

CCN response to SEPA consultation on the use of biomass or feed to regulate the organic output from marine pen fish farming to the environment

1) What is your name?

The Aquaculture sub-group of the Coastal Communities Network

2) What is your email address?

info@communitiesforseas.scot

3) What is your interest in the use of biomass or feed to regulate the organic input from marine pen fish farming to the environment?

Interest: Community group.

Other: the Aquaculture sub-group of the Coastal Communities Network represents 11 different community groups in Scotland.

4) Do you think that these are the appropriate criteria to allow us to make the right decision on the proxy for pollutant load?

Yes

Don't know

No

If no, why not?

The CCN Aquaculture sub-group believes that switching to using feed rates as a proxy for pollution is an improvement to the method, which requires a calculation of the likely biomass in the cages. Monitoring feed use would reveal when farms have been deliberately overstocked, but under-declared. This change should be adopted as soon as possible.

That being said, while monitoring organic fluxes may reduce the amount of organic pollutant loads on coastal marine environments, it will not eliminate the problem. Consequently, we strongly recommend that the Scottish Government consider land-based recirculating aquaculture systems, which would entirely eliminate the organic pollution problem that underpins this consultation, with at-sea closed or semi-closed containment systems as an interim measure, to capture organic waste and substantially reduce the amount released into the sea. This should then be disposed of responsibly on land or used as a raw material to boost the circular economy.

5) Do you have any evidence for changing our standard assumptions for converting biomass to feed rate?

Yes

Don't know

No

If yes, please describe your evidence to us

The communities we represent have no confidence that the present auditing system for biomass can uncover the accidental or deliberate under-reporting of biomass. We have heard reports that this happens on purpose and is concealed from official records, and we have passed these reports to SEPA for investigation. It is easier to under-declare stocked biomass than to conceal records of feed purchases.

6) Do you have any evidence for changing our standard assumptions for converting feed usage to pollutant loads?

Yes

Don't know

No

If you answered yes, please tell us about the evidence

7) Do you consider that a feed-based control in the form of daily feed usage averaged over 90 days would appropriately capture the period of peak feed use within a production cycle but be long enough to smooth out short-term, daily variability in feed use?

Yes

Don't know

No

Share your views with us

The CCN Aquaculture sub-group believes that while feed-based control may help to regulate the organic pollutant load, it will not protect marine ecosystems from detrimental organic pollution loads from salmon farms. That being said, averaging the daily feed usage over 90 days would capture the period of peak feed use within the production cycle and allow farm operators sufficient time to move fish to other cages/farms, if a farm was approaching its feed limits, in order not to exceed its benthic pollution thresholds.

8) Do you have any comments on or suggestions for improving how we calculate the pollutant load and undertake the modelling?

Share your views with us

No. However, the CCN Aquaculture sub-group strongly recommends that the Scottish Government consider land-based recirculating aquaculture systems, which would eliminate the organic pollution problem that underpins this consultation, with at-sea closed or semi-closed containment systems as an interim measure, to capture organic waste and substantially reduce the amount released into the sea. This should then be disposed of responsibly on land or used as a raw material to boost the circular economy.

Is the relationship between biomass and pollutant load robust?

Yes

Partly

No

Is the relationship between feed use and pollutant load robust?

Yes

Partly

No

9) Do you have any comments on or suggestions for improving the proposed permit conditions?

Share your views with us

SEPA's figures show high levels of CAR licence non-compliance by fish farms, a high proportion of which is due to levels of pollution that are harmful to life on the seabed, which is a direct consequence of the fish biomass in the farms. This is likely to be due to either a failure in pollution modelling of waste deposition, false assumptions about the environment's ability to assimilate this pollution, and/or that the pens have been overstocked with fish, accidentally or deliberately.

Fish farms are already the largest polluter of Scotland's seas, according to SEPA, and the industry now wants to double in capacity by 2030. Breaches of fish farm CAR licences should be seen in the context of their already exceptionally generous permission to pollute the sea, which seems to be unique to this industry and is at the expense of others, whose jobs depend on the sea not being polluted, such as fishermen in our communities.

It is easy to overlook the fact that fish farms are already allowed to pollute the seabed far beyond the level, at which the environment can assimilate their waste in the pollution mixing zone under and around each farm. For farms containing several thousand tonnes of fish, these mixing zones can be very large. It is vital to ensure that farms stock biomass that is within the environment's carrying capacity.

The uniquely high level of fish farm pollution is a direct consequence of the industry using open nets, which are the cheapest method, rather than the best available technology. No assessment has been made of the overall ability of Scotland's marine environment to assimilate fish farm waste at the industry's present size or after expansion. This should be a first step, before permitting expansion, and to have omitted it is irresponsible of SEPA and the Scottish Government.

Any proposal to change the way that fish farm pollution is regulated must ensure that all farms will comply with their licence terms, and that the regulator can easily determine, whether this is so. Regulating pollution via a feed proxy is a step in the right direction

10) Do you have any comments on or suggestions for improving how the monitoring of biomass or feed is undertaken?

Share your views with us

We do not have any comments on or suggestions for improving how the monitoring is undertaken, however, we do not believe that it is possible to precisely measure fish biomass in the cages, given that most measurements are based on estimates. Most importantly, we believe that operators routinely overstock their cages on purpose, perhaps based on the assumption that CAR licences for the increased biomass will be forthcoming, but confident that SEPA rarely imposes any sanctions and that there are almost never prosecutions for breaching CAR licence terms.

We believe that monitoring feed is an improvement to the current system, as it allows for more precise measurements in real time and on a daily basis, which should improve compliance.

Could operators precisely measure biomass at any time?

Yes
Partly
No

Could operators precisely measure feed rates at any time?

Yes
Partly
No

11) Do you have any comments on how we have described the site management implications of using biomass feed?

Share your views with us

Given the recurring problem with breaches of CAR licenses, the CCN Aquaculture sub-group is not convinced that the salmon farming industry is a reliable self-regulator and/or self-monitor. We are concerned that farm operators will find ways to avoid or ignore compliance and will disregard the proposed management implications.

It also appears that voluntarily submitted biomass data cannot be used in court as evidence of a CAR licence term breach. Perhaps data from the automatic, tamper-proof, remote monitoring of feed distribution systems would be admissible as evidence.

Do you agree that operators can manage compliance with a biomass limit?

Yes
Partly
No

Do you agree that operators can manage compliance with a feed rate limit?

Yes
Partly
No

12) Do you have any comments on or suggestions for improving how we could audit biomass or feed compliance?

Share your views with us

The communities we represent have no confidence that the present auditing system for biomass can uncover the accidental or deliberate under-reporting of biomass. We have heard reports that this happens on purpose and is concealed from official records.

Biomass is hard to measure in the field, forcing regulators to accept the industry's assertions. If feed rates can be audited against feed purchasing records, (and, we would urge, also by installing tamper-proof meters that automatically and in near-real time report feed rates to SEPA), then this seems

much more likely to provide a good proxy for pollution output compared to setting a biomass cap and relying on the auditing of computer predictions of the actual biomass.

It is easy to see why companies might overstock their farms initially, given that mortality levels are highly variable and can be very high (65%-12% in Scotland's worst performing 40 farms, so far in 2019), averaging around 20%.

Overstocking increases profits, so it is also easy to see why some operators or individuals might be tempted to pretend to the regulator that their farms had not been overstocked, especially when they are unlikely to be caught, but might – in theory at least – face fines or other sanctions if they were to admit that they had overstocked accidentally.

The observable consequences of such overstocking would be a high level of failure, when farms have their impact on the seabed checked. This is consistent with the high level of compliance failure in fish farming, reported by SEPA. It is also consistent with the dangerously high levels of the in-feed pesticide emamectin benzoate, found by SEPA in many sea lochs, which threatens the livelihoods of crustacean fishermen (as expressed for instance by the Clyde Fishermen's Association to the Local Authority considering the expansion of the SSC fish farm at Ardyne).

SEPA clearly lacks the capacity to check many farms very often or even to analyse the reports that are sent to them. Scotland's Aquaculture website http://aquaculture.scotland.gov.uk/data/environmental_monitoring_surveys.aspx shows that there are 81 farms whose environmental monitoring reports (self-assessed by the companies who own the farms) are awaiting evaluation. All these reports were self-monitored and some date back more than a year. Some of the farms will have been restocked already, without SEPA knowing whether the previous production cycle breached benthic environmental standards.

MOWI's BDNC Loch Shuna farm is just one example of the risk of relying on self-monitored environmental impact assessments. The most recent seabed survey (20/12/2017) was a borderline pass, despite the report stating:

'This station failed the benthic faunal criteria for within the AZE as although there were 2 species of enrichment polychaetes present, they were in insufficient abundances (540/m²) to rework the sediment.' And *'Conditions were much improved at the AZE stations which all passed 3 of the benthic criteria for outwith the AZE. Numbers of taxa and richness and diversity scores were relatively high, and the ITI scores of 50, 47 and 45 indicated changed communities. The predominant taxa were those common to muddy sediments, i.e. the molluscs Kurtiella bidentata, Thyasira flexuosa and Hyala vitrea. Although all 3 stations failed the criterion for abundances of enrichment polychaetes, abundances were very low.'*

'Max biomass of 2494t was held on site in Oct '17,' yet the site is licensed only to hold a maximum biomass 2100t. The same farm was deliberately overstocked by MOWI again in its next production cycle to 3500t, when its license was for 2500t. It passed 2500t in April 2019, according to the Scotland's Environment website, and had reached 3000t by 1st July 2019. Around September all the fish were removed after a severe disease outbreak had killed a high proportion of them.

This needs to change. The ECCLR and REC Committees and the Ministers for the Environment and the Rural Economy have all said that the status quo is not an option for fish farming.

Biomass monitoring has not prevented BDNC and other farms from being operated beyond the environment's capacity to cope with their waste or the consequences of disease spreading among such large numbers of salmon.

We believe that companies are more likely to act responsibly when faced with an approaching ceiling imposed by a cap on feed rates.

Do you consider that it is possible to independently audit compliance with a biomass limit?

Yes

Partly

No

Do you consider that it is possible to independently audit compliance with a feed rate limit?

Yes

Partly

No

13) Do you consider that we should use biomass or feed as a proxy for the pollutant load from a fish farm?

Yes

Don't know

No

Share your views with us

SEPA should switch to using feed as a proxy for pollutant load. The CCN Aquaculture sub-group entirely agrees that the following questions are the appropriate criteria for SEPA to use to make the right decision on the proxy for pollutant load:

1. There should be a robust relationship between the proxy for pollutant load and the pollutant load.
2. The operator must be able to measure the proxy accurately and reliably at any time.
3. The operator must be able to manage the farm to ensure compliance with the permit limits set for the proxy.
4. SEPA must be able to independently audit compliance with the permit limits set for the proxy.

We also agree with SEPA that *'calculation of pollutant load from feed quantity is more direct; involves fewer assumptions; and is more accurate than the calculation of pollutant load from a biomass.'*

Nevertheless, the industry rejects this method, saying:

'Feed use is a poor proxy measure of seabed impact since different diets, environmental conditions and genetic makeup of different strains of salmon will result in markedly different levels of waste from the fish.' (From 'FINAL SSPO response submitted: Finfish aquaculture sector plan consultation'; <http://scottishsalmon.co.uk/wp-content/uploads/2019/01/sspo-response-to-sepa-sector-plan-dec18.pdf>),

Surely, these also apply to assessing the amount of waste produced by a given biomass of fish.

SSPO also says that using feed as a proxy for pollution would have welfare implications, implying that feed rates would have to be cut if they were approaching the CAR licensed limit. The better alternative would be to manage farms in such a way that there are fewer fish to start with, so as not to risk exceeding the feed limits and breaking the CAR licence terms. Fines should provide a suitable incentive not to do so. If the companies know how many fish they have, as accurately as they say they do, then this should not be too hard. If a larger than expected proportion of fish survives, the farms would have 90 days to plan to move the surplus fish to other cages on other farms or to kill the larger ones for market.

Where are the welfare implications in this? There is no need to starve fish, only an obligation, more effectively enforced, to stay within their environmental and social licence to operate farms.

The industry also says that using feed as a proxy may force 'perverse decisions' concerning the make-up of food pellets, creating pressure to put more nutrients in pellets without changing their mass. They contend that this would increase the (already unsustainable) use of forage fish in making aquaculture feed. This would reduce overall feed mass but might not reduce seabed pollution, depending on digestibility of the pellets.

However, changing the composition of feed pellets would be a voluntary act by the feed companies and farm operators, who state that their intention is to act responsibly in terms of the sustainable sourcing of forage fish. They should choose to live up to their words and not give in to the urge to make 'perverse decisions', in order to protect the health of the seabed around their farms.

Consequently, the CCN Aquaculture sub-group believes that switching to using feed rates as a proxy for pollution is an improvement to the current regulatory system. It should be adopted as soon as possible.

14) Do you have any other responses to make to this consultation?

Share your views with us

While switching to using feed rates as a proxy for pollution is indeed an improvement to the current regulatory system, the CCN Aquaculture sub-group strongly recommends that the Scottish Government consider land-based recirculating aquaculture systems, which would entirely eliminate the organic pollution problem that underpins this consultation, with at-sea closed or semi-closed containment systems as an interim measure, to capture organic waste and substantially reduce the amount released into the sea. This should then be disposed of responsibly on land or used as a raw material to boost the circular economy.