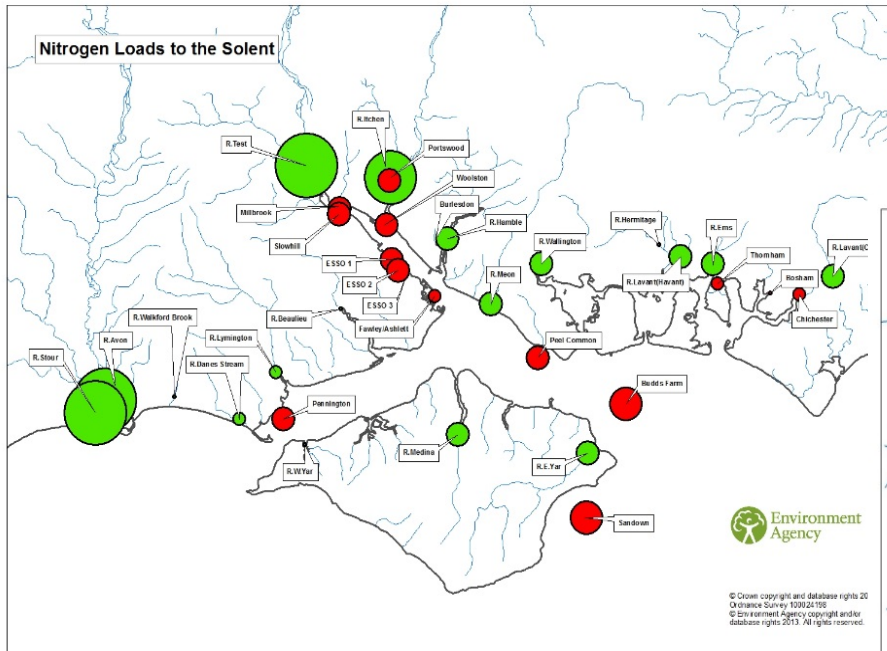
Catchment overview of the sources and movement of nutrients



Source: Stratham et al, 2012

Fig. 1. Processes and exchanges influencing the macronutrients Si, P and N in estuarine systems. ROFI = Region of Freshwater Influence.

Source of nutrients



Management Measures



- Diffuse Source regulatory measures
- Point source regulatory measures
- Point source voluntary measures
- Diffuse source voluntary measures



Natura 2000 – Judicial Review



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Timescales for recovery



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What can SEMS do? Benefits of tackling urban diffuse pollution



- Multitude of in combination effects can be significant and more so in some locations
- A reduction will become transparent quicker than agricultural diffuse due to time lag through groundwater
- Other consequential benefits eg reduction of E coli (bathing water and shellfish)
- Raises awareness and understanding of this issue

What can SEMS do? Producing materials to improve awareness



Poole Harbour Catchment Initiative

From Blue to Green: the problem of nutrients and seaweed in Poole Harbour

What is causing the green seaweed problem in Poole Harbour?

A combination of wastewater from sewage treatment works and drainage from agriculture has led to an excess of plant nutrients (especially nitrogen) entering the Harbour. Over the last 50 years the amount of nitrate-nitrogen from the catchment has more than doubled, from under 1000 tonnes to well over 2000 tonnes.

The nutrients cannot be seen in the water but have reached critical levels, encouraging thick mats of green seaweed to grow in warm, sunny weather conditions. When this happens, large areas of green seaweed can be seen around the Harbour foreshore.

Why is Poole Harbour such an important place?

Poole Harbour is one of the largest natural harbours in the world, renowned and protected for its outstanding landscape, wildlife and fisheries. A place of contrasts, including the busy Poole town centre and port on the north shore, the nationally important landscape of the Isle of Purbeck and the scenic islands of the south shore.

The harbour is fed by the Frome, Piddle, Corfe and Sherford rivers which drain a catchment covering 820km².

In Dorset, the harbour is an important recreation area and open space for people, a tourist attraction, a site for abundant wildlife whilst supporting a nursery ground for fisheries and valuable commercial shellfisheries. It is a place valued by many people.

Can we control the growth of seaweed?

When seaweed collects close to the shore it can create odours while it decomposes. This is an unpleasant but temporary problem and in most situations the preferred option is to allow the seaweed mats to break down naturally.

Removing this seaweed could be one solution in specific situations such as on the rocky Poole shoreline. This is expensive and access for machinery is difficult. Elsewhere, on saltmarsh and mudflats, removing the seaweed could cause more harm than good, releasing nutrients stored in the mud and disturbing the feeding and breeding habitat of the harbour's important bird species.

To reduce seaweed growth we need to reduce the nutrients coming from the whole catchment to levels recorded prior to the early 1980s. This is challenging, not least because there are historic nutrient inputs from past wet farming improvements. These may take many decades to drain through the 'shallow' downland in the catchment. Changes in the way we manage farmland and deal with wastewater can make a big difference to the amount of nutrients entering the harbour.

Who can help solve the problem?

Everyone can make a difference to the water quality in the rivers, harbour and coast – local people, businesses and visitors can all help. Everything entering surface drains or flushed down the toilet can eventually have an impact on the quality of our water environment.

Surface water drainage systems in built up areas take untreated water into drains and then streams, rivers and the harbour. They should only carry rainwater but misuse and misconnections to this system often cause pollution. Even washing your car on the road could result in detergents being washed into the rivers and the harbour.

There are more than 13,000 blockages in the foul sewer network in the Wessex area every year; more than 60% of these blockages are caused by 'flushable' wet wipes, while the build-up of fats and down sinks can cause sewer flooding and overflows into watercourses. You can help by recycling fat with your food waste and putting all wipes in the bin, not down the toilet.

For more information on Catchment Initiatives in Dorset please visit: www.dorsetcatchments.co.uk

- Improve public awareness of the nutrient issue and algal mats
- Collate images and information on impacts on habitats and other possible consequences for CSF officers to convey to farmers

What can SEMS do? Taking action to protect your local estuary



Only Rain Down the Drain

Did you know the street drains outside your home and the surface water drains on your property are only designed to take rainfall away and lead, untreated, straight to Poole Park lakes and lagoon?

It is an important site for wildlife which can be affected by poor water quality and people also enjoy the site for recreation.

We need your help to maintain and improve the water quality in Poole Park lakes and lagoon for people and wildlife.

This project has been supported by the Heritage Lottery Parks for People Fund.

Look out for drain markings...



What can you do to help?

Only ever let rain flow down the drain!

Join in with a Lake Drain Day Event with Poole Park Life Project.

Connect waste pipes from toilets, kitchens and bathrooms to the right drain. Visit connectright.org.uk for more information.

Use a bin for litter and cigarette butts – these can end up in the lake and cause pollution.

Don't let carwashing water run into street drains. See litterfreecoastandsea.co.uk for 'How To' tips.

Sweep up debris during building work so it does not wash down drains.

Pick up the poo! Pet poo is high in bacteria, don't let it wash down the drains.

Report any oil or chemical spill to the Environment Agency 0800 80 70 60.

Visit pooleprojects.net/pooleparklife or call 01202 261700 for more info.

- Public awareness campaigns e.g. 'Only pee, paper and poo down the loo', Dorset Litter Free Coast and Sea, 'Think before you flush'

What can SEMs do? Encouraging good practice



- Use holding tanks and sewage pump out facilities
- Fit house boats with STWs



What can SEMs do? Citizen Science



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Citizen science collection of data – e.g. Thames Outfalls safaris

What can SEMS group do to help reduce nutrients in the Solent?



Promoting Good practice

- Improve public awareness
- Collating images and information on impacts to convey to farmers
- Encouraging other to take action

Monitoring activities

- Citizen science –identifying priority areas for misconnections
- Reporting pollution - Point and diffuse sources of soil, sewage, litter, boat washings, etc.

Regulatory

- Enforcement of relevant byelaws?

Operations

- Provision of public toilets and pump out facilities for boat users