



Supporting Evidence

Net Fishing Management for Estuaries, Harbours and Piers in Dorset, Hampshire and the Isle of Wight

Annex I: Table of Proposed Net Management Areas

Annex II: Existing Measures

Annex III: Net Management Area Selection Evidence

Annex IV: Temporal Salmonid Migration

Annex I – Table of Proposed Net Management Areas

No.	Area	Map	Management proposal	Timing
1.	Chichester Harbour	1	No additional net use closure	-
2.	Langstone Harbour: Bridge Lake and associated rivers	1	Closure to all net use, except ring nets	All year
3.	Langstone Harbour: all areas excluding Bridge Lake	1	No additional net use closure	-
4.	Portsmouth Harbour: Fareham Creek and River Wallington	1	Closure to all net use, except ring nets	All year
5.	Portsmouth Harbour: all areas excluding Fareham Creek	1	No additional net use closure	-
6.	Southsea Pier	1	Closure to all net use within 100 metres of pier structure	All year
7.	River Meon	2	Closure to all net use, except ring nets	All year
8.	Rivers Test, Itchen and Hamble	2	Closure to all net use, except ring nets	All year
9.	Southampton Water – Dock Head to Calshot	2	Closure to all net use within 3 metres of the surface, except ring nets	All year
10.	Lymington River	4	Closure to all net use, except ring nets	All year
11.	Keyhaven	4	Closure to all net use, except ring nets	All year
12.	Sandown Pier	3	Closure to all net use within 100 metres of pier structure	All year
13.	Bembridge Harbour and River Yar (eastern)	3	Closure to all net use, except ring nets	All year
14.	Ryde Pier	3	Closure to all net use within 100 metres of pier structure	All year
15.	Wooton Creek	3	Closure to all net use	All year
16.	River Medina	3	Closure to all net use, except ring nets	All year
17.	Newtown Creek and associated rivers	4	Closure to all net use	All year
18.	Yarmouth Harbour entrance and River Yar (western)	4	Closure to all net use	All year
19.	Christchurch Harbour and associated rivers	5	Closure to all net use, except ring nets	All year
20.	Christchurch Harbour entrance 'Christchurch Box'	5	Closure to all net use, except ring nets	15 th Feb – 30 th Sept.
21.	Boscombe and Bournemouth Piers	7	Closure to all net use within 100 metres of pier structures	All year
22.	Poole Harbour: Holes Bay, Wareham Channel, Lytchett Bay, Wych Lake and Middlebere Lake and associated rivers	6	Closure to all net use, except ring nets	All year
23.	Poole Harbour (excluding above areas)	6	Closure to all net use, except ring nets	1 st Mar – 31 st Oct.
24.	Swanage Pier	8	Closure to all net use within 100 metres of pier structure	All year
25.	Weymouth Piers	9	Closure to all net use within 100 metres of pier structures	All year
26.	The Fleet	10	Closure to all net use, except ring nets	All year
27.	Lyme Regis to Burton Mere - 1nm from shore	10	Closure to all net use within 3 metres of the surface, except ring nets	All year

Annex II – Existing Measures

Southern IFCA currently has three legacy byelaws that specifically manage net use within the district. These byelaws are:

- Fixed Engines byelaw¹ - this byelaw prohibits the use of fixed engines during April-September (inclusive) in areas of Poole Harbour, Keyhaven, Lymington, the Rivers Test and Itchen and the River Meon. It also prohibits the use of a fixed net with a headline less than 3metres in areas of Lyme Bay during April-July (inclusive).
- Sea Fisheries Fixed Engine Prohibition byelaw² - this byelaw prohibits the use of fixed nets at certain periods in the southern section of Christchurch Harbour and in an area at the harbour entrance, known at the Christchurch 'Box'. This byelaw also prohibits the use of any fixed net for the purpose of taking sea fish inland of the landward boundary of the district, as defined by the Southern Sea Fisheries and District Committee.
- Regulation of the Use of Stake or Stop Nets in Langstone Harbour byelaw³ - this byelaw prohibits the use of any stake, stop or dosh net during the period one hour either side of LW in Langstone Harbour.

A National network of Bass Nursery Areas (BNA)⁴ was introduced in 1990, including seven sites within the Southern IFCA district (figure 3). Currently, the removal of bass when fished from a vessel is seasonally restricted in six of the Southern IFCA BNA sites (excluding the Fleet, where protection applies throughout the year). Defra, in recognition of the importance of protecting nursery sites in managing the species, has embarked on a review of national bass nursery area regulations.

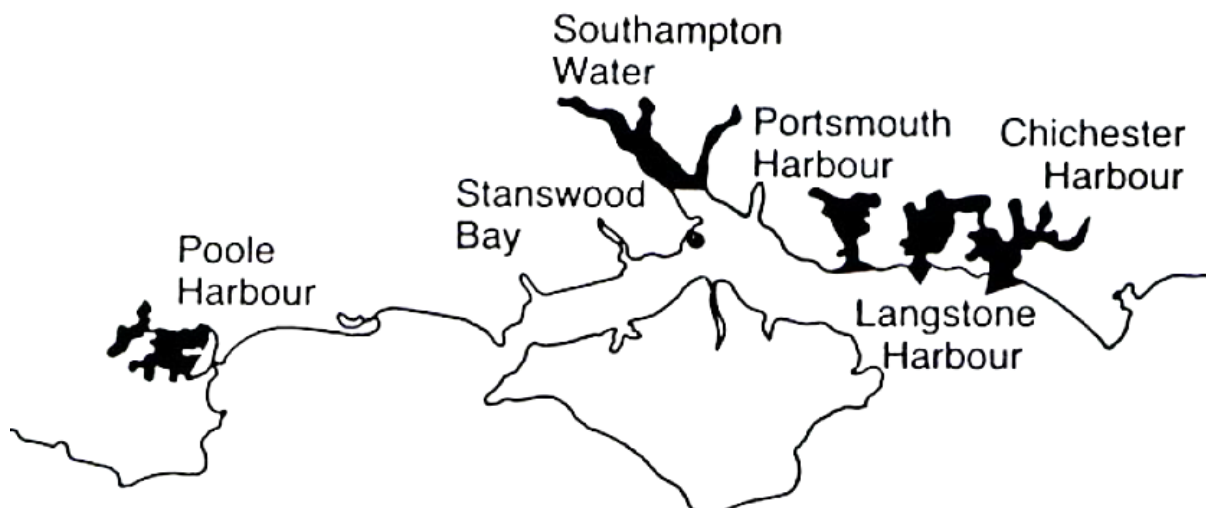


Figure 3: A map of Bass Nursery Area sites in the Southern IFCA district, excluding the Fleet.

¹ <http://www.southern-ifca.gov.uk/byelaws#Fixed-Engines>

² <http://www.southern-ifca.gov.uk/byelaws#SeaFishFixEngPro>

³ Regulation of the Use of Stake or Stop Nets in Langstone Harbour

⁴ <https://secure.toolkitfiles.co.uk/clients/25364/sitedata/files/BassNurseryBooklet.pdf>

In addition to these regulations, in many harbours and estuaries local regulations apply, mostly through Harbour Master byelaws. Where relevant these are described in greater detail for each area of focus. These local regulations are often incredibly relevant to this review as, in many cases, they already serve to restrict the use of unaccompanied fixed nets in channels.

Additionally, in parts of the district, salmonid species are afforded additional protection under environmental legislation. The Atlantic salmon (*Salmo salar*) is listed as a species of community interest under Annex II of the EU Habitats Directive. This species is a designated feature of the River Avon Special Area of Conservation and the River Itchen Special Area of Conservation. In addition, the Atlantic salmon was identified as a priority species under the UK Biodiversity Action Plan (BAP) and subsequently listed as a Species of Principal Importance under the Natural Environment and Rural Communities Act, 2006. In contrast to salmon, the brown/sea trout (*Salmo trutta*) is not a designated SAC feature, however, it is referenced within the citations of River Avon System SSSI, the River Itchen SSSI, the River Test SSSI, the River Frome SSSI and the Lymington River SSSI and therefore receives consideration as a faunal component of the 'Rivers and Streams' feature.

Annex III –Net Management Area Selection Evidence

Area 1 - Chichester Harbour - Map 1

Net management proposal	No net use closure
Current net management approach	<ul style="list-style-type: none"> The use of fixed engines in Chichester Harbour is prohibited between 1st May and 30th September. Chichester Harbour seasonal Bass Nursery Area (May-October).
Rationale for Southern IFCA net management proposal	Southern IFCA and Sussex IFCA have signed an agreement under Section 167 of the Marine and Coastal Access Act, 2009, for the Harbour to be managed as a whole by Sussex IFCA. Net management within Chichester Harbour will be considered by Sussex IFCA.

Areas 2 and 3 – Langstone Harbour - Map 1

Net management proposal	<p><u>Area 2 - Area Bride Lake and rivers:</u> Year-round closure to all net use, except ring nets</p> <p><u>Area 3 - All other areas of Langstone Harbour:</u> No additional net management</p>
Current net management approach	<ul style="list-style-type: none"> Southern IFCA 'Regulation of the Use of Stake or Stop Nets in Langstone Harbour' byelaw Langstone Harbour Board 'Fishing nets and Lines Not to Cause Obstruction byelaw, Number 46', requiring that nets do not cause a hazard to navigation. Langstone Harbour seasonal Bass Nursery Area (May-October)
Rationale for Southern IFCA net management proposal	<p>Langstone Harbour is a good example of a harbour and estuarine fish nursery and refuge area. Langstone Harbour Board small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>The Environment Agency (EA) has records of observations of sea trout at barriers to fish passage, leaping in large numbers attempting to enter freshwater at the riverine reaches of the Hermitage Stream and Hampshire Lavant (<i>Personal Communication, Leman, 2018</i>). The nearby River Ems supports a good population of sea trout (the closest established population to these streams in the North East corner of Langstone Harbour). There are not thought to be salmon present in the riverine systems which feed into Langstone Harbour, however, the River Ems which flows into Chichester Harbour nearby has recently been shown to support salmon. Given the similar underlying geology on the Hampshire Lavant, were fish passage addressed the potential for the catchment to support salmon is possible, though re-establishment of the population would rely on straying of salmon from a nearby chalk river.</p> <p>The EA is working to address these barriers as required under the Water Framework Directive, to restore these rivers to Good Ecological Potential (Hermitage) or Good Ecological Status (Hampshire Lavant). The absence of trout in these rivers is the primary reason for failure, with the fish classifications at 'Poor Status', however, upstream of these barriers there are certainly some pockets of habitat which would be highly favourable as trout habitat, with some chalkstream Priority Habitat present. Water quality improvements have been and continue to be made to ensure that all of these streams will be able to support trout in freshwater.</p>

	<p>In order to meet the objectives of the Water Framework Directive it is important to ensure that sea trout in the estuarine reaches of these rivers and the corner of Langstone Harbour through which they must pass are protected from netting pressures as work continues to restore the trout populations further upstream within the systems is critical to the success of meeting.</p> <p>Large areas of Langstone Harbour are intertidal with the relatively narrow subtidal Langstone Main Channel connecting the freshwater influences of the Hampshire Lavant, Hermitage Stream and Chichester Harbour (leading to the River Ems) to the sea. Bridge Lake therefore represents the most likely migration route for salmonids accessing these areas of freshwater. This is important given that sea trout foraging behaviour suggests a great deal of movement in the estuarine and inshore waters environment. Below this area the channel widens and branches out, lowering the associated risk of salmonid interception in fishing nets.</p> <p>The EA has historic records of sea trout being illegally targeted in the estuarine reaches of Hermitage Stream. There have also been reports in July 2012 of netting occurring near Langstone Mill with bass being targeted with 100m length net, this would have had potential to interact with sea trout, which would likely be in the vicinity at this time of year. Officers have previously observed recreational fishers (legally) using fixed and drift nets to fish within Langstone Harbour, although intelligence received suggests that some recreational net users may (illegally) target and remove bass within the Langstone Harbour Bass Nursery Area, particularly within the vicinity of Hayling bridge.</p> <p>Existing designation of Langstone Harbour as a Bass Nursery Area, combined with the proposed increase in grey mullet minimum legal size, is believed to be sufficient to support the use of the site by bass and other fish populations as a nursery and refuge area.</p>
--	---

Areas 4 and 5 – Portsmouth Harbour - Map 1

Net management proposal	<p><u>Area 4 - Fareham Creek and River Wallington</u>: Year-round closure to all net use, except ring nets</p> <p><u>Area 5 - All other areas of Portsmouth Harbour</u>: No additional net management</p>
Current net management approach	<ul style="list-style-type: none"> • Portsmouth Harbour is a seasonal Bass Nursery Area (May-September). • The Queen’s Harbour Master (QHM) applies regulations to the use of nets in Portsmouth Harbour, specifically restricting their use in a number of navigable channels and creeks.
Rationale for Southern IFCA net management proposal	<p>Portsmouth Harbour is a good example of a harbour and estuarine fish nursery and refuge area.</p> <p>Sea trout are present on the River Wallington; its tributaries have great potential to support wild brown trout, sea trout and a range of coarse and minor fish species and this potential is largely fulfilled by the river downstream of Southwick, including the Newtown / Beckford stream (Environment Agency, 2013). The presence of sea trout is also supported by enforcement intelligence.</p> <p>Upstream of Cams Bay the Fareham Creek, leading to the River Wallington, is relatively narrow and is flanked on both sides by areas of intertidal mudflats. Below Cams Bay the channel begins to widen and branches out, before meeting the main channel in the centre of the harbour. The Fareham Creek represents the most likely migration route for sea trout through Portsmouth Harbour. This is important given that sea trout foraging behaviour suggests a great deal of movement in the estuarine and inshore waters environment.</p>

	<p>Below Cams Bay Portsmouth Harbour breaks out into a number of wide channels, offering a range of routes for Sea trout accessing the River Wallington. No additional significant freshwater sources enter Portsmouth Harbour, therefore the level of risk associated with salmonid interaction in fishing nets is believed to be low.</p> <p>Existing designation of Portsmouth Harbour as a Bass Nursery Area, combined with the proposed increase in grey mullet minimum legal size, is believed to be sufficient to support the use of the site by bass and other fish populations as a nursery and refuge area.</p>
--	---

Area 7 – River Meon - Map 2

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> Under the Southern IFCA Fixed Engines byelaw the semi-circular area of sea 800metres from the mouth of the River Meon is currently closed to the use of fixed engines between April and September each year.
Rationale for Southern IFCA net management proposal	<p>The River Meon has a population of both Salmon and sea trout. A large component of the brown trout spawning stock for the Meon are sea trout, with only a small number of fish remaining resident in the river as adults (Environment Agency, 2015). Overall brown trout population consists predominantly of 0+ (young of the year) and 1+ (fish in their second year), with progressively fewer older year classes. This pattern reflects the fact that the Meon typically produces high numbers of juveniles annually and also includes a high proportion of migratory trout (sea trout) in its breeding stock (Environment Agency, 2011).</p> <p>The River Meon enters directly into the Solent at Hill Head. The hydrography of the local area means that there is no clear and obvious channel to concentrate salmonids as they approach the River Meon, as a consequence, salmonids are known to congregate at the river mouth.</p> <p>Existing protection is in place for the Meon estuary in the form of the current Southern IFCA Fixed Engine byelaw, however, the closure area is defined as semi-circular with an 800metre radius from the sluice gates which makes it difficult both to enforce, but also more complicated for fishers to follow. The proposed spatial changes are largely to adjust the shape of the byelaw area to address this issue. The EA has evidence that this protection is still required, both in terms of the species being present in the river, but also of them being at risk for targeting of these species by individuals attempting to fish illegally in this location, in breach of existing Fixed Engine byelaw.</p>

Area 8 - Rivers Test, Itchen and Hamble - Map 2

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> Net use is permitted in the river by the Hamble River Authority. The area falls within an existing Bass Nursery Area (May-October). The Test and Itchen Estuaries are seasonally closed to fixed net use between 1st April and 30th September under the Southern IFCA Fixed Engines byelaw.

Rationale for Southern IFCA net management proposal

- Southampton Harbour byelaws prevent the use of nets or other fishing gear where they are likely to become an obstruction to navigation (principally within busy channel areas, such as the lower reaches of the River Test).
- The Atlantic salmon (*Salmo salar*) and the brown/sea trout (*Salmo trutta*) is referenced within the citation of the River Test SSSI, not as notified features in their own right but they do receive consideration as a faunal component of the 'Rivers and Streams' feature.
- The River Itchen (in freshwaters) is designated a Special Area of Conservation (SAC). Atlantic salmon is listed as a species of community interest under Annex II of the EU Habitats Directive for this site.

Rivers Test, Itchen and Hamble are good examples of harbour and estuarine fish nursery and refuge areas. EA small fish survey data demonstrates that the areas support a rich variety of fish populations at various stages through their life-cycles.

River Hamble: In 2008, the EA restored fish passage to the River Hamble through a fish pass installation at Botley Mill. This has subsequently allowed sea trout to return to the Hamble River, where previously they had been unable to enter the system since the Mill's construction 250 years earlier. Since this time, the EA has started to record sea trout in routine electrofishing surveys upstream of the pass (Environment Agency, 2012).

River Test: Both salmon and sea trout are present on the River Test. The River Test is a SSSI, with salmon and sea trout both receiving consideration as a faunal component of the Rivers and Streams Feature.

The River Test Salmon population is considered to be 'Probably at Risk'. Based on recent, and more historic research there is also a good case to consider the Test Estuary as functionally linked to Atlantic salmon feature of the River Itchen Special Area of Conservation (SAC). Given the proximity of the river mouths and shared estuaries of the Test and Itchen, higher levels of gene flow and migration between these sites might be expected and it appears that the geographic distance between the mouths of these rivers does play a role in defining genetic distances between populations (Ikedashi et al, 2018). Radio-tracking work of salmon carried out in the early 1990s has confirmed this to be the case, with 9.6% of salmon caught and tagged on the Itchen at Woodmill, later being recaptured in the River Test (Horsfield, 1994). For these reasons to conserve salmon natal to the River Itchen, we must equally protect the River Test Estuary.

River Itchen: The River Itchen (in freshwaters) is designated a Special Area of Conservation (SAC). Atlantic salmon is listed as a species of community interest under Annex II of the EU Habitats Directive for this site. The River Itchen salmon population is currently assessed as 'Probably at Risk'.

Sea trout are also referenced in the River Itchen SSSI citation, where they receive consideration as a faunal component of the 'Rivers and Streams' feature. Upstream of Southampton Dock Head the River Itchen is characterised by a relatively narrow river channel resulting in a relatively concentrated movement of fish.

The EA receives occasional reports from the rod and line fisheries of net marks on salmon and sea trout caught in the fisheries (though net marks observed are not consistently recorded by anglers or the fisheries). At Woodmill, the furthest downstream rod and line fishery, in 2017 the catch book noted:

07/08/2017- one sea trout had net wounds. The next fishery upstream (Lower Itchen Fishery) has observations of three salmonids being net marked in the 2017 fishing season, and a few more than this in the 2016 fishing season.

In 2015, sea trout were recorded for the first time in the EA's spring WFD estuarine monitoring in the Itchen estuary at Itchen Bridge. Although we know sea trout are present in the estuary throughout the year, it is not a species we expect to catch during our surveys due to the fact that sea trout should be able to easily out swim our netting techniques, which are predominantly aimed at juvenile fish. This is incorporated as it is important to ensure protection of smolts in addition to adults from netting interactions.

Area 9 - Southampton Water – Dock Head to Calshot - Map 2

Net management proposal	Year-round closure to all net use within 3 metres of the surface, except ring nets
Current net management approach	<ul style="list-style-type: none"> • The area of Southampton Water between Dock Head and Esso Terminal is an existing Bass Nursery Area (May-October). • Southampton Harbour byelaws state that no person shall cast or place any drift, trawl net or other fishing gear in such a position as to be likely to become an obstruction or danger to any property including in particular, but without prejudice to the generality of the foregoing, any vessel or mooring. <u>No person shall leave any net or other fishing gear unattended at any time.</u>
Rationale for Southern IFCA net management proposal	<p>Southampton Water is a good example of a harbour and estuarine fish nursery and refuge area. EA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>The River Itchen (in freshwaters) is designated a Special Area of Conservation (SAC). Atlantic Salmon is listed as a species of community interest under Annex II of the EU Habitats Directive for this designated site. The Itchen Salmon population is currently assessed as 'Probably at Risk'. Although the SAC does not extend into the estuarine reaches, the Itchen Estuary and the length of Southampton Water to Calshot should be classed as functionally-linked habitat utilised by Atlantic Salmon and should be treated as 'supporting habitat' for the purposes of the Habitats Regulations.</p> <p>Sea trout are also referenced in the River Itchen and River Test SSSI citation, where they receive consideration as a faunal component of the 'Rivers and Streams' feature.</p> <p>Historic intelligence data shows that, in the Test Estuary particularly, there have been numerous reports of net marked salmonids. The furthest downstream fishery on the River Test has reported approximately 15 salmonids that were net marked in the 2017 fishing season. In earlier years such as 2013, there were again numerous reports of net marked fish.</p>

Area 10 – Lyminster River- Map 4

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> • Under the Southern IFCA Fixed Engines byelaw seasonal fixed engine restrictions apply (April – September) as far downstream as Town Bridge

Rationale for Southern IFCA net management proposal	<p>Lymington holds an extensive network of saltmarsh habitat and is a good example of a harbour and estuarine fish nursery and refuge area.</p> <p>Brown trout is the most dominant fish species in the River Lymington and the population has a significant migratory component, that is, a high proportion of trout become sea trout, returning to the rivers as large adults in order to spawn (Environment Agency, 2012).</p> <p>The existing fixed engines closure area is relatively small spatially and is not believed to provide sufficient protection to sea trout in the estuary, therefore a revised management area has been proposed.</p>
--	---

Area 11 – Keyhaven- Map 4

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> • Under the Southern IFCA Fixed Engines byelaw seasonal fixed engine restrictions apply (April – September).
Rationale for Southern IFCA net management proposal	<p>Keyhaven is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>In pre-restoration work electro-fishing surveys carried out in 2016 on the Avon Water it was shown that the fish community is dominated by brown trout. Like the Lymington and Beaulieu, it is anticipated that a relatively high proportion of these will be migratory sea trout, due to the likely greater food resources available in the marine environment compared to the New Forest Streams. The Danes Stream and the Avon Water are not assessed for the fish community for the Water Framework Directive classifications.</p>

Area 13 – Bembridge Harbour and River Yar (Eastern) - Map 3

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> • A requirement under Bembridge Harbour byelaws for nets to be used in a manner as to not become an obstruction or danger to property, including moorings and vessels.
Rationale for Southern IFCA net management proposal	<p>Bembridge Harbour is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>Significant investment has been made in addressing barriers to migration for sea trout in recent years within the catchment in an effort to achieve good ecological potential for the Water Framework Directive. Confirmation of the presence of the brown trout in the Eastern Yar river catchment being sea trout is provided by the electrofishing survey report in 2012 which states 'The site at Newchurch revealed a relatively diverse fish community, which included a number of large adult sea trout in the river in preparation for spawning in early winter' (<i>Environment Agency, 2012</i>).</p>

Area 15 – Wooton Creek - Map 3

Net management proposal	Year-round closure to all net use.
Current net management approach	<ul style="list-style-type: none"> The use of static fishing gear is prohibited in Wooton Creek under Queen’s Harbour Master (QHM) Portsmouth General Direction No. 4/11.
Rationale for Southern IFCA net management proposal	<p>Wooton Creek, on the North coast of the Isle of Wight, is a shallow intertidal inlet offering suitable nursery and refuge habitat for bass and other fish populations.</p> <p>The site offers shoreline access points for recreational sea angling and forms and offers important opportunities for this past-time to be enjoyed by local users.</p>

Area 16 – River Medina - Map 3

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> Under a Cowes Harbour Commission byelaw, the Master of a vessel shall not use or permit it to be used to drift, trawl or undertake any other net fishing in any part of the Harbour so as to be or to be likely to become an obstruction or danger to the navigation of the Harbour. Nets are not to be left unattended. Bottom gear is not to be used in any fairway or channel or any area designated as small craft moorings or no anchoring. Any gear left unattended shall be marked so to be clearly visible by day and fitted with a light if deployed between sunset and sunrise.
Rationale for Southern IFCA net management proposal	<p>River Medina is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles. The site offers shoreline access points for recreational sea angling and forms and offers important opportunities for this past-time to be enjoyed by local users.</p> <p>The River Medina can be considered as a river of two halves when considering the freshwater fish populations for the Water Framework Directive. The catchment is far from reaching its optimum potential in terms of brown trout production including sea trout due to significant migratory barriers through Newport. Below these structures there are some areas where better fish populations can be found. The movement of trout is constrained by the weirs and most of the fish are non-migratory fish which will remain vulnerable to pressures such as pollution incidents and drought, due to the restricted potential for recruitment. Some sea trout have been shown to be able to access the system over some of the weirs, though certainly not all and only in exceptional flow conditions. The EA is in the process of addressing the eight key migratory barriers through technical fish pass installations.</p> <p>Whilst the river is not reaching its potential in terms of sea trout stocks, the above does at least recognise the presence of sea trout in the furthest downstream freshwater reaches.</p>

Area 17 – Newtown Creek and associated rivers – Map 4

Net management proposal	Year-round closure to all net use.
Current net management approach	<ul style="list-style-type: none"> The National Trust own the seabed in Newtown Harbour and have been gifted the historic fishing rights for the area. No fishing activities are permitted to take place except for rod and line, with any fish taken for the individuals own consumption.
Rationale for Southern IFCA net management proposal	<p>Newtown Creek is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>Brown trout have been found to be present on the Caulbourne stream during surveys in July 2014, though they are absent in the Rodge Brook which enters the Clamerkin Lake arm of Newtown Harbour. The EA is currently working to address fish passage issues on the Caulbourne Stream which enters the estuarine environment in Newtown Harbour for the benefit of sea trout.</p>

Area 18 - Yarmouth Harbour entrance and River Yar (western) - Map 3

Net management proposal	Year-round closure to all net use.
Current net management approach	<ul style="list-style-type: none"> Yarmouth Harbour byelaws prohibit all net fishing within the Inner Yarmouth Harbour area and on the River Yar (western). Within the Yarmouth Harbour Entrance (Outer) Yarmouth Harbour byelaws prohibit net fishing in areas where it is likely to become an obstruction or danger to navigation of the Harbour.
Rationale for Southern IFCA net management proposal	<p>The River Yar (Western) is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>The River Yar (western) and inner Yarmouth Harbour holds extensive areas of estuarine saltmarsh, providing ideal nursery and refuge habitat for fish species including grey mullet and bass, with both species regularly found in good numbers during the Authority’s small fish surveys at this location.</p> <p>Yarmouth Pier is one of the most popular fishing locations on the Isle of Wight, providing an opportunity for young anglers and those who struggle with access to fish to catch a good range of species.</p> <p>The area of water immediately adjacent to Yarmouth Pier, Yarmouth Harbour entrance and Black Rock Buoy is considered to be of high importance to local recreational sea anglers as it appears to be a popular feeding habitat for several fish species, including bass.</p>

Areas 19 and 20 - Christchurch Harbour and associated rivers; Christchurch Harbour entrance ‘Christchurch Box’ - Map 5

Net management proposal	<p><u>Area 19 - Christchurch Harbour and associated rivers:</u> Year-round closure to all nets, except ring nets.</p> <p><u>Area 20 – Christchurch Harbour entrance ‘Christchurch Box’:</u> Seasonal closure to all nets, except ring nets (15th February to 30th September).</p>
--------------------------------	---

<p>Current net management approach</p>	<ul style="list-style-type: none"> • Three quarters of Christchurch Harbour is subject to private ownership by Bournemouth Water and netting is not permitted within this area. The placing of nets in two separate areas, the lower public fishery area of Christchurch Harbour and Christchurch ‘Box’ at the entrance, is prohibited at certain times of the year under the Southern IFCA Sea Fisheries Fixed Engine Prohibition byelaw. • The Hampshire Avon is designated as a SAC and SSSI. Salmon are a designated feature of the Hampshire Avon Special Area of Conservation (SAC) and are a notified feature of the Hampshire Avon System SSSI. Sea trout are referenced within the citation for the Hampshire Avon System SSSI.
<p>Rationale for Southern IFCA net management proposal</p>	<p>Christchurch Harbour is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>The Hampshire Avon is designated as a SAC and SSSI. Salmon are a designated feature of the Hampshire Avon Special Area of Conservation (SAC) and are a notified feature of the Hampshire Avon System SSSI. Sea trout are referenced within the citation for the Hampshire Avon System SSSI. The Hampshire Avon salmon population is currently assessed as ‘Probably at Risk’.</p> <p>The Dorset Stour is not afforded SSSI or Protected Area status, however the lower Stour is an important resting area for salmon that will eventually ascend the Hampshire Avon. The Dorset Stour salmon population is currently classified as ‘At Risk’.</p> <p>There is a clear case that Christchurch Harbour is functionally linked to the Hampshire Avon and should be classed as supporting habitat. Tracking studies have shown that salmon entering Christchurch Harbour quickly ascend into the Hampshire Avon in times of high flow. When flows are lower, fish tend to hold in the harbour or in the lower reaches of the Stour until flows pick up in the Autumn. 9.8% of fish tagged spent between 3-4 months in the harbour or seawards between tagging at Mudeford and entry to the river (Solomon 1991).</p> <p>During the Solomon tracking study, fish tagged at Mudeford in Christchurch Harbour were picked up in the Frome, Piddle and Test as well as the Stour and Avon. This provides further evidence for consistent management across the southern chalkstreams.</p> <p>A single narrow buoyed channel links the Rivers Stour and Avon with the coast. The channel narrows further as it passes past Mudeford Quay, an area known locally as the ‘Run’. Historic salmonid fisheries principally took place in the channel areas of the harbour, where salmonid numbers were more concentrated.</p> <p>Historic intelligence and enforcement data suggest that the highest concentration of incidents of illegal fishing for migratory fish in Christchurch Harbour occur in the lower reaches of the harbour in the public fishery and along the area of Avon Beach in the area known as the ‘box’. This area is a known migration route close to the shore. The area of the private fishery in the Harbour has a prohibition on all netting.</p>

Areas 22 and 23 – Poole Harbour and associated channels and rivers - Map 6

<p>Net management proposal</p>	<p>Area 22 - Holes Bay, Wareham Channel, Lytchett Bay, Wych Lake and Middlebere Lake and associated rivers: Year-round closure to all net use, except ring nets</p> <p>Area 23 – Poole Harbour (all other areas): Seasonal closure to all net use, except ring nets (1st March to 31st October).</p>
<p>Current net management approach</p>	<ul style="list-style-type: none"> • Poole Harbour is subject to a seasonal (April–September) fixed engine closure under the existing Southern IFCA Fixed Engines byelaw. • Poole Harbour is an existing Bass Nursery Area (May-October). • The use of fixed engines is prohibited above a line drawn from Bower Point to Bucks Cove being the boundary of the EA owned and controlled fishery of the Rivers Frome and Piddle and the Poole Harbour Net Limitation Order (NLOs) for catching of salmon and sea trout (regulated by the Environment Agency) is now used for research purposes, with all fish returned. • The River Frome is designated as a SSSI. Salmon are referenced in the citation for the SSSI as a faunal component of the rivers and streams feature.
<p>Rationale for Southern IFCA net management proposal</p>	<p>Poole Harbour is a good example of a harbour and estuarine fish nursery and refuge area. Southern IFCA and EA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.</p> <p>The River Frome is designated as a SSSI. Salmon are referenced in the citation for the SSSI as a faunal component of the rivers and streams feature. The River Frome salmon population is currently considered to be ‘Probably at Risk’, as is the population in the neighbouring Piddle.</p> <p>In common with other chalk rivers, the salmon catches in both the Frome and Piddle markedly declined at the beginning of the 1990s and the state of the salmon stock since this time has fluctuated around a much-reduced level. The stock is comprised of both MSW and one-sea winter fish (grilse), with the grilse typically making up 70-80% of the stock (<i>Beaumont et al., 2015</i>). The National Spring Salmon byelaws in conjunction with the local EA byelaws protect the early-running MSW component of the salmon population from legal exploitation. The Net Limitation Order in Poole Harbour for salmon was reduced to zero in 2017.</p> <p>Given the proximity of the river mouths and shared estuaries of the Frome–Piddle, higher levels of gene flow and migration between these sites might be expected and it appears that the geographic distance between the mouths of these rivers does play a role in defining genetic distances between populations (<i>Ikedashi et al. 2018</i>).</p> <p>Whilst the Frome is a SSSI rather than a SAC, NE advice sets out that in relation to migratory passage, the same approach should be followed for outside a European Site (under different legislative requirements). This is due to the functionally-linked nature of the migration route to allow salmon to enter the Frome.</p> <p>The Salmon Action Plans (SAPs) for the Frome and Piddle were published in 1998 and 2004 respectively, following consultation with interested parties, including rod and net interests. These SAPs incorporated an assessment of stock status and established a salmon conservation limit (CL). They described the main issues limiting the stocks and actions necessary to improve these. For the River Frome, these actions focused on resolving fish migration issues</p>

	<p>at a number of key structures, as well as undertaking habitat rehabilitation projects. A key action to improve the Frome and Piddle for salmonids was the instigation of the Catchment Sensitive Farming initiative to tackle diffuse pollution from agricultural land. This is a key issue for both these catchments.</p> <p>The Wareham Channel, Wych Lake and Middlebere Lake areas provide a subtidal channel transit route for salmonids to access the afore mentioned rivers. Beyond these channels the area of subtidal access widens, with a range of possible transit routes.</p> <p>Historic intelligence and enforcement data suggest that the highest concentration of incidents of illegal fishing for migratory fish occur in the upper reaches of Poole Harbour, near the river entrances and natural pinch points.</p> <p>Holes Bay, in Poole Harbour is a locally important site for recreational sea angling and nature conservation, under the Holes Bay Nature Park. The shallow intertidal bay holds good examples of saltmarsh and mudflat habitats, providing rich nursery and refuge habitat for fish and birdlife populations. The area is particularly popular for flounder angling, providing an important introduction to the activity for new and young anglers.</p>
--	--

Area 26 – The Fleet – Map 10

Net management proposal	Year-round closure to all net use, except ring nets.
Current net management approach	<ul style="list-style-type: none"> • The placing and use of fixed engines for taking sea fish is prohibited by the landowner to the west of the eastern boundary of the parish of Abbotsbury. • The Fleet is an existing year-round Bass Nursery Area.
Rationale for Southern IFCA net management proposal	The Fleet is a good example of fish nursery and refuge area. Southern IFCA and EA small fish survey data demonstrates that the area supports a rich variety of fish populations at various stages through their life-cycles.

Area 27 - Lyme Regis to Burton Mere - 1nm from shore – Map 10

Net management proposal	Year-round closure to all net use within 3 metres of the surface, except ring nets
Current net management approach	<ul style="list-style-type: none"> • The area is subject to a seasonal (April–July) fixed engine closure under the existing Southern IFCA Fixed Engines byelaw. • The placing and use of fixed engines for taking sea fish is prohibited above the limit of ordinary high water in the Rivers Lim, Char, Winniford, Brit and Bride.
Rationale for Southern IFCA net management proposal	<p>Sea trout are a known feature of these rivers and streams and were caught in freshwater electrofishing surveys in the Brit and Char (2002). Salmon parr have been found in the Brit, around Bridport, in freshwater electrofishing surveys in 2002 (1 parr) and 2010 (5 parr). This demonstrates that a spawning population of salmon are present in the Brit during various recent years.</p> <p>The area is a known congregation area for sea trout from spring months onwards before they enter local and regional freshwater systems (Various pers. comms).</p>

Annex IV – Temporal Salmonid Migration

As part of their evidence package for this review⁵, the Environment Agency has provided additional information (below) on the temporal migration of salmonids through Southern IFCA waters. This evidence is significant as it demonstrates the year-round use of our waters by transiting fish and highlights the need to consider year-round management of netting to reduce the potential for interaction with salmonids. The current Southern IFCA Fixed Engine byelaw applies only seasonal restrictions in areas of the district.

In Hampshire adult salmonid populations are monitored by the EA resistivity fish counters at Gaters Mill on the River Itchen and at Nursling on the River Test.

Since 1990 the fish counters in Hampshire have been operated from May-December only, to give opportunity for counter maintenance in winter. However, in 2016 the counter was run year-round to obtain as full a dataset as possible. Figure 1 shows the average salmon movements each month through the fish counters in Hampshire. This demonstrates the movements of salmon throughout the year, and in turn indicates that salmon will have moved through the estuaries to reach this location in the previous weeks and months.

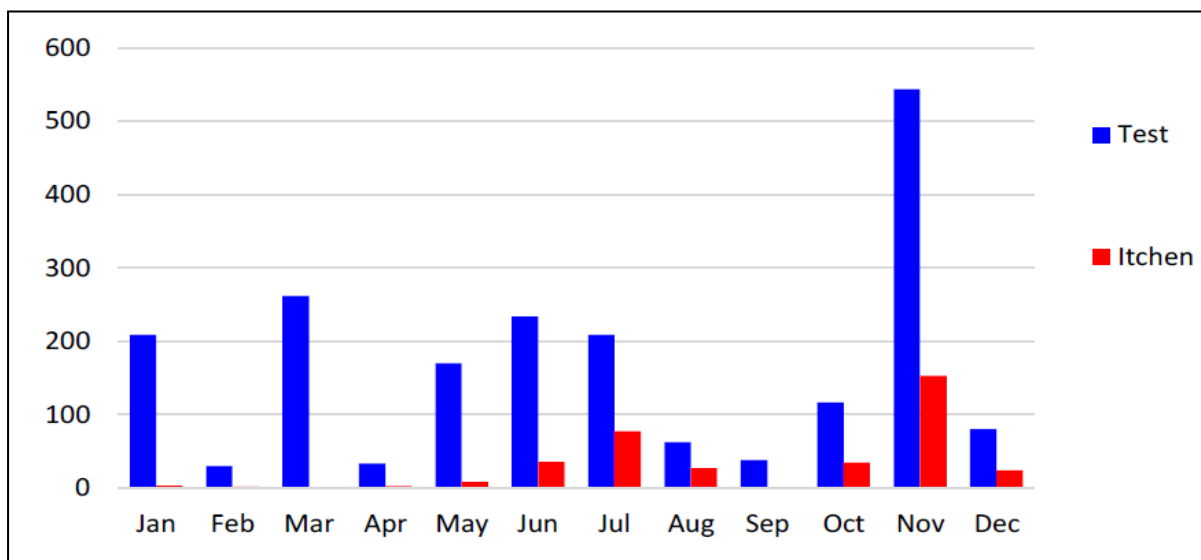


Figure 1: Estimated upstream salmon per month at the fish counters on the Test and Itchen in 2016.

Adult salmon and sea trout migrate through Christchurch Harbour throughout the year. The graph below shows data of fish moving upstream through the EA fish counting facility at Knapp Mill, upstream of Christchurch on the Hampshire Avon.

Fish begin to ascend past the counter in February, with large Multi Sea Winter (MSW) salmon making up the majority of the counts in the early part of the year. Salmon ascend past the counter, which is at the tidal limit in every month of the year with peaks from May-August and October/November (Figure 2).

⁵ Evidence for further protection being needed for migratory salmonids from netting in Southern IFCA District – EA Report to the BWG 8th March 2018

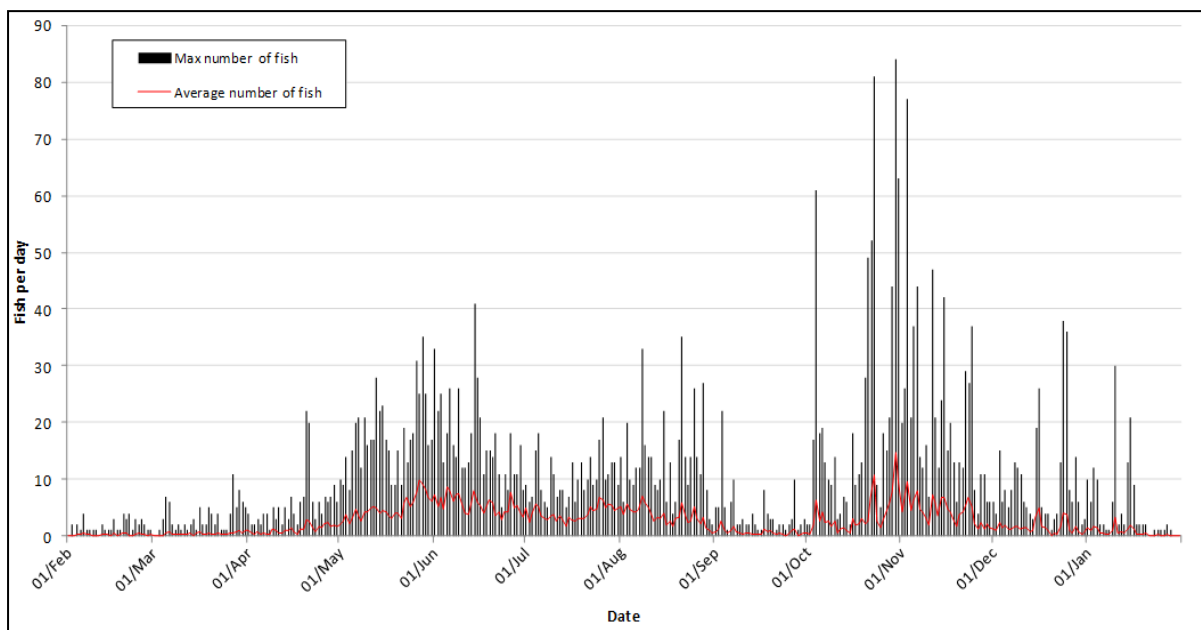


Figure 2: Maximum and average number of fish per day detected by Knapp Mill, Hampshire Avon fish counter from the 1st February 2006 to the present day.

On the River Frome, the Game & Wildlife Conservation Trust run a fish counter facility at East Stoke. Their information on returning salmon numbers throughout the year is given in Figure 3. Due to the East Stoke counter being located further up river (in comparison to the location of Knapp Mill on the Hampshire Avon), fish counts from October-December are likely to represent fish that have entered the harbour in September and October and spent time holding in the harbour and lower river.

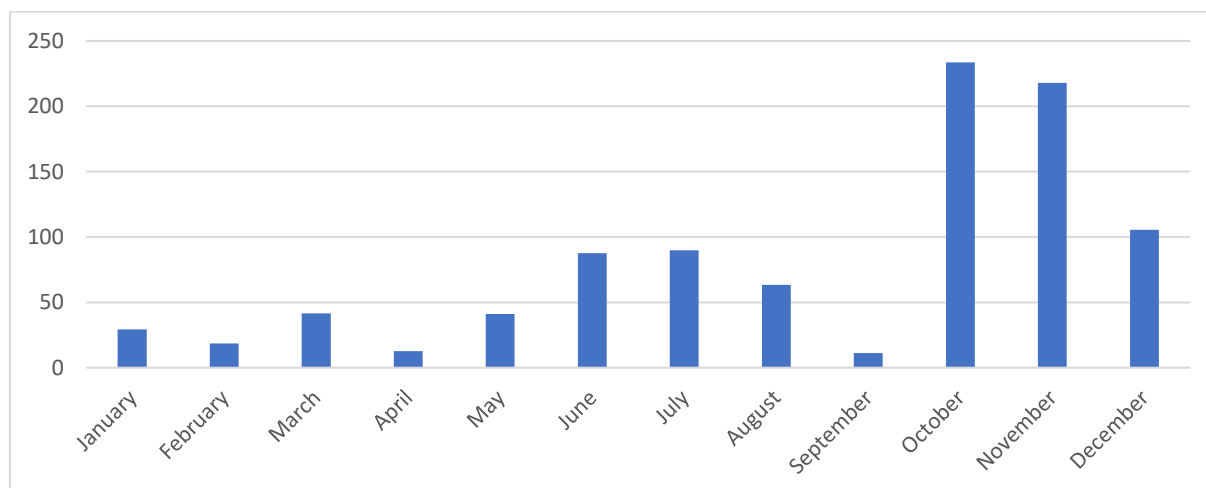


Figure 3: Average monthly salmon counts at East Stoke (2005-2015). *Source:* GWCT.

Fish Counter data from across the rivers in the Southern IFCA district demonstrate the presence of salmon coming through the estuary across the full calendar year, especially notable on the fish counters in the west of the district, where data has been collected year-round. In addition, sea trout will have potential to be present in these estuarine locations year-round, utilising these routes not only for migration but additionally as foraging areas. The existing fixed engine byelaws in Southern IFCA district do not currently cover the most important period of the year salmon migration (the autumn migration window). This evidence has informed the timing of proposed net management measures across the district.