State of the Solent Edition 3: 6. Natural Resources

The two most exploited natural resources in the Solent are fish, which have been an important resource for centuries, and marine aggregates which are dredged for the construction industries.

The main aim in the Strategic Guidance for fisheries is 'to support the continued development of a sustainable fishing industry within the Solent'. A sustainable fishery is achieved when a high proportion of fish stocks are able to replenish themselves over a long period of time within a sound ecosystem, while offering stable economic and social conditions for all those involved in the fishing activity (OECD). The Solent is a mixed sea fishery and the fishing effort varies between a number of different commercial species throughout the year. The inshore waters have an important role as a nursery area for bass, with specific areas identified for protection, and for a range of other fin-fish and shellfish.

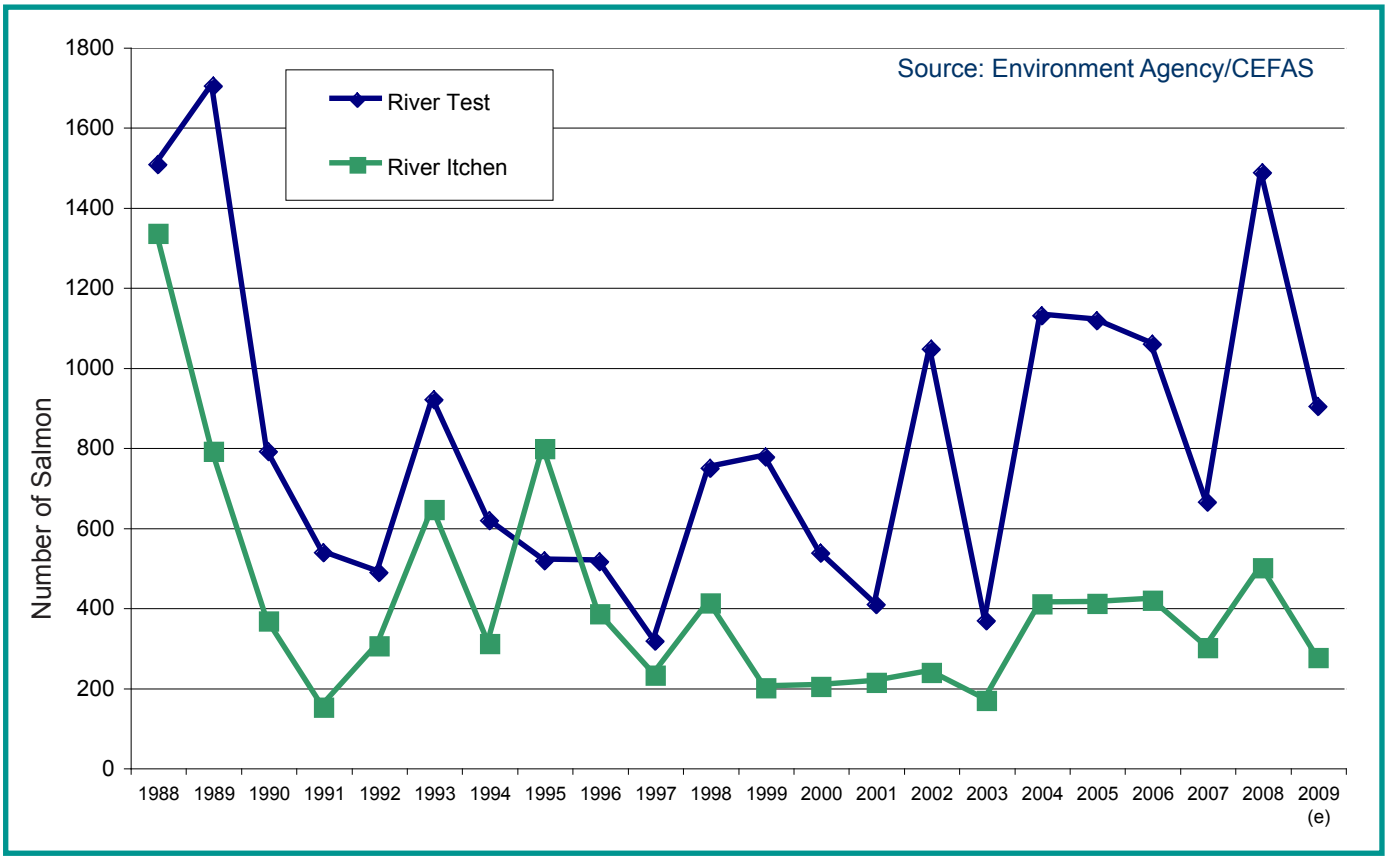
The aim in the Strategic Guidance for aggregates is 'to recognise the needs of the aggregate industry, and ensure wise management of resources, seeking integration between the offshore and onshore aspects of the industry.'

The Solent is an active focus for the aggregates industry; this activity can be divided into two functions:

- Extraction of aggregates, of which little takes place within the Solent, although there is substantial activity off the south-east coast of the Isle of Wight, and in Christchurch Bay;
- Landing of aggregates, including both marine dredged material and imported crushed rock. Landing for use on the mainland takes place at a number of wharves on the Rivers Itchen and Test, and at Portsmouth and Langstone Harbours. Marine aggregates are supplied to the Isle of Wight via wharves at Cowes and Newport.

Marine aggregates make up about 20% of the total use of aggregates in the UK. Trends in demand for aggregates are principally governed by the market responding to the construction industry, such as housing and road building. The use of aggregates for beach nourishment is a growing market.

Indicator 6.1: Number of salmon returning to the Rivers Test and Itchen



6.1 Reason for indicator selection

The main salmon fishery in the Solent is in the Rivers Test and Itchen. Salmon are under significant stress from a combination of climate change pressures, increasing development and changes in the management of the marine and estuarine environment. To flourish salmon and trout require strong river flows, high water quality, clean gravel and productive marine and freshwater environments in which to grow and feed. The eggs of salmon are at risk from being choked by silt and diffuse pollutants which settle into the river gravels Environment Agency.

The number of salmon and trout returning to the rivers to breed provides an indicator of water quality which is essential for the sustainability of the Solent's fisheries. It also provides an indication of the state of the seas where they spend much of their adult life, only returning to freshwater to spawn. The indicator is used at the national and regional levels it is one of the indicators in the State of the Environment report compiled by the Environment Agency (EA).

6.1 What the indicator shows

The data for the number of adult salmon returning to the rivers Test and Itchen comes from an annual report by the EA and the Centre Environment Fisheries and Aquaculture Science (Cefas) on the assessment of salmon stocks and fishery in England and Wales.

6.1 Where does the data come from?

There is considerable variation between years within the individual rivers but it does appear that the number of salmon returning to the rivers is declining. Adult counts and returning stock estimates were below average in almost all monitored rivers in 2009. Runs into freshwater over available time series show a decreasing trend on some rivers including the Itchen, no substantive change on others including the Test, but an increase on others (Cefas). Both the Test and Itchen rivers are 'at risk' or 'probably at risk' of not achieving the management objective of reaching their Conservation Limit (CL) compliance assessment.

6.1 What are the implications for coastal planning and management

Management measures to ensure that salmon stocks in the Test and Itchen are within their conservation limit compliance will continue to be implemented by the EA. Some of this work will be through the implementation of the Water Framework Directive.

Indicator 6.2: State of the main fish stock in the Solent

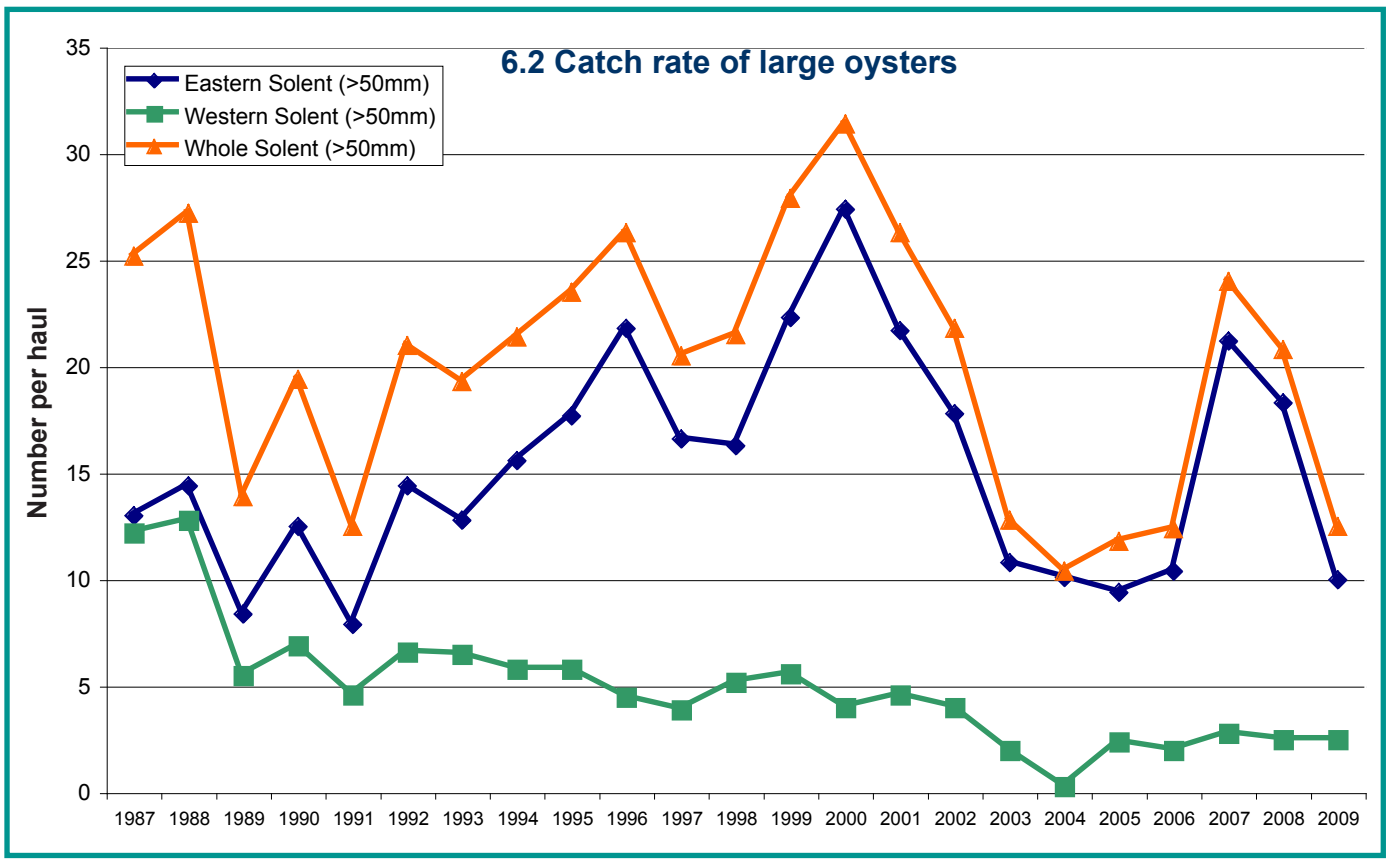
6.2 Reason for indicator selection

The main fishery in the Solent is the native oyster, currently the largest self sustaining fishery in northwest Europe. The state of this fish stock will give an indication not only of the health of the stock but also its economic importance to the Solent area.

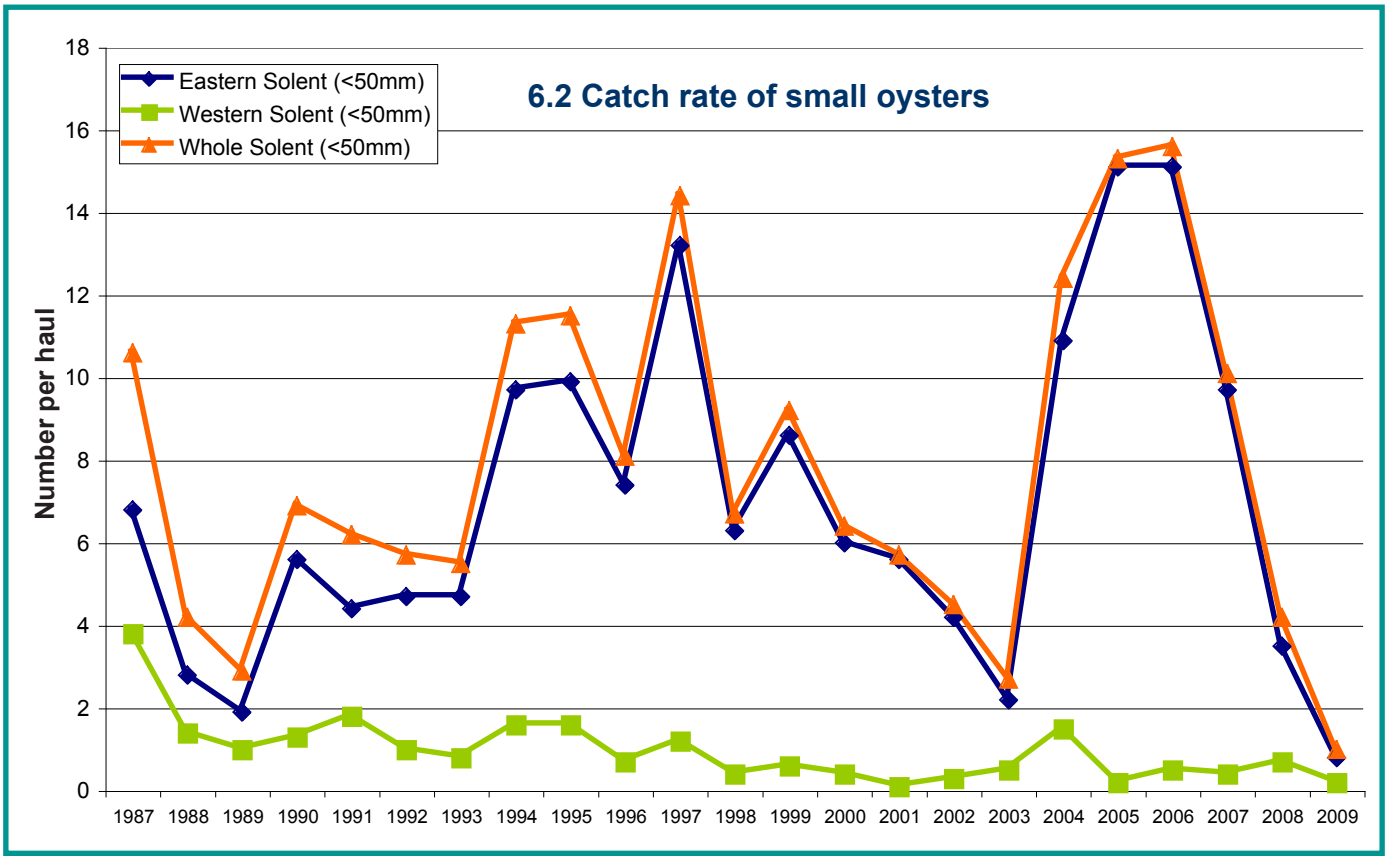
At the European level the state of the main fish stocks by species and sea area is one of the European indicators to measure sustainable coastal development. At the national level fish stocks around the UK fished within safe limits are used as a sustainability indicator for the seas, oceans and coasts.

6.2 Where does the data come from?

Cefas produce an annual report on the average catch rate per haul of oysters (Solent Regulated Fishery Oyster Stock Report 16 - 22 June 2009 Shellfish Resource Team Report No. 83). Information is given in catch rate for small and large oysters; the survey is carried out at about the same time in June annually. Average catches of oysters by size group are from dredge hauls with oysters on 14 grounds in the eastern and western Solent.



Source: Cefas



Source: Cefas

6.2 What the indicator shows

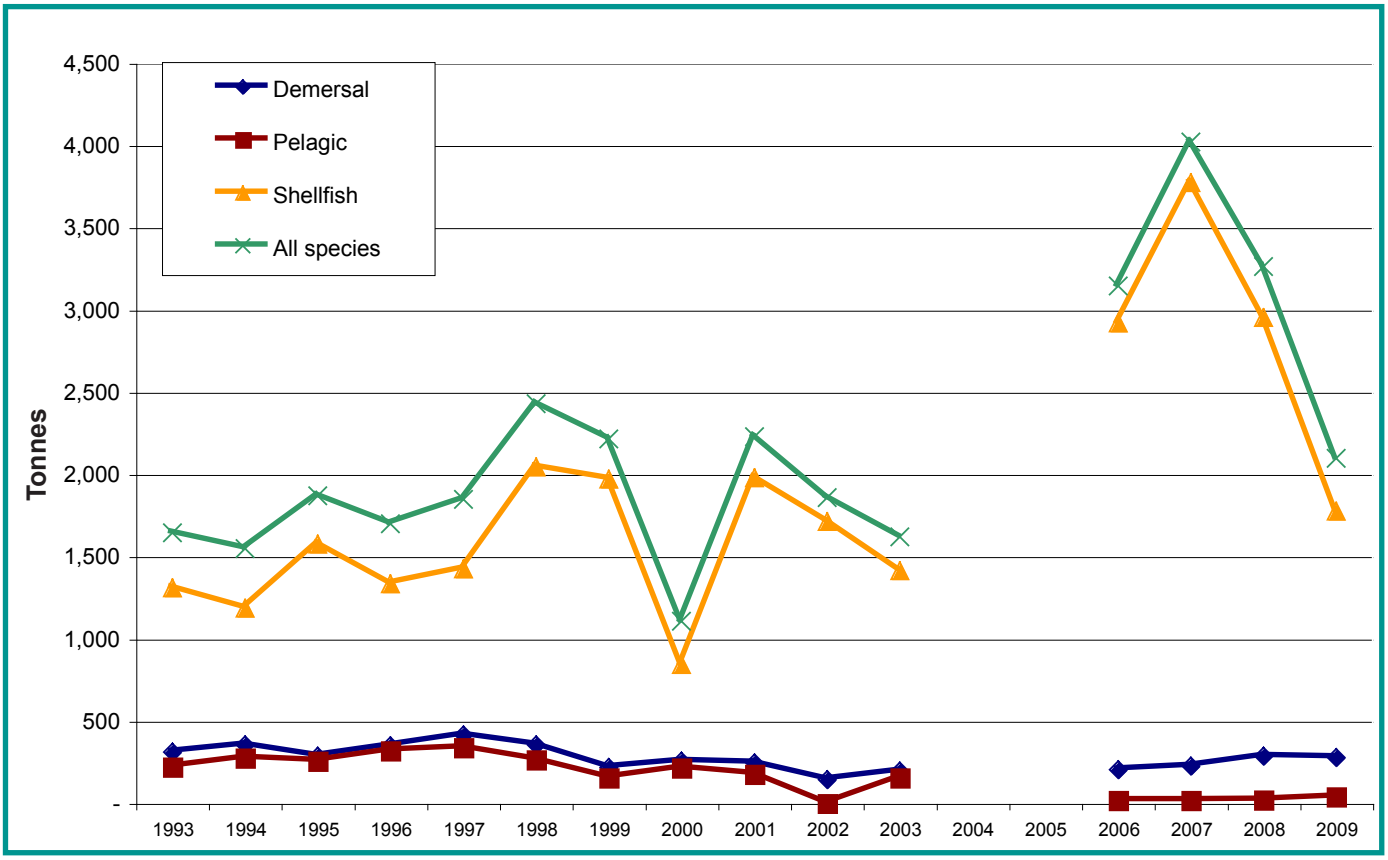
For the Solent as a whole, catch rates of large oysters (50mm and bigger) during the 2009 survey are notably lower than average for the previous 20 years. The catch rate of small oysters (less than 50mm) is also significantly lower than the 20 year average.

The conclusions drawn from the Cefas report are that in the Western Solent stocks remain at very low levels. The continuing absence of recruitment and very low catches indicate that no improvement in the fishery is likely in the foreseeable future. Yields for next season are likely to be poor and the continued decline in numbers of spat oysters observed in 2009 could be expected to significantly impact the numbers of larger oysters in the coming years. Without a successful spatfall, no improvement in the fishery is likely in the next three to four years (K. R. Vanstaen & D. Palmer, 2009).

6.2 What are the implications for coastal planning and management

The oyster fishery in the Solent is the main shell fishery in the Solent and its decline will have implications on the economy of the area and also on the fishermen who rely on it. The reasons for the decline need to be identified to try and reverse this trend.

Indicator 6.3: Total fish landings for Solent ports tonnage



Source: Marine Management Organisation

6.3 Reason for indicator selection

There are a number of harbours where fish are landed in the Solent, although not all the fish landed are from the Solent fishery. This indicator will give an idea of the economic importance of the fishing industry to the Solent. Tonnage is used as a measure rather than value, as the value is likely to vary more and be influenced by a greater number of outside factors.

This indicator is used at a European Level and the data is also recorded by the Marine Management Organisation as part of the annual UK Sea Fish Statistics report.

6.3 Where does the data come from?

The data comes from the Marine Management Organisation.

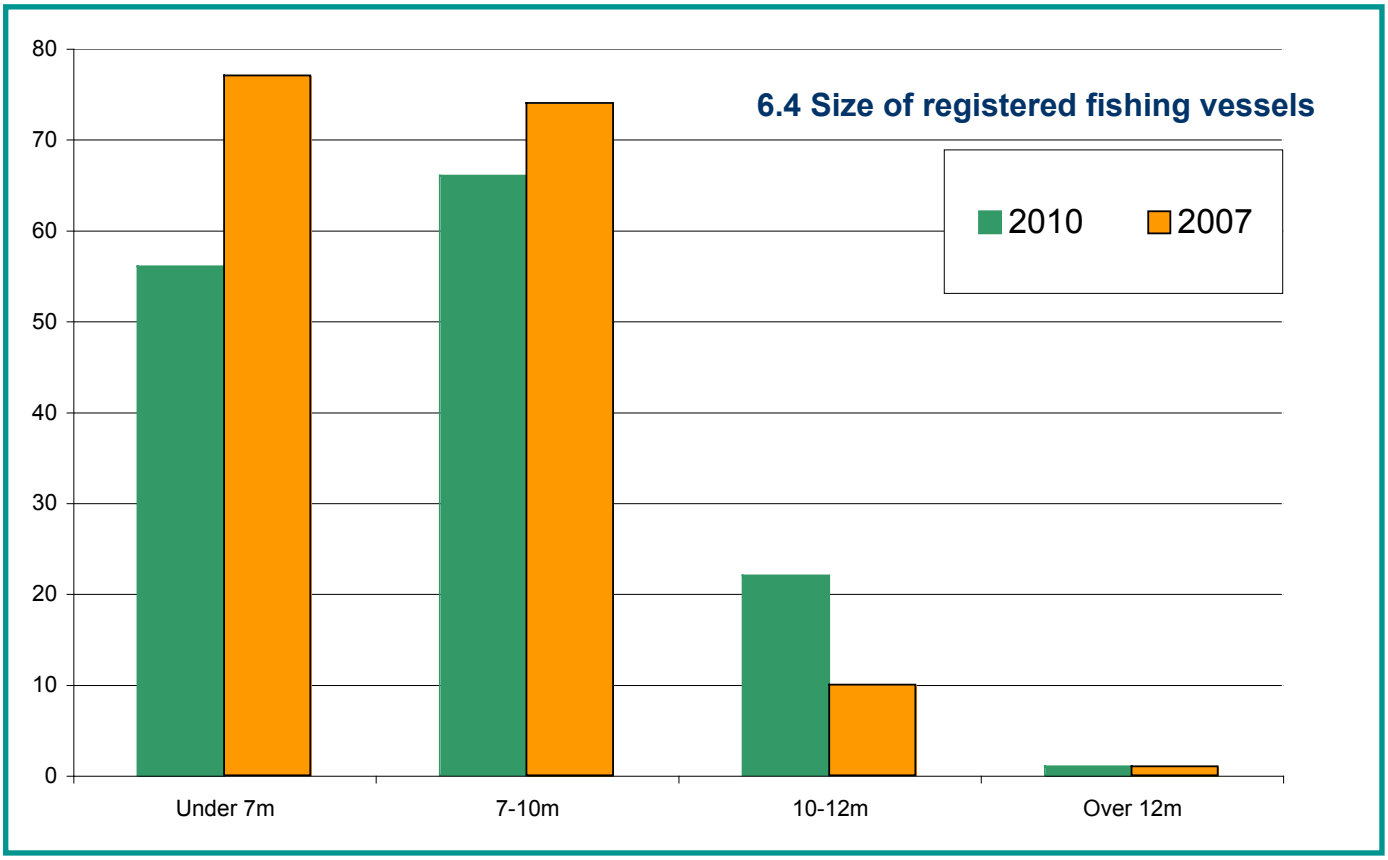
6.3 What the indicator shows

The tonnage of fish landed at the Solent's ports was fairly stable from 1993-2003. Data is missing for the years 2004 and 2005 but there was a large rise in the amount of fish, mainly shellfish, landed in 2007. This increase was not sustained and the amount landed in 2008 and 2009 has fallen. The main fish type landed is shellfish and the increase or decrease in fish landed may be linked to the amount of fish available in the Solent and surrounding areas. Indicator 6.2 (state of the main fish stock in the Solent) also showed an increase in 2007 with numbers declining in 2008 and 2009.

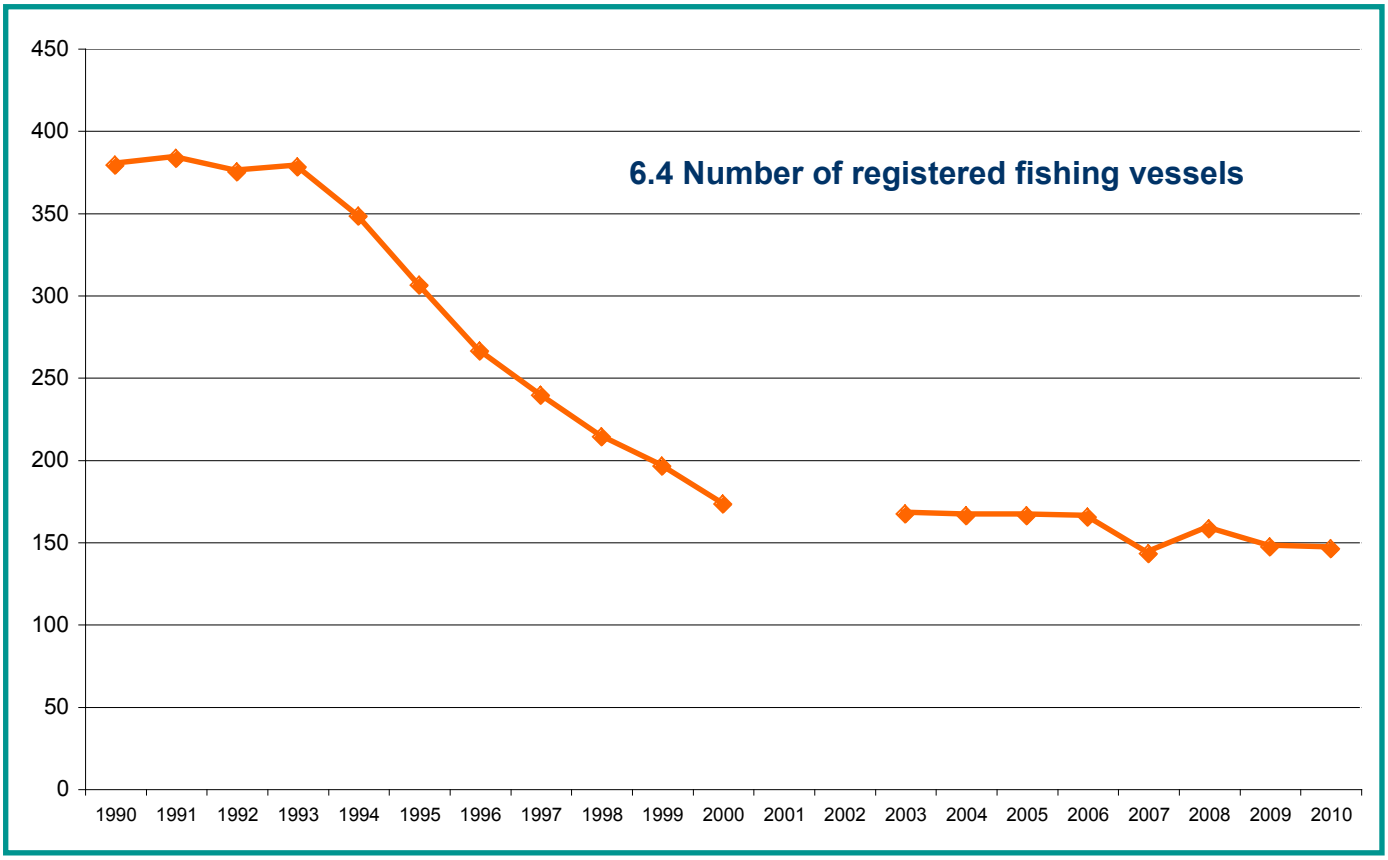
6.3 What are the implications for coastal planning and management

None identified at present.

Indicator 6.4: Number and size of registered fishing vessels in the Solent



Source: Sea Fisheries Committees



Source: Sea Fisheries Committees

6.4 Reason for indicator selection

The size of the fishing fleet (number of vessels, tonnage and power) is an important factor in managing fishing effort. Excess capacity can lead to overfishing and increased environmental pressure. This indicators will give a measure of both the capacity of the fishing fleet in the Solent and the importance of fishing to the Solent's economy.

6.4 Where does the data come from?

This data is available from the Sea Fisheries Committees who keep a record of the number and size of fishing boats registered at the harbours in the Solent. At this time data on the average power is not available.

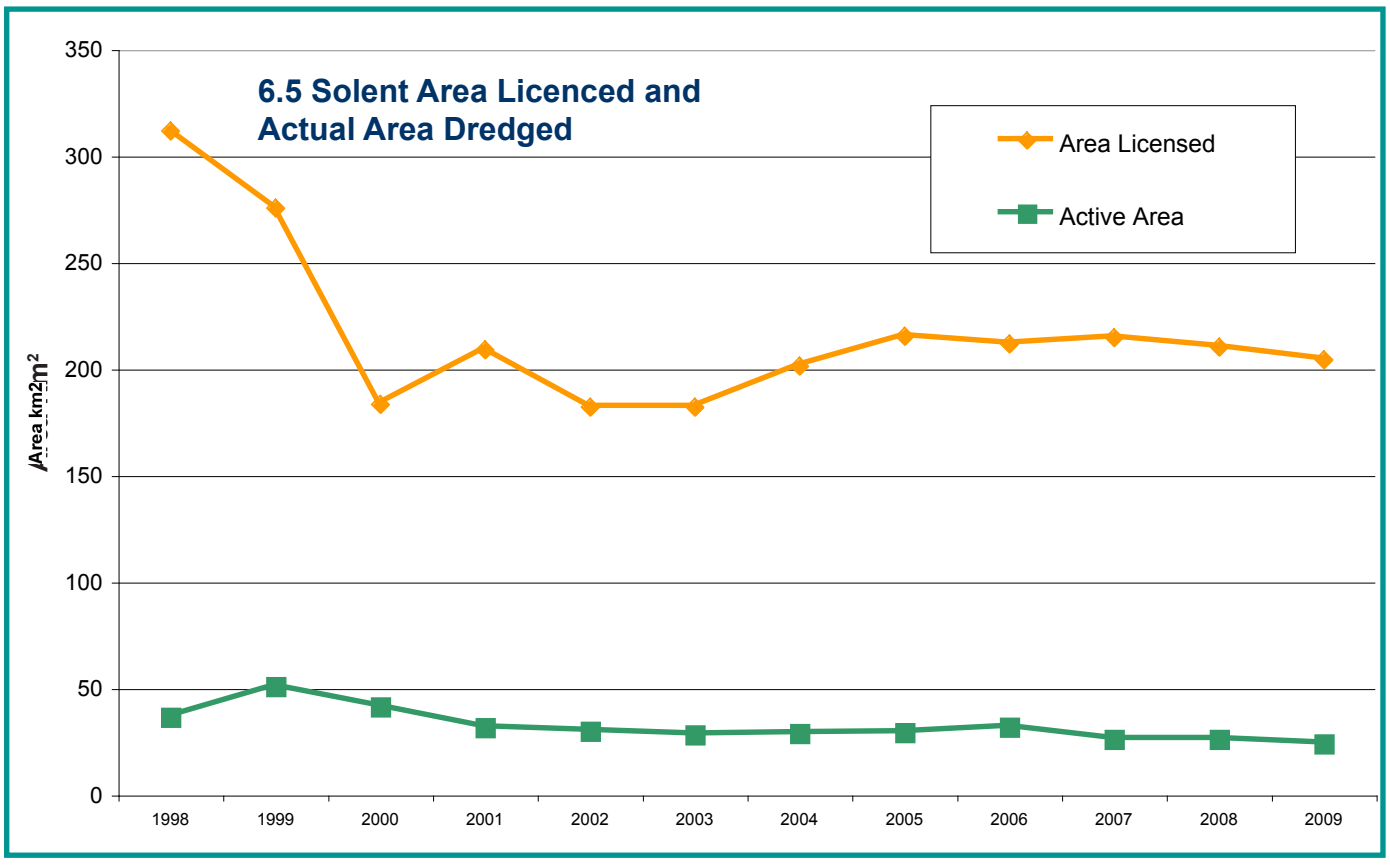
6.4 What the indicator shows

The number of registered fishing boats has declined by more than fifty percent from when the data was first collected in 1993 to present (from about 370 to 150 boats). However, the number of registered boats has been fairly stable from 2000 to 2009. The majority of fishing boats in the Solent are under 10m with only one registered boat being greater than 12m. Since 1997 there has been a slight increase in the amount of boats between 10-12m. To put these figures into context The UK fishing fleet in 2009 comprised 5,021 10m and under vessels and 1,479 over 10m vessels. There has been seventeen percent decline in the UK fishing fleet since 2000. England has about half the UK fishing fleet with most of the boats being 10m and under. The fishing fleet in the Solent is relatively small with 150 registered boats (Poole has 486 registered boats).

6.4 What are the implications for coastal planning and management

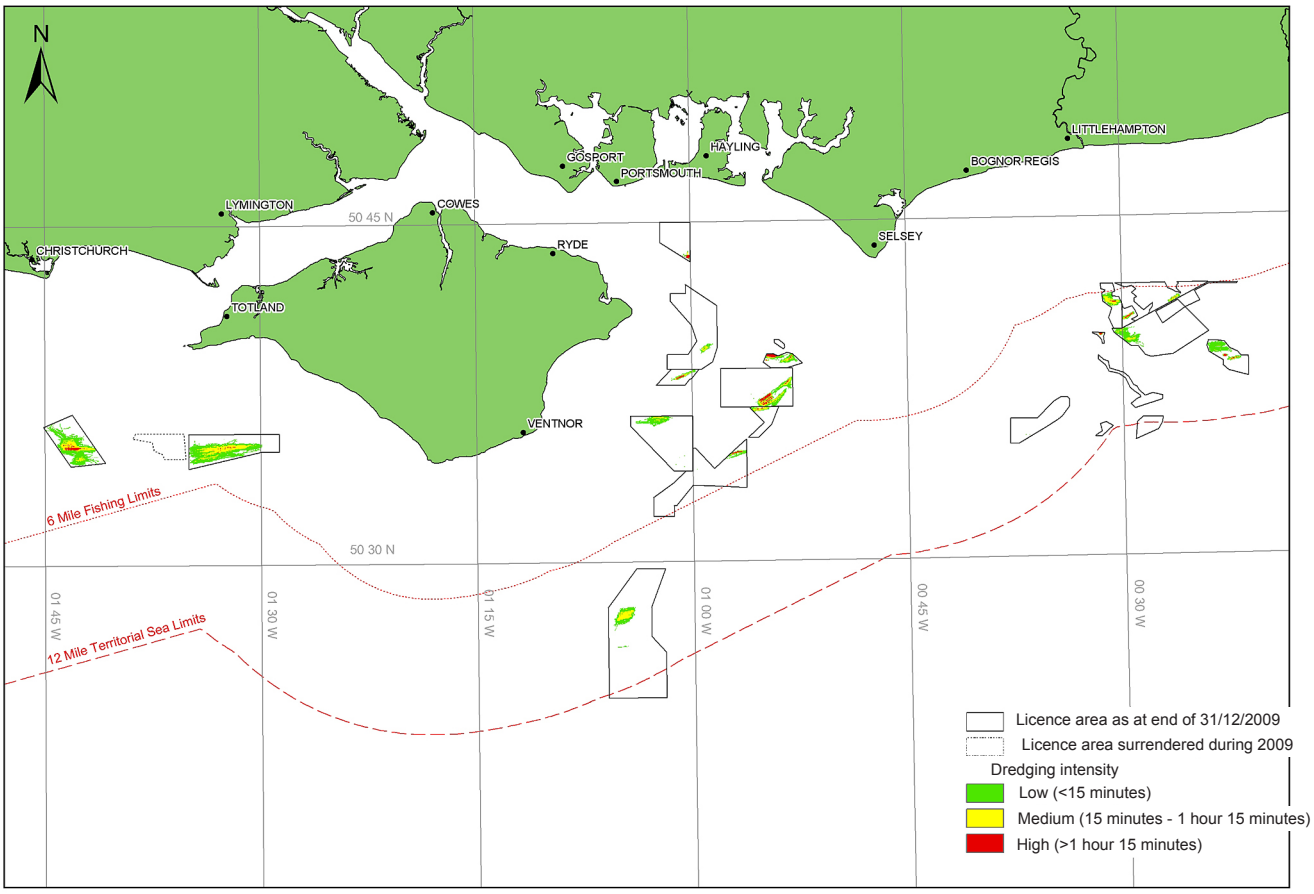
None identified at present.

Indicator 6.5: Number of Licences issued in the Solent and the Area/Volume Dredged



Source: BMAPA/Crown Estate

6.5 Licenced Dredge Areas and Dredging Intensity on the South Coast



Source: 12th annual area involved report, BMAPA/Crown Estate

6.5 Reason for indicator selection

There is currently only a small amount of aggregate extraction in the Solent. A more significant amount of marine aggregate extraction occurs south of the Isle of Wight. This indicator would give a measure of the potential pressure on the marine aggregate resource in the Solent. By having a measure of area licensed and the actual area dredged it also starts to give an indication of the environmental pressure on the area from the extraction.

6.5 Where does the data come from?

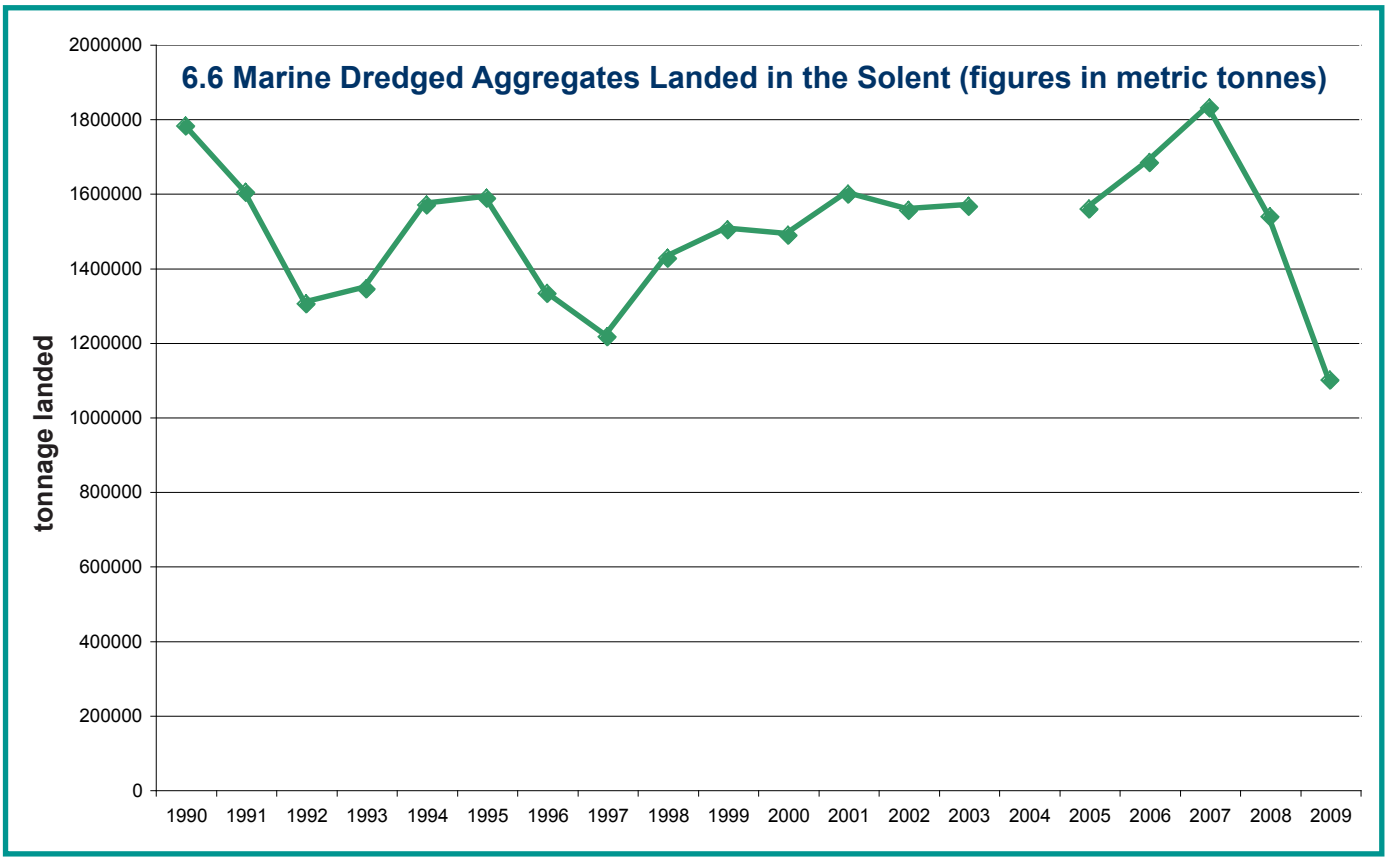
This data is available from the British Marine Aggregate Producers Association (BMAPA) and the Crown Estate who produce an annual report 'The area involved'.

6.5 What the indicator shows

The data is for the South Coast region which includes the Solent but also areas south and east and west of the Isle of Wight (Christchurch in the west and Littlehampton in the east). The licensed area decreased since 1998 but has been stable since 2005. The actual area dredged is only about seventeen percent of the licensed area, which limited the environmental impact of the dredging activity. This has been stable since the data started being collected in 1998.

In 2009 the South Coast region had 18 production licences operated by a number of companies. They are mainly for sand and gravel, principally for use in the construction industry.

Indicator 6.6: Tonnage of marine dredged aggregate landed at the Solent's aggregate wharfs



Source: BMAPA/Crown Estate

6.6 Reason for indicator selection

Aggregate wharfs in the Solent are necessary for the supply of marine aggregates to the region's construction industry and for beach recharge which is an increasing use of marine aggregates. They are important to the economy of the region. This indicator will give an indication of the importance of the aggregate wharfs in the Solent and show a pattern in their usage.

6.6 Where does the data come from?

This data is currently collated for the State of the Solent report and the information is available from South Coast Shipping.

6.6 What the indicator shows

Not all the aggregate landed at the Solent's wharves comes from aggregate extracted on the South coast. The tonnage landed has been fairly stable with some annual fluctuations. There has been a decline in 2008 and 2009, this like the other industries in the Solent, is likely to be due to the economic downturn and the associated reduction of house building.

6.6 What are the implications for coastal planning and management

None identified at this time.

Future Work

Of the six indicators which were chosen for the Natural Resources section the only one where data is not collected is the level of aggregates from secondary or recycled sources. Work will be carried out on how this can be collected and if the indicator still needs to be included in the natural resources indicator set.

The higher the percentage of recycled aggregates which are used in the construction industry and for beach recharge the more sustainable the industry is. This indicator would not be specific for marine aggregates but would apply to the aggregate industry in general.

Links

- EA Salmon Counts: http://www.environment-agency.gov.uk/research/library/publications/124281.aspx
- Crown Estates: http://www.thecrownestate.co.uk/dredge_areas_statistics.
- Annual Assessment of Salmon Stocks 2009, Environment Agency and Cefas, http://www.environment-agency.gov.uk/research/library/publications/124281.aspx.
- Oyster Data: Solent Regulated Fishery Oyster Stock Report 16 - 22, June 2009 Shellfish Resource Team Report No. 83.
- MMO Fishing Statistics: http://www.marinemanagement.org.uk/fisheries/statistics/annual.htm.
- Crown Estates: http://www.thecrownestate.co.uk/dredge_areas_statistics.
- British Marine Aggregate Producers Association, http://www.bmapa.org/.