PLANNING APPLICATION 2025/006/MAR, FISH HOLM, YELL SOUND

COMMERCIAL INSHORE FISHERIES IMPACT ASSESSMENT CLARIFICATION NOTE

1.1 INTRODUCTION

This clarification note has been prepared in response to consultee responses received in relation to planning application 2025/006/MAR (Proposed Redevelopment and Expansion of Fish Holm Fish Farm), submitted on 17 February 2025, particularly those responses received from:

- The Shetland Fishermen's Association (SFA) – 17 April 2025
- Shetland Shellfish Management Organisation (SSMO) – 18 April 2025

And representations received from:

- Scottish Fishermen's Federation (SFF) – 17 April 2025
- Shetland Regional Inshore Fisheries Group (SRIFG) – 22 April 2025

The purpose of this clarification note is to address key points raised by the consultees during the planning application consultation process (or responses provided through representation), and where appropriate, present new data and information provided by the consultees within the context of the EIA undertaken in relation to the Proposed Development, and the results presented in the EIA Report, which was submitted along with the Planning Application (2025/006/MAR EIA Report).

Particular attention is given to additional data and information provided in SFA's consultation response (17 April 2025) regarding the level and type of commercial fishing activity currently undertaken in the study area (defined as statistical square M13 in 2025/006/MAR EIA Report Chapter 11 and SSMO annual stock assessment reports[1]). The data and information regarding the level and type of commercial fishing activity provided by SFA is now considered to be the best available data and information relevant to the study area at this time.

This note provides clarification around a number of aspects of the impact assessment presented in the EIA Report (2025/006/MAR EIA Report), including the influence of the data and assumptions used concerning the displacement of commercial fisheries from the Proposed Development site.

Additionally, in response to points set out by SFA in their consultation response and by SFF in their representation, further clarification on the potential impacts of deposition of organic waste materials on key commercial fisheries target species in the Study Area, and potential impacts on nursery sites for commercial species is also provided.

This clarification note is structured as follows:

- Clarification regarding the potential impact of displacement of commercial fisheries;
- Clarification on the potential impacts of deposition of organic waste materials on commercial fisheries species; and

[1] https://www.ssmo.co.uk/news/strong-results-from-2024-stock-assessments

- Clarification on the potential impacts on nursery sites for commercial species.

1.2 CLARIFICATION REGARDING THE POTENTIAL IMPACT OF DISPLACEMENT OF COMMERCIAL FISHERIES

In their consultation response, SFA provided estimates of the percentage of 'fishable area' for key species that they conclude are likely to be lost (in terms of commercial fishing access) from M13 as a result of the Proposed development. These are summarised in Table 1.

Table 1 SFA estimate of fishable area per species in M13 lost as a result of the Proposed Development

Fishery	SFA estimate of fishable area per species in M13 lost as a result of Proposed Development (%)
Scallops	3.56%
Buckies	10.79%
Brown crab	0.39%
Velvet crab	0.60%

A precautionary approach was taken during the commercial fisheries impact assessment undertaken by Aquatera (set out in the EIA Report), which was based on the best available data regarding the level and type of fishing in the Study Area (statistical square M13), the number of active fishing vessels, and landings. This was mostly informed by the stock assessments produced annually by SSMO. Based on the following factors, it was assumed that fishing activity, and therefore landings from M13, for each of the key target commercial species identified, would be reduced by 22.5% (refer to Table 2):

- The scale of the Proposed Development area within the total fishable area of the Study Area was assumed to be in the order of 20 - 30% (based on desk based examination of seabed data, presence of other established aquaculture sites and vessel routes used for fish farming, infrastructure and shipping).
- Therefore, it was estimated that 20 - 30% of the total fishable area within the Study Area would no longer be accessible for commercial fishing. Taking a precautionary approach, the impact assessment assumed a loss of access, or displacement of 30% for each commercial species.
- As the existing consented Fish Holm fish farm occupies 25% of the Proposed Development area, the impact assessment focussed on the expansion area (i.e. the remaining 75% of the Proposed Development area).
- Therefore, the total fishable area of the Study Area from which commercial fishing was assumed to be displaced for each key species was assumed to be 22.5% (equal to 75% of 30%).

Table 2 below shows the estimated percentage of fishable area lost within the Study Area (M13) as reported in the EIA Report broken down by species.

Table 2 EIA Report % of M13 per species lost as a result of Proposed Development (Fish Holm)

Fishery	EIA Report % of M13 per species lost as a result of Proposed Development (Fish Holm)
Scallops	22.50%
Buckies	22.50%
Brown crab	22.50%
Velvet crab	22.50%

A comparison of the information provided in the consultation response received from SFA and presented in the EIA Report is provided in Table 3. The percentage loss of fishable area per species of the Study Area (M13) is used to calculate a predicted decrease in landings value per year when it is assumed that an even spread of landings can be attributed across the fishable area within M13. This was presented in the EIA Report and is presented here using the SFA reported percentage loss of fishable area in M13 per species.

Landings values used are taken from Scottish Government, 2023.[2]

Table 3 Comparative information on the predicted loss of fishable area in M13 per species as a result of the Proposed Development

Target species	Predicted loss of fishable area in M13 (%) per species		Predicted decrease in landings per year based on % loss of fishable area from M13 (£ range)	
	SFA Response	EIA Report	Calculated based on % loss provided by SFA	EIA Report
Scallops	3.56%	22.50%	£5,797-£8,696	£36,639-£54,958
Buckies	10.79%	22.50%	£1,677-£3,354	£3,496-£6,993
Brown crab	0.39%	22.50%	£24-£48	£1,381-£2,763
Velvet crab	0.60%	22.50%	£83-£139	£3,132-£5,220

Therefore, the potential effects on commercial fisheries interests described in the EIA Report assume a higher percentage of lost fishable area and a greater reduction in landings for key target commercial species (scallops, buckies, velvet crab and brown crab) resulting from the Proposed Development, when compared to the data and information provided in the SFA consultation response.

To estimate the potential impact at an individual fishing vessel level, the EIA Report assumed the number of fishing vessels targeting each key commercial species as shown in Table 4. SFA's response on actual numbers of fishing vessels active in the Study Area are also shown in Table 4 for comparison.

[2] Scottish Government (2023) Scottish Sea Fisheries Statistics 2022. [Online] Available at: https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2022/ [Accessed] 02 December 2024.

Table 4 Estimated number of active vessels in the Study Area (M13) as reported in the EIA Report and in SFA's response

	Estimated number of active vessels in the Study Area (M13)	
	SFA Response	EIA Report
Scallops	16	8
Buckies	7	8
Brown crab	7	8
Velvet crab	7	8

The data and information regarding number of vessels provided by SFA and presented above, is now considered to be the best available information. The results presented in the EIA Report (Chapter 11, Appendix A) regarding the potential loss of earnings per vessel from landings from M13 are presented in Table 5, along with results calculated based on the data and information provided by SFA regarding the number of active vessels using M13 for comparison.

Table 5 Comparative information on the number of active commercial vessels in M13 and the potential loss of earnings per vessel per year.

Target species	Number of active commercial fishing vessels in M13		Potential loss of earnings per year, per vessel from landings from M13 (£ - range)	
	From SFA Response	Assumed in EIA Report	Calculated based on number of vessels stated in SFA response	From EIA Report
Scallops	16	8	£362-£543	£4,580-£6,870
Buckies	7	8	£240-£479	£437-£874
Brown crab	7	8	£3-£7	£173-£345
Velvet crab	7	8	£12-£20	£392-£653

Note that the figures in the column "Potential loss of earnings per year, per vessel from landings from M13 (£-range)" are calculated based on the percentage loss provided by SFA divided by the number of active fishing vessels in M13 from the SFA response. Landings values are taken from Scottish Government, 2023.[3]

As shown, the best available data (from SFA) indicate that the loss of earnings for all four species per vessel/business from M13 resulting from the Proposed Development presented in the EIA Report are highly precautionary.

[3] Scottish Government (2023) Scottish Sea Fisheries Statistics 2022. [Online] Available at: https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2022/ [Accessed] 02 December 2024.

1.3 CLARIFICATION REGARDING THE POTENTIAL IMPACT OF DEPOSITION OF ORGANIC WASTE MATERIALS ON COMMERCIAL FISHERIES

This section considers the assessment of the impact of deposition of organic waste materials on commercial fisheries species, as referenced in the following representation from SFF:

- Scottish Fishermen's Federation (SFF)– 17 April 2025 (Excerpt below)

The SFF would like to highlight that the proposed extent of the site is not the totality of the area which will be affected by the expansion of this site. Figure 7.7 and Figure 7.8 display the modelled deposition of solids and carbon from the proposed development. This model of the solid deposition is of concern to the SFF because, as previously stated in the EIA, the site was 'micro-sited' so that the extension did not come close to the shoreline. However, these figures show that the solid deposition will disperse into areas where creel vessels should be able to continue to fish. The amount of waste being produced from this proposed site will likely degrade the condition of the seabed and water column and therefore further increase the impact that this extension will have on local fishermen.

The figures cited are shown below in Figure 1 and Figure 2

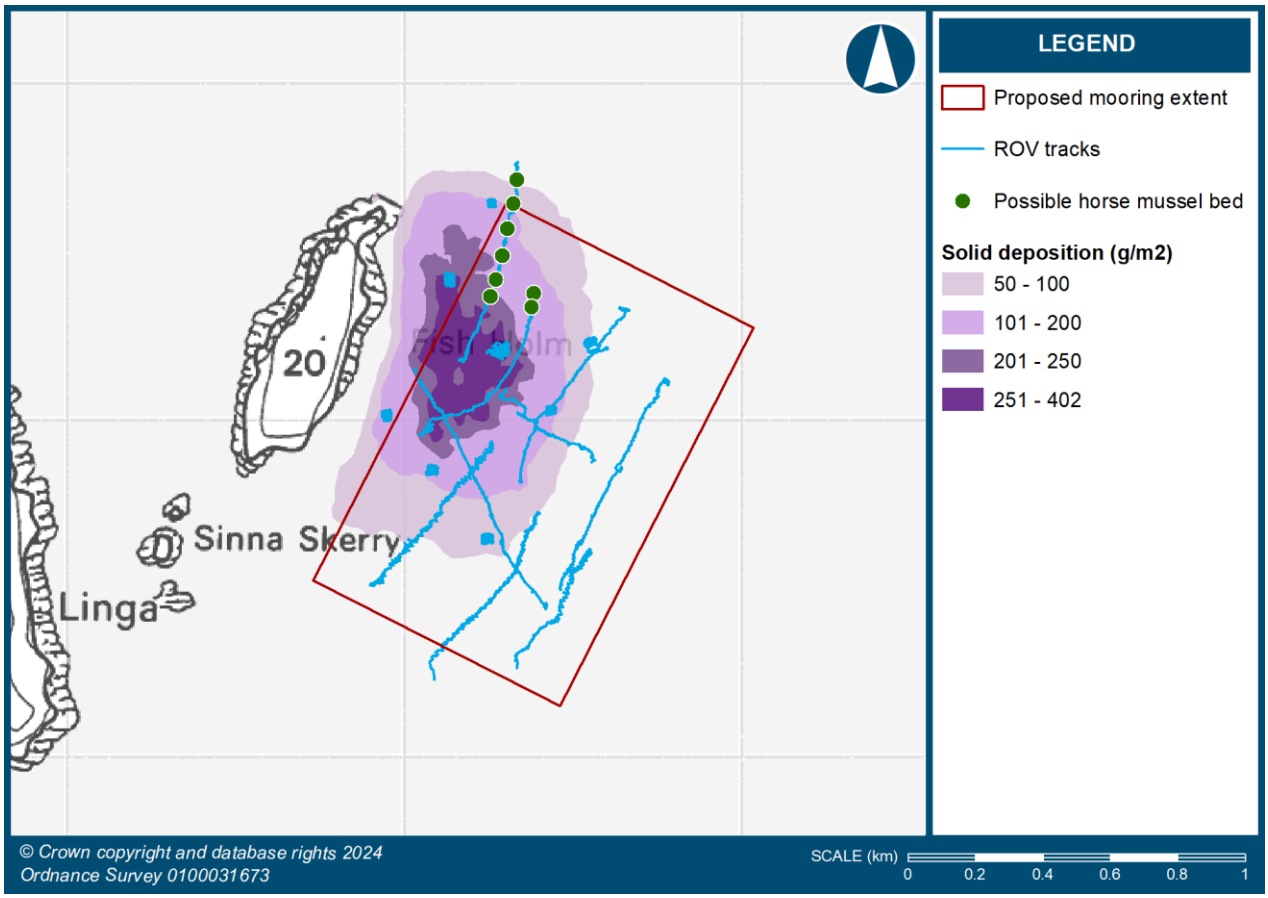

Figure 1 Modelled deposition of solids from Proposed Development (Planning application 2025/006/MAR (Proposed Redevelopment and Expansion of Fish Holm Fish Farm), submitted on 17 February 2025)

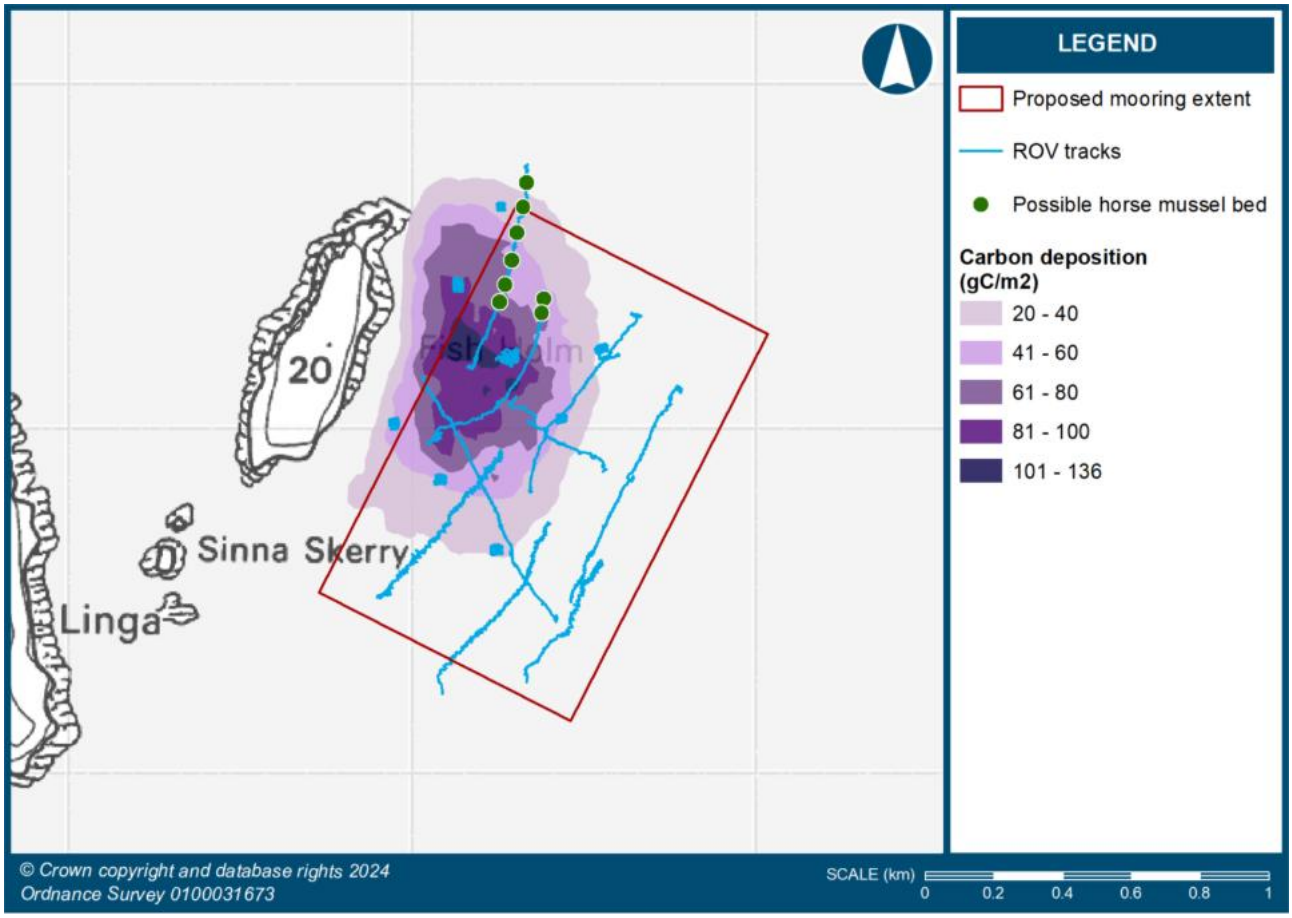

Figure 2 Modelled deposition of carbon from Proposed Development (Planning application 2025/006/MAR (Proposed Redevelopment and Expansion of Fish Holm Fish Farm), submitted on 17 February 2025)

It is agreed that, as stated, the predicted depositional area for excess food and faecal materials, as shown in Figure 1 above, extends beyond the mooring extent of the Proposed Development. The estimated area of this additional depositional (of over 50g/m^2/year) area is 0.18 km^2. The implications of such an area arising in relation to possible creel fishing activity is however, more complex to discern than the initial assumption of an added area of lost fishery. There are a number of key points to consider.

- A first factor is the 'fishability' of the area shorewards (towards Fish Holm) of the mooring extent. The plotter data, supplied by local fishermen, shows that there are two zones outside the mooring extent, one where one vessel seems to focus its effort and a further inner strip along the coast which is not fished. Based upon this data it seems that only 50% of the predicted depositional area nearer to the Fish Holm shoreline, outside the mooring extent is regularly fished.
- Secondly, there is the consideration of the practical significance of the depositional regime predicted. The greatest level of predicted deposition is around 251-402 g/m^2/yr (the highest level beyond the boundary on the contour plot is 301 g/m^2/yr). This equates to less than 1g/m^2 per day and although the deposition may be sporadic, the amount of depositional material arriving at the seabed will be relatively small. Also bearing in mind that this deposition is spread over 1 m^2, the per cm^2 depositional regime would be around 0.025 g/cm/yr. For comparison the typical level of plankton based productivity is approximately 100-300 g/m^2/yr (Capuzzo et al., 2018). Assuming 10% of this deposition reaches the seabed, this would equate to approximately 10-30 g/m^2/yr – roughly 10% of the fish

farm derived material. In addition, the coastal seaweed/animal communities would add to the local depositional regime, however, the quantity is uncertain. To conclude, it is likely that the heaviest depositional regime would be about five times the typical natural levels and that most depositional materials would be similar to natural levels. Consequently, it is unlikely that noticeable changes in community type and function would be detected at the lesser depositional rates.

- As is noted in the HRA Clarification Note (As part of the EIA Addendum), the 250 gt/m^2/year contour is the sediment flux contour equivalent to the infaunal quality index (IQI) of 0.64 which is the value representing the class boundary between 'good' and 'moderate' biological status. IQI values above 0.64 indicate 'good' biological status therefore deposition levels of >250g/m^2/year indicate a deterioration of the biological status from good to moderate. To remain within EQS limits, the area >250g/m^2/year must not exceed the extent of the allowable mixing zone. The site is characterised by fast current velocities so only a limited spatial footprint around the site is expected. The modelled deposition footprint >250 g/m^2/year is predicted to occur to the west of the pens with a high resuspension frequency so it is likely that most waste will be exported from the modelled domain and into the wider area, likely dispersed into Yell Sound to the north of the site, with only minor deposition within the vicinity of the pens. The extent of the benthic impacted area >250 g/m^2/year is 71,250 m^2 which is well below the extent of allowable mixing zone which is 324,116 m^2 and therefore compliant with SEPA standards. The modelled value for benthic mean intensity for the site layout is 284.2 g/m^2/year which is well below the EQS limit of 4,000 g/m^2/year and therefore also compliant with SEPA standards.

Despite these caveats it has been assumed from a precautionary standpoint that this area outside the mooring extent of the Proposed Development could be lost to creel fishing (for brown crab, velvet crab and buckies), and the potential effects on associated commercial fishing activity as a result are described below.

The following table shows the estimates of 'fishable ground within M13 lost as a result of the proposed expansion' used in the EIA Report, and how those figures can be updated to incorporate the area between the mooring extent and the Fish Holm shore.

It should be noted that scallop fishery impacts are not considered here since the area outside the mooring extent is more likely to be used by creel boats.

Table 6 Total area of fishable ground lost (including area between mooring extend and Fish Holm shore) as a result of Proposed Development and area of deposition outside of mooring extent

Species	'Fishable ground' within M13 lost as a result of expansion (Fish Holm) (km^2 and %) (Reported by SFA)	Additional fishable ground lost as a result of deposition (outside the mooring extent) (km^2)	Total fishable ground lost as a result of Proposed Development mooring extent and deposition footprint outwith mooring extent (km^2)	Calculated % loss of fishing grounds in M13 based on total area (SFA figure + area of deposition)
Buckies	0.97 km^2 or 10.79%	0.18 km^2	1.15 km^2	12.79%
Brown crab	0.046 km^2 or 0.39%	0.18 km^2	0.226 km^2	1.92%
Velvet crab	0.063 km^2 or 0.60%	0.18 km^2	0.243 km^2	2.31%

It should be noted that this area is within the M13 Study Area that was assessed within the commercial fisheries impact assessment of the EIA Report.

Also note that the column 'Additional fishable ground lost as a result of deposition (outside the mooring extent) (km^2)' *is calculated using the modelled deposition (shown in Figure 2) as the estimated area of additional depositional (of over 50g/m^2/year).*

The following table shows the total estimated percentage loss of fishing grounds in the M13 Study Area when this area of deposition is included. The landings values are presented for each target species to show the predicted estimated decrease in landings value per year per target species and per vessel.

Table 7 Total calculated percentage loss of fishing grounds in M13 Study Area including the area of deposition presented alongside the value of landings data in M13 to show the predicted decrease in landings value per year per target species and per vessel

Target species	Calculated % loss of fishing grounds in M13 based on total area (SFA figure + area of deposition)	Value of landings from M13 (£ range)	Predicted decrease in landings value per year based on % loss of fishable area from M13 (SFA figure + area of deposition) (£ range)	Number of active commercial fishing vessels in M13 (Based on SFA Response)	Potential loss of earnings per year, per vessel from landings from M13 (£ - range)*
Buckies	12.79%	£15,540-£31,080	£1,988-3,976	7	£284-£568
Brown crab	1.92%	£6,140-£12,280	£118-235	7	£17-£33
Velvet crab	2.31%	£13,920-£23,200	£322-537	7	£46-£77

**Calculated based on number of vessels stated in SFA response and based on calculated % loss of fishing grounds including area of deposition outwith mooring extent*

In summary, while the modelled deposition of organic material from the proposed expansion of the Fish Holm Fish Farm is predicted to extend beyond the mooring extent, the actual impact on commercial fisheries is likely to be limited in scale and complexity. Plotter data suggests only partial overlap between depositional areas outside the mooring extent and active creeling grounds, and the predicted levels of deposition are relatively low compared to natural background inputs. Applying a precautionary approach, the entire 0.18 km^2 depositional area beyond the mooring extent has been considered here as potentially lost fishing ground. When combined with previously identified impacts, this results in modest increases in the estimated percentage loss of fishable area and associated landings value within the M13 Study Area (See Table 6). Overall, the additional effects of deposition are unlikely to result in significant adverse impacts on local commercial creel fisheries.

1.4 CLARIFICATION REGARDING THE POTENTIAL IMPACTS ON NURSERY SITES FOR COMMERCIAL SPECIES

This section provides a response to points raised regarding the potential impact of deposition of organic waste materials on nursery sites, as referenced in the consultation response from SFA and SSMO and in the representation from SRIFG.

- The Shetland Fishermen's Association (SFA) - 17 April 2025 (Excerpt below);
- Shetland Shellfish Management Organisation (SSMO) - 18 April 2025 (Excerpt below);
- Shetland Regional Inshore Fisheries Group (SRIFG) - 22 April 2025 (Excerpt below).

SFA: "*Operational efficiency and long-term sustainability. Any deterioration of the benthic habitat or water quality - particularly if it affects juvenile stocks - remains a significant concern. The proposed 6,000t farm could generate organic waste equivalent to sewage from tens of thousands of home in an areas where there are many other salmon farming enterprises. A recent study conducted by UHI Shetland, "Identification of Inshore Nursery Areas for Commercially Important Fish Species Around Shetland," emphasises the need for planners and policymakers to give greater attention to the impact of development on key nursery grounds for commercially valuable fish species. The research identified several shallow inshore areas where juvenile cod, haddock, whiting, and plaice are abundant, yet adult fish are absent. These nursery habitats - characterised by depths of less than 50 meters, shelter from wave action and tides, and sandy sediment, some of which is covered by seaweed - play a crucial role in sustaining fish populations. Data from the Shetland Inshore Fish Survey indicates that as these juvenile fish mature, they migrate to deeper waters where commercial fishing occurs. The study, led by Louise Thomason and Dr. Shaun Fraser, highlighted several particularly important nursery areas, including Weisdale Voe and Sandsound Voe to the south of the west mainland, Lunna and Dales Lees (areas in M13 where the Fish Holm salmon site is proposed) off the east mainland, and Cole Deep and Skeetlie (Aith Voe) to the north of the west mainland. Protecting these nearshore habitats is essential , as they have significant commercial implications for the sustainability of local fish stocks and the broader marine ecosystem."*

SSMO: *"The scale of sealice dosing required to treat 6,000 tonnes of salmon in this already overcrowded area could have serious environmental consequences for important shellfish spawning and nursery areas. The precautionary principle should be applied to refuse this development and protect this vital commercial fishery zone."*

"Fish Holm represents significant damage and permanent obstruction to part of Shetland's important scallop fishing area. A massive increase in quantities of chemicals released into the water to kill sealice may damage important spawning and nursery areas."

Shetland Regional Inshore Fisheries: *"The negative impact on an Inshore Nursery Area. Referring to the findings of a recent paper by Louise Thomason and Shaun Fraser from UHI Shetland, 'Identification of inshore nursery areas for commercially important fish species around Shetland.' This survey identified Fish Holm as being close to the nursery areas of Lunna and Dales Lees. Again this impact should not be seen in isolation, but as a combined impact of other aquaculture and energy developments described in the paper which could impact other nursery areas. This paper is very important as it is able to demonstrate that a very small number of specific sheltered and shallow sites in Shetland are utilised repeatedly by commercial juvenile fish. They were also able to demonstrate these fish moving out to deeper waters. Developments like Fish Holm that impact these nursery areas could have serious implications for these stocks in the future. This impact could be large and unpredictable."*

At the time of preparing the EIA Report, consideration was given to potential interactions between the Proposed Development and nearby marine habitats. However, there was not an established evidence base in the literature or guidance that set out a clear mechanism by which aquaculture activities would be expected to influence the functioning

of demersal fish nursery areas. While recent research[4] has contributed valuable insight into the distribution of juvenile fish in Shetland, it does not specifically identify aquaculture-related pressures or impact mechanisms, or provide a basis on which to undertake a meaningful project-level assessment.

In light of this, and taking into account that the matter had not been highlighted through scoping or the pre-application consultation process, nursery sites were not taken forward as a separate receptor in the EIA. The regulatory frameworks already in place, such as the CAR licensing process, are considered more than adequate to manage potential impacts on these receptors, including any arising from organic waste deposition and medicine use.

It is recognised that the question of how nursery habitats interact with multiple pressures may be of broader, strategic interest. This would be more appropriately explored through mechanisms such as marine spatial planning or Strategic Environmental Assessment, where cumulative and ecosystem-level issues can be examined consistently across different types of development.

[4] Thomason, L., & Fraser, S. (2025). Identification of inshore nursery areas for commercially important fish species around Shetland. UHI Shetland.

1.5 REFERENCES

Capuzzo, E., Lynam, C.P., Barry, J., Stephens, D., Forster, R.M., Greenwood, N., McQuatters-Gollop, A., Silva, T., van Leeuwen, S.M. and Engelhard, G.H., 2018. A decline in primary production in the North Sea over 25 years, associated with reductions in zooplankton abundance and fish stock recruitment. *Global change biology*, *24*(1), pp.e352-e364.

Scottish Government (2023) Scottish Sea Fisheries Statistics 2022. [Online] Available at: https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2022/documents/ [Accessed] 02 December 2024.

Thomason, L. and Fraser, S., 2025. Identification of inshore nursery areas for commercially important fish species around Shetland.