SALMON & TROUT CONSERVATION SCOTLAND

PROTECTING WILD FISH & THEIR HABITATS SINCE 1903

Response to SEPA DZR consultation September 2017

Executive Summary

S&TCS agrees with SEPA that there is a need to *"strengthen environmental controls so that the risks to Scotland's environment from existing fish farms and future new farms is minimised*". S&TCS is pleased that SEPA appreciates that the current environmental controls in place do not minimise the risk to Scotland's environment from existing fish farms.

Therefore S&TCS is very disappointed indeed that the major impact of fish farming on wild salmonid fish - the harm being caused by farm-derived sea lice - is not considered in the DZR consultation at all.

Evidence repeatedly shows a direct and strong correlation exists between on-farm biomass and the number of ovigerous female lice per farmed fish. The greater the biomass on a fish farm, the greater the number of ovigerous sea lice that are likely to be present and the greater the risk of infestation of wild salmon and sea trout from the fish farm concerned.

SEPA should not bring in DZR to lift biomass limits, without any consideration of, or mitigation of the likely negative influence on the control of sea lice on fish farms and interactions with wild fish, both at existing sites and any new exposed sites (and "intermediate" sites) that DZR might incentivise.

It would be inconsistent with both its duty under the Regulatory Reform (Scotland) Act 2014 to protect and improve the environment (including managing natural resources in a sustainable way) and its duty to further to further the conservation of biodiversity under the Nature Conservation (Scotland) Act 2004 Act, for SEPA to exercise its regulatory functions through the DZR system to promote economic growth in fish farming if, in doing so, it fails to further the conservation of wild salmonids and protect and improve the environment.

In any event, should put DZR proposals on hold until, firstly, the control of sea lice impacts on wild fish has been examined by the Rural Economy and Connectivity Committee, which will occur in Spring 2018, and its recommendations have been translated into practice and, secondly, until the future of Slice, as the only in-feed treatment for lice, has been resolved.

S&TCS warmly welcomes the overarching commitment from SEPA that it will "*help ensure that fish farming in Scotland is world leading in the way it manages and minimises risks to the environment and fish health*", but to achieve that world-leading position, there has to be very significant change indeed in Scotland as against, for example, the best practices developed in Norway and elsewhere.

As part of that effort S&TCS particularly welcomes SEPA's implied commitment to new fish farming techniques involving closed containment. DZR should not only be aimed at moving the sector to offshore sites, but should also incentivise the industry to move into closed containment and not provide perverse incentives that run counter to that change in the way salmon is farmed.

Even in the limited context of benthic pollution only, S&TCS is doubtful as to the real effect of DZR on existing farms, which appears not to be about improving actual environmental performance, but improving apparent compliance with CAR. SEPA needs to explain more fully what the real effect of DZR on the sea bed at existing farms is anticipated to be.

The persistence of 'unsatisfactory' benthic reports at fish farms reported to SEPA over recent years suggests that modelling is not always that reliable. The data shows that modelling to date has been unable to properly predict the likely impact on the seabed and keep it within satisfactory limits at about 50% of farms. This shows that SEPA should be far more cautious as to the accuracy of modelling.

S&TCS fears that DZR will simply result in offshore farms being set up in addition to those already in sheltered waters, with no overall environmental benefit to the Scottish marine environment, including to wild salmonids. It would not be acceptable for new offshore, DZR-regulated sites to be in addition to those inshore protected sites. SEPA must also identify clearly how it will reduce the biomass of farmed fish at inshore protected sites and close the most sensitive sites.

If DZR is to be implemented, then there must be full public and statutory consultation at each farm seeking to move to DZR. SEPA is reminded of its duties under the Environmental Information (Scotland) Regulations 2004 to proactively publish and disseminate environmental information, which it can fulfil by setting up a system of detailed, online and early publication of all site-specific information.

In summary, S&TCS believes DZR has the potential to make the interaction between farmed and wild fish considerably worse. The proposals do not consider the likely impact on wild fish if biomass limits are lifted. Only with further thought, including a clear plan to reduce inshore farming in sheltered and 'sensitive' sites, and with the integration of the control of sea lice and the impact on wild fish with SEPA's DZR proposals, does S&TCS believe that significant progress, to reduce the impacts of fish farms on the wider marine environment, can be made.

1. Introduction

1.1 Salmon & Trout Conservation Scotland (S&TCS) welcomes the opportunity to respond to this consultation on the proposed changes to the way SEPA intends to regulate the fish farming industry.

1.2 S&TCS agrees with SEPA that there is a need to "*strengthen environmental controls so that the risks to Scotland's environment from existing fish farms and future new farms is minimised*". S&TCS is pleased that this shows SEPA appreciates that the current environmental controls in place do not minimise the risk to Scotland's environment from existing fish farms (albeit that only some of those risks are currently considered by SEPA to come under SEPA's statutory functions).

1.3 S&TCS also welcomes SEPA's commitment that it has "*made clear that compliance with environmental standards is the minimum expected of all those we regulate in every sector".* However, as SEPA knows, the fish farm sector is currently operating well below compliance with environmental standards for benthic impact as indicated by SEPA's own data, published on the Scotland's Aquaculture database, and analysed in this response.

1.4 SEPA will also appreciate that poor compliance across the fish farming industry not only relates to benthic impact from organic wastes, but also to the over-use of azamethiphos[1], emamectin benzoate and other sea lice treatments controlled by SEPA under CAR.

2. The control of sea lice impact on wild fish

2.1 S&TCS is very disappointed indeed that the major impact of fish farming on wild salmonid fish - the harm caused by farm-derived sea lice (and other diseases emanating from fish farms) - is not considered in the DZR consultation at all.

2.2 In January 2017, when the likely proposals for DZR first became known, S&TCS warned publicly against a removal of biomass limits on salmon farms without SEPA first considering how to protect wild salmon and sea trout from the increased numbers of sea lice parasites likely to be produced on the farms. It is simple maths - more fish on a farm is likely to means more lice on the farm and more juvenile lice leaving the farm to infect wild fish, even if average sea lice numbers per farmed fish remain the same, or may even be lower. S&TCS is therefore disappointed that SEPA did not alter its plans to consider the impact of DZR on wild salmonids.

2.3 It is worth recalling that SEPA recognised as long ago as 2000 that "*one of the major difficulties facing the industry is the proliferation of sea lice in marine salmon farms*" and that this "*may be contributing to the decline of these wild stocks where farms lie close to migration routes*"[2]. This has often been repeated, for example, in 2005 that "*there is an increasing weight of*

[1] In April 2017, S&TCS alerted SEPA to levels of use of azamethiphos in Scottish sea farms. SEPA is understood to be investigating the apparently very frequent use of azamethiphos on a significant number of farms.

[2] SEPA (2000) Policy on Regulation and Expansion of Caged Fish Farming of Salmon in Scotland, Policy 40, Version 1.0, 11th September 2000

circumstantial evidence to support the view that sea lice from salmon farms are being linked to heavier infestations in the wild stock which is likely to be a contributory factor in the decline of wild stocks and in particular of indigenous sea trout populations"[3].

2.4 Since then, the assessment of fisheries scientists across the salmon farming world has hardened considerably and it is no longer tenable to suggest that the impact of fish-farm derived sea lice on wild fish is insignificant, somehow unknown or merely theoretical, as parts of the fish farming industry continue to contend.

2.5 Much else has changed since SEPA stated in 2005 that "*effective environmental protection is promoted by a co-ordinated approach to Crown Estate leasing and SEPA consenting that seeks to prevent development of sites which will need to depend upon routine and prophylactic chemical use"*[4] to control sea lice.

2.6 Those 2005 claims have proved to be rather optimistic. Indeed, the fish farming industry has developed a great number of sites that are, by common acceptance, completely dependent upon both routine and prophylactic treatments for sea lice. Resistance to the chemical therapeutants is widespread. Doses and frequencies of treatment have increased accordingly to compensate, as SEPA has recently acknowledged with respect to both emamectin benzoate (Slice) and azamethiphos (Salmosan). Non-chemical treatments (such as the use of cleaner fish, or thermal or freshwater treatments) cannot yet be relied upon alone to deal with sea lice, including to a level that is sufficient to protect wild fish.

2.7 SEPA has recognised for nearly two decades that "*effective sea louse treatment is nevertheless seen to be fundamental for the continued success of salmon farming…"* and that *"control over the level of lice infestation necessary to protect wild fish stocks far exceeds that required by fish farm operators purely on economic grounds and the actions required to achieve these very low levels requires additional cooperation and investment by the industry in carrying out more effective lice counts and treatments"*[5].

2.8 Albeit that it has very rarely performed its role in protecting wild fish, in 2005, SEPA did acknowledge that it did have a role in controlling the impact of sea lice on wild fish through the CAR system, by ensuring that sea lice infestation on farms can be managed, using biomass limits, to protect wild fish.

2.9 For example, in its Fish Farm Manual, SEPA stated that "*in order to better protect wild salmonid stocks however, SEPA has adopted a Limiting Factor approach to consenting marine caged fish farms. SEPA may, in determining biomass limits for sites where proximity to important wild stocks is considered as a significant issue, impose a biomass limit equivalent to that biomass which can be effectively treated for seal ice infestations using an authorised*

[3] SEPA (2005) Regulation and monitoring of marine cage fish farming in Scotland –a procedures manual.
[4] SEPA (2005) Regulation and monitoring of marine cage fish farming in Scotland –a procedures manual. Section 2 pre-application consultation.
[5] SEPA (2000) Policy on Regulation and Expansion of Caged Fish Farming of Salmon in Scotland, Policy 40, Version 1.0, 11th September 2000

sea lice medicine"[6] and that, when setting consent limits, "*in certain instances to protect important wild salmonid stocks, SEPA will limit the biomass to that which can be treated at the site using an authorised sea lice medicine*."[7]

2.10 However, following the Aquaculture and Fisheries (Scotland) Act 2007, SEPA seems to have 'passed the sea lice buck' completely to Marine Scotland and the Fish Health Inspectorate and has taken no account of the impact of farmed-derived sea lice on wild salmonids in any of its CAR licensing decisions.

2.11 Of course, as SEPA will be aware, the Fish Health Inspectorate only has powers to control sea lice on fish farms from the point of view of the welfare of the farmed animal under the Aquaculture and Fisheries (Scotland) Act 2007, as amended, and as SEPA noted in 2000, the protection of wild salmonids requires a greater level of control of sea lice on fish farms than the farmed fish do.

2.12 Nevertheless, this year, the SEPA View article[8], which accompanied the consultation, again notes that "*sea louse infections on salmon farms increase the number of sea lice in the environment and this may have an effect on wild salmon*". A 2017 report for Marine Scotland and Highlands and Islands Enterprise[9] lists the main challenges facing the industry, with sea lice at the top of that list: "*the problem of sea lice on salmon ...has been increasing".*

2.13 Despite this, SEPA fails to recognise that, currently, the limit on permitted biomass under CAR remains the only 'proxy' control over the release of juvenile 'free swimming' stage sea lice from many existing fish farms and the impact of those lice on wild fish.

2.14 Evidence repeatedly shows a direct and strong correlation exists between on-farm biomass and the number of ovigerous female lice per farmed fish. In short, the greater the biomass on a fish farm, the greater the number of ovigerous sea lice that are likely to be present and the greater the risk of infestation of wild salmon and sea trout from the fish farm concerned.

2.15 S&TCS is therefore very concerned that the current inability of many fish farmers to control sea lice, at the same time as remaining within their CAR licence conditions at the biomass of farmed fish they hold on their farms, has been completely overlooked by SEPA in this consultation.

2.16 SEPA is reminded that the North Atlantic Salmon Conservation Organisation (NASCO), to which Scotland is a party, has produced Guidance on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks[10]. NASCO's agreed international goal for sea lice is that "*100% of farms to have effective sea lice management*

[6] SEPA (2005) Regulation and Monitoring of Marine Cage Fish Farming in Scotland – a Manual of Procedures, page 24
[7] SEPA (2005) Regulation and monitoring of marine cage fish farming in Scotland –a procedures manual. Section 5.
[8] SEPA (2017) SEPA View 26th June 2017
[9] The Value of Aquaculture to Scotland - a report for HIE and Marine Scotland - June 2017
[10] NASCO Guidelines adopted in June 2009 and revised in June 2010. Document SLG (09) 5

such that there is no increase in sea lice loads or lice induced mortality of wild salmonids attributable to the farms."

2.17 Best management practices identified by NASCO for achieving the international goal include "*risk-based site selection*" and "*lice control management programmes appropriate to the number of fish in the management area*".

2.18 In this context, SEPA should not bring in DZR to lift biomass limits, without any consideration of, or mitigation of the likely negative influence on the control of sea lice on fish farms and interactions with wild fish, both at existing sites and any new exposed sites (and, indeed, "*intermediate*" sites) that DZR might incentivise.

3. SEPA's legal duty to further the conservation of wild salmonids

3.1 In proposing DZR, SEPA needs to consider its legal duty to further the conservation of biodiversity in the course of carrying out its functions, as required by the Nature Conservation (Scotland) Act 2004.

> *Section 1*
> *Duty to further the conservation of biodiversity*
> *(1) It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions.*

3.2 S&TCS recognises that SEPA has a balancing act to perform here, in trying to facilitate the delivery of the expansion in the fish farming industry that is Scottish Government policy, but also meeting its legal obligations under the 2004 Act to conserve biodiversity.

3.3 Section 51 of the Regulatory Reform (Scotland) Act 2014 requires SEPA to carry out its functions *"for the purpose of protecting and improving the environment (including managing natural resources in a sustainable way)"* and only *"except to the extent that it would be inconsistent"* with the above duty, *"to contribute to improving the health and well-being of people in Scotland, and …achieving sustainable economic growth".*

3.4 To be clear, S&TCS believes that it would be inconsistent with both its duty under the 2014 Act to protect and improve the environment (including managing natural resources in a sustainable way) and its duty under the 2004 Act, for SEPA to exercise its regulatory functions through the DZR system to promote economic growth in fish farming if, in doing so, it fails to further the conservation of wild salmonids.

3.5 In this context, S&TCS draws attention to SEPA's Position Statement on Biodiversity (2015)[11], which states that it "*is responsible for setting standards in environmental licences that protect and help improve the state of water, land and air and the natural services that ecosystems provide. Our Nature*

[11] https://www.sepa.org.uk/environment/biodiversity/environmental-regulation-and-biodiversity/

Conservation Procedure for Environmental Licensing ensures that we fulfil our statutory duties to protect designated features in nature conservation sites (SSSIs, SACs, SPAs, Ramsar sites) in all environmental licensing regimes in a consistent and auditable manner; we will update this procedure in line with Regulatory Reform (Scotland) Act 2014 requirements. We will adopt a similar approach to protect the biodiversity interests of Marine Protected Areas once these are established. As more data become available (e.g. Habitat Map of Scotland), we will be able to extend application of the Nature Conservation Procedure to include assessment of impacts to priority habitats (those which are sensitive to activities that we regulate) in the wider countryside, outside protected sites".

3.6 S&TCS trusts that, in the two years since that Position Statement was drawn up, SEPA has now extended application of its procedures for taking into account nature conservation in its licensing activities to cover the wild fish impacts of fish farming on the UK Biodiversity Action Plan and Priority Marine Features that are Atlantic salmon and sea trout, but it must now show how DZR will be assessed with respect to wild salmonids.

3.7 S&TCS believes that the 2004 Act and SEPA's wider functions still require it to use the CAR licensing system to set licence conditions in such a way as to protect wild fish from harm caused by fish-farms.

3.8 Indeed, SEPA should already be setting biomass limits under CAR not only on the basis of what the benthic environment can support (as identified by the modelling via Autodepomod) and of what the water column can support (via the nutrient-based Locational Guidelines etc), but also on whether the operator can both effectively control sea-lice at such biomass - given that farmed-produced sea-lice harm wild fish - and, at the same time, keep within benthic and water column licence conditions for sea-lice treatment chemical residues and emissions.

3.9 SEPA should also be reviewing those existing licences where this is not the case. Regulation 21 of CAR requires SEPA to "*periodically review authorisations granted under regulations 7 and 8*" and it may do so at any time. In failing to do so, with the 2004 Act duty in mind, arguably SEPA is already not fulfilling its statutory duties and its failure is open to legal challenge.

3.10 Overall, as it stands, S&TCS believes that DZR may well make the farm-produced sea lice issue considerably worse, both at existing sites that convert to DZR and at new sites, by removing what little proxy control there is on the production of 'free swimming' stage sea lice by way of biomass limits.

3.11 Given this, it is essential that any move to DZR considers the likely impact of its changes, intended or unintended, upon wild salmonids and demonstrates clearly how those will be controlled. Before any change to DZR, S&TCS believes that SEPA should bring forward its view of the likely impact of DZR upon wild salmonids in a further consultation.

3.12 S&TCS also strongly recommends that SEPA should put DZR proposals on hold until, firstly, the control of sea lice impacts on wild fish has been examined by the Rural Economy and Connectivity Committee, which will occur in Spring 2018, and its recommendations have been translated into practice, which S&TCS believes will plug the widely accepted gap in the law

relating to the protection of wild fish and, secondly, until the future of Slice as the only in-feed treatment for lice has been resolved.

3.13 To proceed in advance of a Parliamentary process that may lead to major changes in fish farm regulation, and when the ability of fish-farms to use in-feed chemicals to control sea-lice is in serious doubt, would be foolhardy and contrary to SEPA's duties under the 2004 Act.

4. Innovative ways of farming that pose the lowest possible risk to the environment

4.1 S&TCS warmly welcomes the overarching commitment from SEPA that it will "*help ensure that fish farming in Scotland is world leading in the way it manages and minimises risks to the environment and fish health*".

4.2 Of course, SEPA will appreciate that to achieve that world-leading position, there has to be very significant change indeed in Scotland as against, for example, the best practices developed in Norway and elsewhere, but as part of that effort S&TCS particularly welcomes SEPA's implied commitment to new fish farming techniques involving closed containment.

4.3 As SEPA notes in its Foreword "*Today's farming techniques release fish faeces, uneaten feed and used medicines directly into the sea where they can interfere with marine ecosystems. The techniques also leave farms vulnerable to outbreaks of fish diseases that can result in severe losses in fish production.*

To ensure the protection of Scotland's marine environment we want to encourage fish farming businesses to find and invest in innovative ways of farming that pose the lowest possible risk to the environment and better safeguard the health of the fish."

4.4 It is clear that only farming fish in ways that ensure a complete physical and biological separation of farmed fish from the wider marine environment – in other words, closed containment techniques – can constitute those "*innovative ways of farming that pose the lowest possible risk"* that SEPA will now encourage.

4.5 While offshore sites may offer *lower* risk in relation to some impacts, such as sea bed deposition of organic wastes, the *lowest possible risk* to the environment can only be achieved in closed containment, therefore S&TCS is delighted to note, per paragraph 1.4, that minimising the risks to the environment is not only considered by SEPA in terms of "*investing in farming systems capable of operating in exposed deep water sites with strong tides*", but that this includes "*developing new techniques that intercept farm waste and allow them to be treated and possibly usefully recycled*", which again implies progression towards closed containment of farmed fish production.

4.6 In this context, S&TCS also notes SEPA's *Guidance on Determining CAR Applications to Use or Change Authorised Quantities of the Infeed Medicine Slice* (from May 2017 version 1.0), per paragraph 2 of section 2 Regulatory Guidance, that the likely EQS proposed for emamectin benzoate will mean that it is "*practically usable quantities are unlikely to be able to be authorised unless effective mitigation measures are put in place to collect fish faeces and ensure the metabolites from the administration of the medicated feed are*

contained". Here too, SEPA is effectively pointing here at the need to move to closed containment.

4.7 Given the above, it is very disappointing to note that the DZR consultation is almost exclusively and solely aimed at promoting farming in exposed waters with strong tides. It is imperative that DZR and the overall regulation of the salmon farming industry is not only aimed at moving the sector to offshore sites, but also provides and incentivises the industry to move into closed containment. Without the latter incentivisation by SEPA then the job remains only half done.

4.8 Having signposted the way forward in this way, regrettably, the DZR consultation is then completely silent on the detail of how SEPA will incentivise closed containment over both inshore and offshore open cage production – dealing only with incentivising expansion offshore. This is a major omission and should be corrected in the final proposal. S&TCS would urge SEPA to consider how best to use the changes to incentivise financially any move to closed containment technology, marine or land-based.

4.9 The Scottish Salmon Producers' Organisation (SSPO) has recently compared the shift to closed containment as akin to the 15 year change-over to electric vehicles[12]. It must the role of SEPA under the 2014 Act to incentivise and accelerate that move and certainly not to provide perverse incentives that run counter to that change in the way salmon is farmed.

5. Benthic impact and compliance with CAR

5.1 S&TCS acknowledges that the proposals for DZR are limited in SEPA's view to the control of the deposition of organic wastes on the sea bed and improving compliance with CAR licences.

5.2 However, S&TCS is doubtful as to the real effect of the proposal on existing farms, even in that limited context.

5.3 Is DZR, as it applies to existing farms, about improving actual environmental performance or is it really just about improving *apparent* compliance with CAR?

5.4 In 2012, the then S&TA published a report entitled *Organic pollution of the sea-bed under fish-farms in Scottish sea lochs 2009-2011*. In that report, S&TA noted that SEPA considers that 'unsatisfactory' reports "*present a more significant challenge both to SEPA and to responsible persons. They are an indication that the emissions arising from the site in question are of a scale that is beyond the assimilative capacity of the local environment. This classification may relate to benthic faunal or chemical impacts, unacceptable in-feed medicine residues or both…..unsatisfactory classifications cannot be ignored and they should be raised with the responsible person without delay*".

5.5 SEPA categorises 'borderline' reports as requiring that "*the responsible persons attention should be drawn to the clear indication that the performance of the site is close to having an unsustainable impact and the responsible person should at least be required to consider taking further*

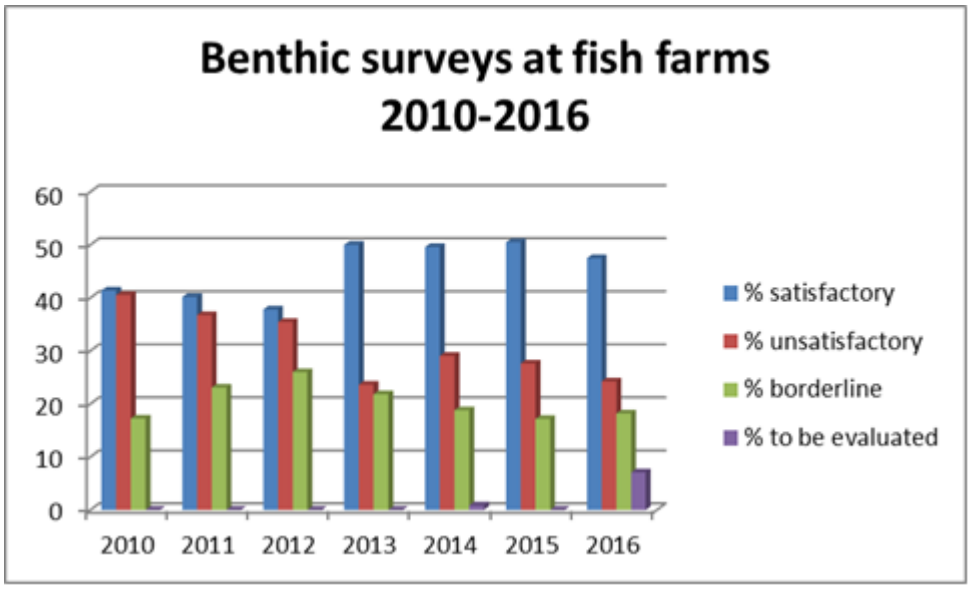
[12] Scott Landsburgh, SSPO, speaking on BBC Radio 4 Farming 7th August 2017

action such as a review of the management of the site to improve efficiency of feed use or an extension to the fallowing period"[13].

5.6 Despite the above, over the three years, from 2009 to 2011, S&TA noted that 44% of the 311 benthic reports supplied to it under an FOI request made at that time were deemed 'unsatisfactory' by SEPA (indicating too much organic pollution of the sea bed at the fish-farms concerned) and 21% were classified as 'borderline'. Only 34% were deemed to be 'satisfactory'.

5.7 Since then, the picture has changed.

5.8 S&TCS has now analysed the data published routinely on the Scotland's Aquaculture website to show what proportions of benthic surveys have been considered unsatisfactory, satisfactory or borderline since then.



5.9 As the chart shows, in 2013, there is a significant jump in the percentage of satisfactory reports and an equally sharp reduction in unsatisfactory reports.

5.10 Of course, it is doubtful that the industry suddenly became very much less polluting in 2013 as against 2012, but this change did reverse an inconvenient trend from 2010 to 2012, with % unsatisfactory reports rising and % satisfactory falling.

5.11 The 'improvement' in compliance in 2013 may be explained by the move to site-specific AZEs. SEPA's *Regulation and monitoring of marine cage fish farming in Scotland – a procedures manual Attachment XV – Marine Cage Fish Farm Licence Review*, published first in April 2011, encouraged fish farmers to move to site-specific AZEs after experiencing extent failures (organic pollution failure at the edge of the standard rectangular AZE), SEPA stating that "*following a first extent failure if the site is not operating on a site specific AZE then the responsible person should apply to vary their licence to include a site specific AZE*".

[13] SEPA (2011) Attachment XV Marine Cage Fish Farm CAR Licence Review published 1 April 2011 version 1.0

5.12 This had the effect of moving many farms to site-specific AZEs, which appears to have had the knock-on effect of putting them into the 'satisfactory' category by their next production cycle (ie by 2013), where they would have been 'unsatisfactory' had they persisted with the old standard rectangular AZE. Indeed, S&TA's 2012 Report expressly warned against this.

From S&TA (2012) *Organic pollution of the sea-bed under fish-farms in Scottish sea lochs 2009-2011:*

"***Altering the AZE to improve the classification?***
Of some concern is the observation that the reports obtained by the S&TA appear to suggest that SEPA encourages farmers to apply for site-specific AZE and monitoring in order to allow 'unsatisfactory' farms to achieve 'satisfactory' classification, but without necessarily changing the overall output of organic wastes from the farm concerned.

For example, for one farm, SEPA "recommend that this site move to a site-specific footprint to try to improve self-monitoring result". SEPA has recorded its suggestions that a move to site-specific monitoring for at least 15 other farms.

For another SEPA acknowledges that "the change to site specific MPS [Monitoring Protocol Specification] has resulted in an improvement to the classification".

There is a worrying indication that SEPA appear to equate substantive actions to reduce the benthic impact where a farm's current level of production is unsustainable - by way of a reduction in maximum biomass and/or by increasing fallow periods between production cycles - with moving to a site-specific AZE[14]. Patently the former measures will reduce the actual level of impact on the seabed from a particular fish-farm, while the latter merely alters the way that impact is measured and therefore classified".

5.13 If, as seems likely, this 2013 'improvement' occurred with no change in actual impact on the sea bed, as the farms were still the same farms discharging in much the same way as before, similarly it is important that the move to DZR does not have the very same effect – an artificial improvement in compliance without any actual improvement in sea bed pollution.

5.14 However, in the Annex to the DZR Consultation – Technical Information, the very last section, last paragraph, SEPA acknowledges that *"in contrast, initial estimates indicate that the vast majority of sites (67 out of 70) that struggle to meet the present limits on the extents of seabed impacts are expected to be able to meet the new, depositional zone standard"[15].*

5.15 S&TCS is concerned therefore that the new system of DZR will have the effect of again improving apparent compliance - as SEPA appears to assuring the industry that it will – without any improvement to the actual pollution of the sea bed under these 67 farms.

5.16 SEPA needs to explain more fully what the real effect of DZR on the sea bed at existing farms is anticipated to be.

[14] For example, see SEPA (2011) Laxfirth Voe East (Site 2) report of benthic survey, 29th April 2011
[15] SEPA (2017) Annex Depositional Zone Regulation Consultation Technical Information

6. Modelling

6.1 At the heart of the DZR proposals, SEPA argues that biomass limits are not required because modelling of the sea bed has improved. Per paragraph 2.8 of the consultation, SEPA states that "*we will not need a maximum biomass limit because we will be better able to predict and then monitor environmental effects than we have been previously even at such high stocking levels".*

6.2 The persistence of 'unsatisfactory' benthic reports at fish farms reported to SEPA over recent years, as shown above, suggest that modelling is not always that reliable. All of these unsatisfactory surveys have occurred at farms where biomass limits had been derived from modelling of the likely benthic impact that would, it was believed, would produce 'satisfactory' surveys. In fact, the data shows that modelling to date has been unable to properly predict the likely impact on the seabed and keep it within satisfactory limits <u>at about 50% of farms</u>.

6.3 This shows that SEPA should be far more cautious as to the accuracy of modelling. There is no room for complacency as to the predictive ability of models used in the fish farming industry.

6.4 In order to avoid further surprises in future, should SEPA still be minded to bring in DZR, S&TCS would urge the use of very wide margins of safety indeed within the modelling of sites to be regulated under DZR.

[Please note that the remainder of the subheadings in this Response follow those used in the consultation document]

7. The key features of DZR

7.1 While, on the face of it, S&TCS can see that moving production, in the short to medium term, to offshore locations with strong tides, deeper waters and greater flushing is likely to result in greater dispersion of wastes and sea lice treatment chemical residues, it is not a given that such offshore farming in exposed waters will necessarily reduce all environmental impacts across the board.

7.2 S&TCS believes that in order to justify easing regulation and promoting offshore open cage fish farms, SEPA needs to provide the evidence that not only will the benthic footprint under the fish farms be acceptable and be subject to close monitoring, but also that all other environmental impacts are reduced.

7.3 SEPA recognised in 2000 that "*one of the major difficulties facing the industry is the proliferation of sea lice in marine salmon farms*" and that this "*may be contributing to the decline of these wild stocks where farms lie close to migration routes*"[16].

7.4 Many of those migration routes may also be offshore, yet no evidence has so far been provided by SEPA on the impacts of a move offshore on wild fish – or of the proposed expansions at an intermediate or inshore sites.

7.5 To make a decision to alter regulation to provide an incentive for new farms, and for existing farms to expand without biomass limits, in the absence of such evidence is unreasonable and would fail to meet SEPA's legal duties, including under the 2004 Act.

7.6 S&TCS welcomes SEPA's recognition that it is good to try to locate farming in exposed waters "*rather than in more sensitive parts of the marine environment"*[17] but SEPA also needs to show how it will reduce, to near zero, the impacts on wild salmonids, both from existing fish farms that may persist and benefit from DZR and those new sites anticipated in the offshore zone.

7.7 SEPA must avoid incentivising heavy investment in offshore, but still open cage fish farms, merely to discover that unforeseen environmental impacts result from the move to exposed waters with strong tides, which may or may not fall under SEPA's statutory functions

7.8 While it might be perceived to help to deliver Scottish Government's major expansion of salmon farming production, S&TCS fears that DZR will simply result in offshore farms being set up in addition to those already in sheltered waters, with no overall environmental benefit to the Scottish marine environment, including to wild salmonids.

---

[16] SEPA (2000) Policy on Regulation and Expansion of Caged Fish Farming of Salmon in Scotland, Policy 40, Version 1.0, 11th September 2000

[17] Consultation doc, at page 2 of 11

8. Making it easier to develop exposed sites

8.1 SEPA states that one of the key features of DZR is to make it easier to develop exposed sites.

8.2 While the emphasis is on expansion of the fish farming industry in offshore exposed deep-water sites with strong tides, the offer to the salmon farming industry being the biomass will be able to rise in such sites beyond the current 2,500 tonne limit, there must be a reciprocal intention, and clear plans from SEPA, so that the fish farming industry should expect permitted biomass to be reduced in sheltered sites, either under the old CAR system or under DZR, to reduce existing impacts.

8.3 If the DZR system is ultimately adopted, it must ensure that the incentive to move existing farms away from environmentally sensitive, less exposed and inshore sites is strong.

8.4 S&TCS would suggest that SEPA should be looking to reduce biomass at farms currently in Loch Fyne, Loch Roag, Loch Ewe, Little Loch Broom, Loch Linnhe and others.

8.5 To re-iterate, it would not be acceptable for new offshore, DZR-regulated sites to be in addition to those inshore protected sites. SEPA must identify clearly how it will reduce the biomass of farmed fish at inshore protected sites.

8.6 Specifically at paragraph 2.20 on page 7 of 11, SEPA needs also to explain fully what it considers to be an "*intermediate site*".

8.7 SEPA refers to ten or so farms where the current biomass limit is capped at 2,500 tonnes which SEPA currently consider to be intermediate sites and, per page 3 of the Technical Annex, SEPA also suggests that there could be "*an increase in the number of farms in intermediate waters with depositional zones greater than 0.3 km^2*".

8.8 S&TCS has obtained a list from SEPA of these 'ten or so' and it includes farms that could not properly be considered to be offshore or exposed sites and which already pose a threat to wild salmonids.

8.9 In that vein, S&TCS believes that prior to bringing in DZR, it is important that SEPA makes it clear what it considers to be, per paragraph 2.2 "*exposed waters with strong tides*", as against "*shallow sheltered parts of the coast*" and consults widely upon the same.

8.10 Prior to bringing in DZR it must make clear presumably by some sort of mapping data, where it understands DZR will be acceptable or where removal of permitted biomass limits will not, or is unlikely to be acceptable.

8.11 Similarly, per footnote 5 of the Technical Annex at page 4, SEPA is not clear which sites it considers to be "*higher risk*" sites, particularly with respect to "*the potential to compromise achievement of a river basin management plan*", the licensing of which, by SEPA, would therefore be unlawful.

8.12 The Technical Annex is silent on how "intermediate" and "higher risk" sites are categorised and, without that, S&TCS believes the current

consultation is inadequate to enable consultees to provide a proper response to what is apparently being proposed. To the end, S&TCS believes that DZR cannot be implemented without a further, more detailed consultation.

9. Improved environmental monitoring arrangements

9.1 S&TCS strongly supports SEPA bringing within in-house, or under its direct control, the monitoring of the effects of farms on the seabed, to replace the current production of reports by consultants hired directly by the fish farmers, or by the fish farmers themselves.

9.2 Surveying should be at a similar or increased frequency to the current surveying. There should be no reduction going forward in monitoring of the seabed, particularly at those sites where biomass is increasing.

9.3 The proposed feedback mechanisms, to avoid damage being caused to the seabed at DZR farms, are welcome, but, at paragraph 2.14, SEPA is not sufficiently clear as to what action will follow the failure to heed SEPA advice and the breaching of seabed environmental standards. SEPA states that it "*will consider amending licence conditions and taking appropriate enforcement action*".

9.4 S&TCS believes that the *quid pro quo* for removing biomass limits must be a clear understanding that, under those circumstances, SEPA will normally amend licence conditions and will take enforcement action, not merely 'consider' it. The significant 'carrot' being offered to the industry with DZR must bring with it a clear understanding that the 'stick' will be used if poor compliance continues.

10. New depositional zone limits

10.1 The new depositional zone limits proposed are for a standardised maximum area of seabed that can be affected of 0.5km^2.

10.2 This does appear to be a significant increase in the area of seabed that can be affected under some fish farms, although it is appreciated that the depositional zones under DZR are not necessarily analogous to the AZE (allowable zones of effect) under the current system.

10.3 While in exposed sites, expansion to 0.5km^2 may not be a significant concern, within sheltered sites or enclosed lochs, many that already hold a number of sites, SEPA neds to demonstrate how it will to ensure that, on a waterbody scale, the cumulative impact of a number of DZR depositional zones is acceptable and how an upper limit will be placed upon the proportion of seabed in a waterbody that can be subject to deposition from fish farms, to ensure compliance with WFD.

10.4 It had been understood that this limit was to be set at 5% of the sea bed of a water body, but the consultation does not identify a figure. SEPA therefore needs to explain how, under DZR, it will be able to meet WFD obligations to achieve good ecological status and to avoid deterioration, in line with the Scotland River Basin District (Standards) Directions 2014, specifically the spatial standards applicable to transitional water bodies and coastal water bodies.

11. How will DZR be implemented?

11.1 If, despite the forthcoming Scottish Parliamentary inquiry and the need identified above to consult more fully on much of the detail of what is being proposed, DZR is implemented in the near future, S&TCS believes that SEPA should require, without exception, all applications for conversion to DZR to be advertised in full.

11.2 These are likely to be complex applications and full public scrutiny is warranted.

11.3 Further, all subsequent increases in biomass should be subject to public and statutory consultation processes, and the justification for each increase must be recorded, for example on the Scotland's Aquaculture database.

11.4 As S&TCS has proposed in the past, benthic and other survey data published online should not be limited to the one-word summary (eg 'satisfactory' or 'unsatisfactory') of SEPA's assessment of benthic surveys, but the full SEPA assessment and the benthic survey itself.

11.5 SEPA is reminded of its duties under the Environmental Information (Scotland) Regulations 2004. As DZR concerns the licenced deposition and assimilation of farm wastes into the wider 'public' environment, at the inception of any new DZR system, SEPA must comply with its duty to proactively publish and disseminate environmental information by setting up a system of detailed, online and early publication of all site-specific information.

12. Other changes to licences

12.1 Almost in passing, SEPA also suggests that CAR licences will change under DZR and that "*simpler joined-up outcome-based licences*" will be introduced.

12.2 What these licences may look like is not known. The Technical Annex too is silent on what this might mean in practice.

12.3 Again, there has been inadequate consultation. SEPA may well have in mind what a typical licence might look like, but it should now publish and consult upon this proposed change.

13. Other issues; information - submission and publication of biomass records under DZR

13.1 In addition to the publication of benthic survey data generated under DZR, S&TCS notes, per footnote 3 on page 5 of 11, that SEPA expects changes to the quality and quantity of information collected from both its own monitoring and from fish farmers.

13.2 Referring again the Environmental Information (Scotland) Regulations 2004, SEPA has a duty to proactively publish such information and S&TCS would urge SEPA in developing these proposals to consider, at every stage, how best to publish the fullest possible information about fish farms proactively, for example, via the Scotland's Aquaculture website.

13.3 S&TCS believes that it is essential that, although DZR proposes the removal of upper limits for biomass, in common with the existing licensing of marine fish farms under CAR, SEPA requires the reporting of actual monthly biomass figures held on each farm, with that data being published by SEPA on the Scotland's Aquaculture database, as it is now.

13.4 There are three reasons for ensuring that biomass records must still be reported and published.

13.5 Firstly, provision of information to the public should not be reduced from the current publication of data on the Scotland's Aquaculture database. It would not be acceptable for there to be less information than currently available to the public concerning the operation of fish farms and SEPA should not undermine the Environmental Information (Scotland) Regulations 2004 and the duty therein on all Scottish public authorities both to provide information upon request and to proactively public environmental information.

13.6 Secondly, on-farm biomass figures are not merely useful in terms of assessing the timing of benthic surveys and likely peak water column impacts, as currently regulated under the CAR, but they also provide useful scientific data as to the state of the sea lice problem on fish farms.

13.7 It is only by considering actual biomass data at the same time as aggregated sea lice data, currently published as average number of lice per farmed fish, that some indication of the sea lice load produced from fish farms can be made. This is data relied upon by District Salmon Fishery Boards and Fisheries Trust fish managers.

13.8 Finally, SEPA will already recognise that many planning authorities now apply planning conditions to permissions for new farms or alterations to existing fish farm equipment, that require further application should permitted biomass on the fish farms be increased.

13.9 Without actual monthly biomass data provided to SEPA and published, it is not clear under DZR how those conditions could be enforced or how existing fish farms that have no biomass limits would remain, as they are now, open to public scrutiny.

13.10 As to the legal wording of both existing, and indeed any new planning conditions that local authorities need under law to apply to control interactions with wild fish and wider marine ecology, as they are based upon permitted biomass, SEPA needs to consider and indeed consult upon how the validity and enforceability of those planning conditions can be maintained under DZR, where no biomass limits are envisaged.

13.11 If SEPA fails to address this aspect of the utility of biomass data, any changes to the way in which SEPA regulates fish farms under CAR may have unintended consequences on the conditioning of planning permissions for the control of impact of fish farms on wild fish or wider marine ecology.

Summary-only answers to the specific questions, in addition to the detail given above:

1. **Do you support the principle of trying to make it easier and more attractive for fish farming business to develop in exposed deep waters and strong tides?**

   S&TCS does support the principle of moving in the short to medium term to such sites, so long as the sites are truly in exposed areas with deep waters and strong tides. However, SEPA must provide evidence that such areas really are lower risk, across all likely environmental impacts. This support also comes with the *quid pro quo* that this must mean the reduction by SEPA of biomass and the removal of fish farms from sheltered shallow water and with poor tidal exchange, which also, as a general rule, appear to be those fish farms most associated with damage to wild salmonid populations.

   The overwhelming need, identified indirectly by SEPA but not sufficiently addressed by DZR, is for SEPA to incentivise a move to closed containment farming of salmon.

2. **What are your views on the proposal to remove the current cap of 2,500 tonnes on the maximum fish biomass that a farm can stock?**

   From the point of view only of benthic impact and impact on the water column, S&TCS believes there is some limited merit in SEPA's plans to allow removal of the current 2,500 tonne cap, but only if that does indeed result in farms moving to exposed deep-water and strong tidal locations and is not merely an expansion to new sites, with older, less exposed farms being retained.

   However, a prerequisite for any such removal must be that SEPA explains how the proxy control on sea lice production that current biomass limits provide will be replaced, and SEPA can demonstrate that limits on sea lice therapeutants under CAR will still allow proper sea lice control to be achieved where no biomass limits apply.

   S&TCS believes that amendments to the Aquaculture and Fisheries (Scotland) Act 2007, in the way that S&TCS has already proposed to Scottish Government, are required to ensure that the protection of wild fish from fish farming impacts is provided for in law, and that these much be in place prior to any move to DZR, which it is hoped will follow the Parliamentary Inquiry referred to above.

3. **Do you support our proposal to allow fish biomass to increase by up to 10% per production cycle provided compliance with the proposed seabed standards is not threatened?**

   In respect of benthic pollution only, S&TCS would support the proposal to allow a 10% increase per production cycle on the basis that SEPA's proposed 'feedback' management would identify when seabed standards are being breached and 'hard' enforcement would follow.

   Of course, SEPA must ensure this is possible within the obligations of WFD to achieve good ecological status and not to permit any deterioration in water bodies.

The proposed 10% increase in fish biomass on farms must also be assessed as against other environmental impacts, including the threat to wild salmonid fish.

There is a clear and unambiguous link between sea lice numbers on a fish farm and biomass of fish within the cages and therefore while the sea bed may be capable of accommodating a 10% increase in biomass, with impact contained within environmental limits, it is not clear how 10% increases in biomass will be assessed for their impact on sea lice production and consequent impact on wild salmonids.

4. What are your thoughts on our proposal that for DZR sites we will take on responsibility for monitoring the effects of the farms on the seabed?

S&TCS strongly supports SEPA bringing within in-house or under its control the monitoring of the effects of farms on the seabed.

This should be at a similar frequency to currently, but there should be no reduction going forward in monitoring of the seabed particularly at those sites where biomass is increasing.

All data should be proactively published as required by law.

5. What are your views on our proposal that there should be a break in production if seabed standards are breached to allow the seabed to recover?

S&TCS strongly supports that there should be a break in production and that breaks in production should be longer than the current six to eight weeks fallow period under the existing CAR system.

SEPA must make it clear that the break in production will persist for as long as is required for seabed to recover.

Further, S&TCS believes SEPA should consider whether a similar break in production should also follow the failure of a site to control sea lice within the CAR-licensed limits for chemical therapeutants.

Indeed, it would be wise of SEPA to consider with Scottish Government the integration of regulation of fish farms, so that breaks in production for the breach of seabed standards and breaks in production where sea lice numbers have become unacceptable, are run along similar lines.

6. What are your views on our proposal that under DZR the maximum area of seabed that can be affected by the deposition of farm wastes would be standardised to 0.5km^2?

S&TCS has no objection to the standardisation on the assumption that these farms will genuinely be in exposed deep water areas with strong tides.

However, SEPA must demonstrate how it will ensure compliance with European Directives in terms of the area and proportion of seabed within a waterbody that can be affected by deposition of farm wastes. S&TCS would

strongly suggest that, on a waterbody level, there must be an upper limit to the maximum area of seabed that can be affected by deposition.

7. Are there any other comments or suggestions you would like to make about the proposals?

Please see above. The major concern S&TCS has of these proposals is their effect on the interactions between farmed and wild fish which S&TCS believes may be made considerably worse under DZR. The proposals do not consider the likely impact on wild fish if biomass limits are lifted.

Only with further thought, including a clear plan to reduce inshore farming in sheltered and 'sensitive' sites and the integration of the control of sea lice and the impact on wild fish with SEPA's DZR proposals, does S&TCS believe that significant progress, to reduce the impacts of fish farms on the wider marine environment, can be made.