

RAMBOLL RESPONSE TO ENVIRONMENT AGENCY

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Case reference MLA/2025/00157

Introduction

This note responds to the Environment Agency (EA) comments received on 29 August 2025 with respect to MLA/2025/00157. It specifically responds to the advice on fisheries and the proposed condition as follows:

Advice - Fisheries

The River Fal is designated as a recovering salmon river (meaning a population is starting to re-establish after a period of absence) and a principal sea trout river (meaning there is a rod catch >50 individuals a year). The proposed development lies within the Atlantic Salmon and European Eel migratory route for the River Fal so it is important that the activities associated with the proposed development do not adversely impact on fish migration. The proposed development will therefore only be acceptable if the conditions outlined above are included, requiring works to be programmed to avoid sensitive times for migratory fish and to be undertaken using appropriate methods. Without these conditions we would object to the proposal because it cannot be guaranteed that the development will not result in significant harm to migratory fish.

Condition - Timing of piling work

No piling works shall take place in the estuary during the core sensitive period 1st April to 31st August.

Reason: *To protect Atlantic salmon, European eels and Sea trout during the core sensitive period. Atlantic salmon are listed as species of Principal Importance under Section 41 of the Natural Environments and Rural Communities (NERC) Act 2006. They are protected under the Conservation of Habitats and Species Regulation (2017) as amended.*

Recommendation: *All percussive piling shall have a soft start up before full percussive piling takes place to ensure fauna, in particular fish, are able to move away before full percussive piling takes place.*

Ramboll Response

Ramboll does not agree with the EA proposal to impose a seasonal restriction for the impact piling works in the Fal estuary. Our justification is set out in the following paragraphs.

As stated by the EA, the River Fal is identified as a recovering salmon river, which means the salmon population has started to re-establish after a period of absence¹. The Southwest office of the EA reported that salmon fry was caught in the tributaries of the Fal in 2005, having not been recorded in 25

¹ Cefas, 2023. Assessment of salmon stocks and fisheries in England and Wales. Standing report on methods, approaches, and wider stock conservation and management considerations in 2023.

years². However, Ramboll note that it is particularly difficult to identify salmon and trout fry and differentiate the taxonomic features of these species at this life stage. It was at this stage that the River Fal was declared a recovering salmon river. However, no further evidence was found to show records of salmon fry caught in the river since this designation. The River Fal does not support a salmon fishery and no records of salmon *Salmo salar* were found within EA freshwater fish dataset³. Overall, the River Fal is not considered to be important for salmon migration.

The EA have also highlighted a risk from the proposed impact piling to sea trout *Salmo trutta* and European eel *Anguilla Anguilla* migration within the Fal Estuary. Both species are listed as species of principal importance in Section 41 of the NERC Act 2006, however, within the study area they are not protected as part of a designated site.

The River Fal is classified as a principal sea trout river in the UK, meaning that there are greater than 50 rod catch a year. The EA freshwater fish data, across 36 survey events over 24 years at 19 upstream sites recorded a total of 1,738 brown / sea trout *S. trutta*, which is an average of <50 fish per survey. By way of comparison, between 2000 and 2013, an average of 10,636 sea trout moved past the Gunnislake Weir fish counter on the river Tamar each year and the fixed trap counter at this location recorded 20,810 fish between 2000 and 2024, more than ten times as many as recorded across all 19 sites within the Fal estuary complex combined. On this basis, the numbers of trout occurring in the Fal is considered relatively small in the context of other rivers nearby and therefore is not considered important at a regional level.

Across the same time period and survey locations, 41 adult European eel and 122 elvers were recorded in rivers upstream of the proposed development. Therefore, the number of eel recorded within the estuary is also considered to be low.

The piles proposed to be used as part of the proposed development will initially be installed by vibro-piling to reduce noise generation, followed by percussive piling for which the duration will be 4 hrs within 24 hrs (6 hrs in total, including vibro-piling). This is based on an assumption that two piles could be installed per day, each with approximately 6 hr total installation time of which 4 hrs is percussive piling. For stationary category 2 hearing fish (i.e. salmon and trout, which have medium hearing sensitivity) (Figure 2), PTS from impact piling (with a soft-start) would occur close to the development, extending to the west side of the Fal. TTS threshold effects (i.e. temporary and recoverable) were predicted at the other side of the main Fal estuary at St Mawes (for piling location 2, Western Wharf, and 3, Queen's Wharf, only; modelling locations shown in Figure 1).

The underwater sound modelling approach is considered to represent a worst-case scenario and was identified by Cefas during their review of the application, to be overly precautionary (provided in an advisory request on 15th August 2025, which focussed on effects to cetaceans, but commented on the underwater sound methods as a whole). Cefas stated that the modelled approach aligns with the precautionary principle, and appear conservative based on the methods chosen, which could overestimate impacts. For example, a worst-case scenario was taken in respect of piling modelling locations, which does not account for some of these locations benefiting from greater shielding from existing and new infrastructure. A stationary model also does not consider the movement of migratory fish species, which would have directional travel and unlikely to be stationary.

² Falmouth Packet, 2006. Salmon back in the Fal. https://www.falmouthpacket.co.uk/news/cornwall_news/745695.salmon-back-fal/

³ Langston, W.J., Chesman, B.S., Burt, G.R., Taylor, M., Covey, R., Cunningham, N., Jonas, P. and Hawkins, S.J., 2006. Characterisation of the European marine sites in south west England: the Fal and Helford candidate Special Area of Conservation (cSAC). *Hydrobiologia*, 555, pp.321-333.

Figure 2 shows the modelling locations overlaid with each other, with the extended modelled threshold exceedance in the main channel of the Fal, occurring from piling on the Western Wharf (location 2 - Figure 3) and Queens Wharf (location 3 - Figure 4) as worst case modelled locations.

A soft-start procedure would take place, whereby the initial sound source level is increased over 20 minutes to the maximum value. This has been included as an embedded mitigation measure for marine mammals, as part of the JNCC 2010 guidance for minimising the effects of impact piling. This measure can also benefit fish. Species such as trout and European eel are likely to avoid the area of effect once the soft-start is implemented for the piling. It is known that salmonids (such as sea trout) demonstrate a startle response to sound and will change their direction of swimming to avoid areas of higher sound intensity⁴. This means these species are likely to exhibit a behavioural response prior to any TTS, recoverable injury, or mortality of species.

For these species, a fleeing response is considered applicable and has been modelled, whereby the mobile fish species move away from the sound source (Figure 6 to Figure 9). For impact piling with soft-start at all three modelled locations, the potential for mortality and recoverable injury in Category 2 fish species is limited to close to the proposed development (behind the existing wharf structures), whilst TTS does not extend eastwards to the main Fal estuary.

Although there will be a period of fish avoidance behaviour during the piling works, this will be short term, lasting for four hours a day and only in daylight hours. This will allow time for European eel and trout to continue their migrations outside of these periods. Sea trout migrations, mostly downstream movements of smolt, predominantly occur at night and therefore are more likely to avoid these periods of piling⁵. Silver eels are also known to migrate at night, during increased water flow velocities, although this is dependent on peak tidal currents⁶.

Overall, survey data from the Fal shows that the river is of low importance for trout and European eel, given their low abundance recorded to date. There is also limited evidence of salmon being present within the river within the past 20 years, with salmon fry only being recorded in one instance in 2005. Furthermore, the timings of the percussive piling is limited and restricted to daylight hours only, allowing migration to continue outside of this period (as per the worst-case and precautionary modelling scenario provided). The works will also adhere to JNCC best practice guidance, which includes a soft-start. The mitigation limits the extent over which PTS and TTS could occur, particularly when considering a fleeing fish scenario.

Considering the limited duration and scale of the effect, as detailed above, the impact from underwater sound has been assessed as not significant. It is therefore, considered disproportionate for the percussive piling works to require a seasonal restriction and is not considered necessary in this instance.

⁴ Oppedal, F., Barrett, L.T., Fraser, T.W., Vågseth, T., Zhang, G., Andersen, O.G., Jacson, L., Dieng, M.A. and Vindas, M.A., 2025. The behavioral and neurobiological response to sound stress in salmon. *Brain Behavior and Evolution*, 100(1), pp.11-28.

⁵ Moore, A., Ives, M., Scott, M. and Bamber, S., 1998. The migratory behaviour of wild sea trout (*Salmo trutta* L.) smolts in the estuary of the River Conwy, North Wales. *Aquaculture*, 168(1-4), pp.57-68.

⁶ Verhelst, P., Westerberg, H., Coeck, J., Harrison, L., Moens, T., Reubens, J., Van Wichelen, J. and Righton, D., 2023. Tidal and circadian patterns of European eel during their spawning migration in the North Sea and the English Channel. *Science of the total environment*, 905, p.167341

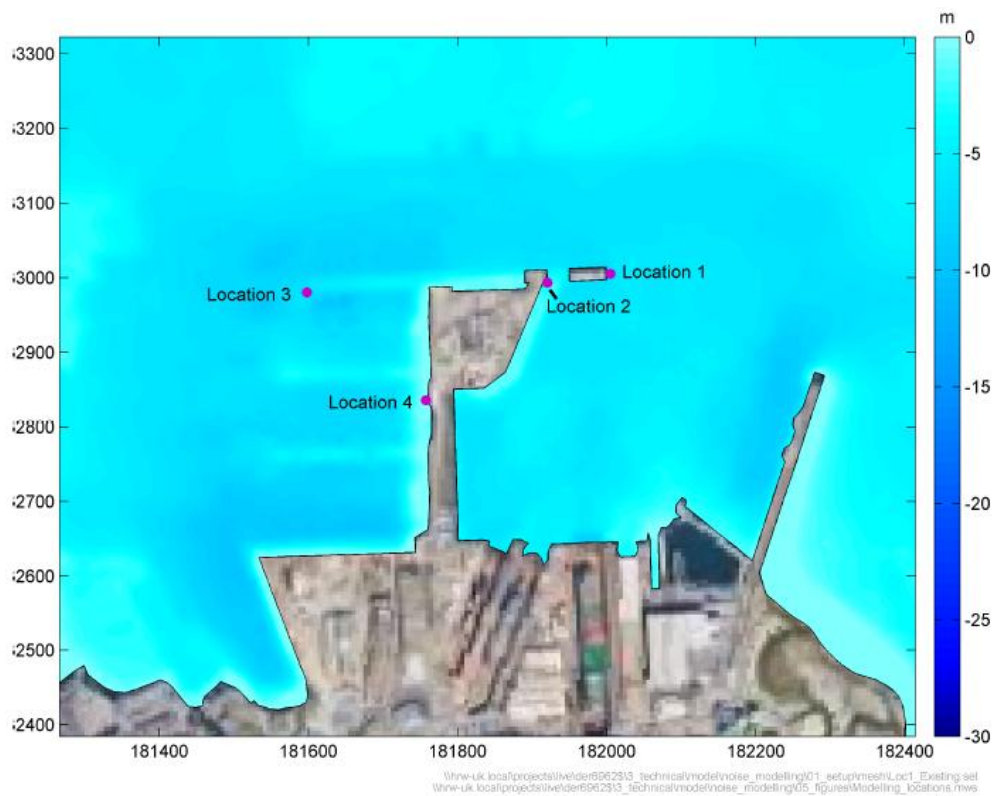


Figure 1. Modelled sound source locations.

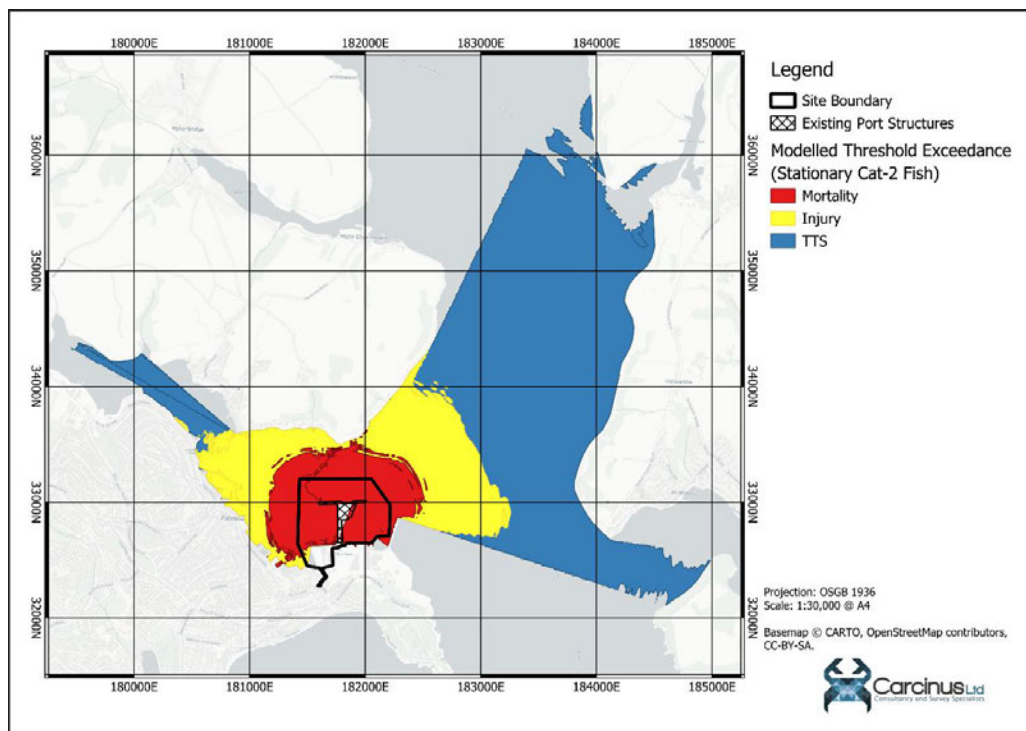


Figure 2. Stationary Category 2 noise threshold exceedance as a result of impact piling operations. All three modelled locations overlaid.

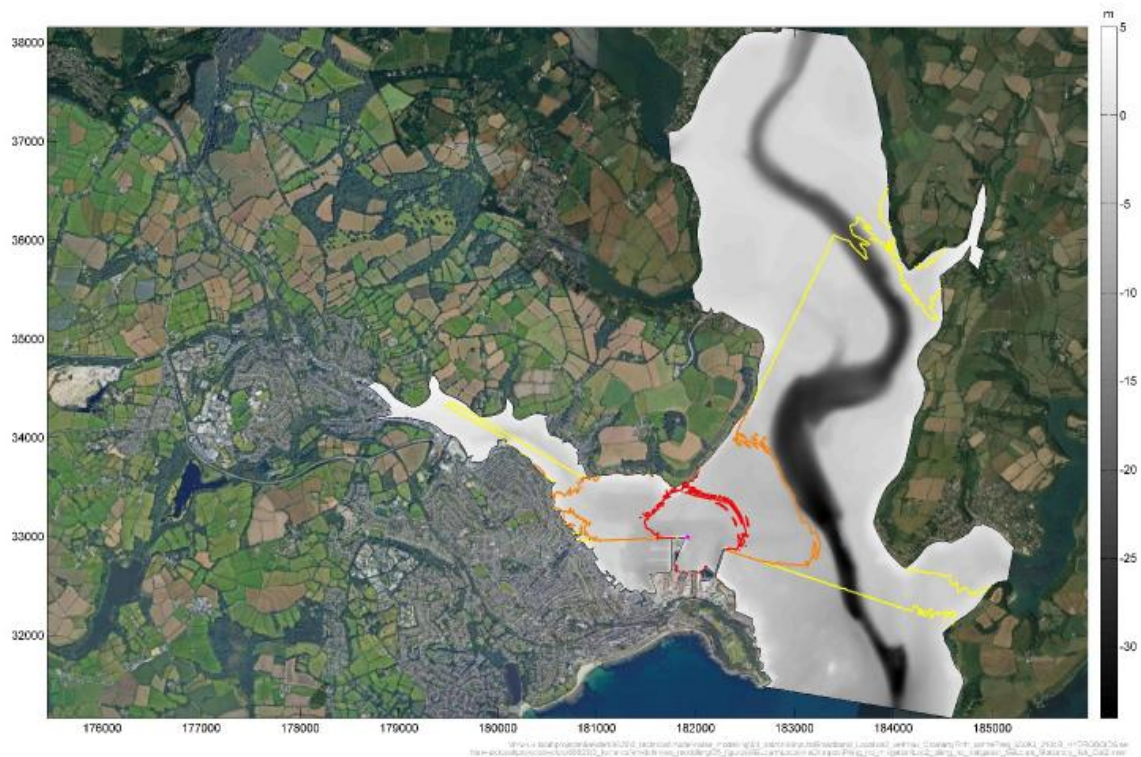


Figure 3. Predicted SELcum impact footprint for Category 2 stationary fish for percussive piling, with a soft start procedure, at the Western Wharf (Location 2).

Notes: TTS – yellow; PTS – orange; mortal injury – red

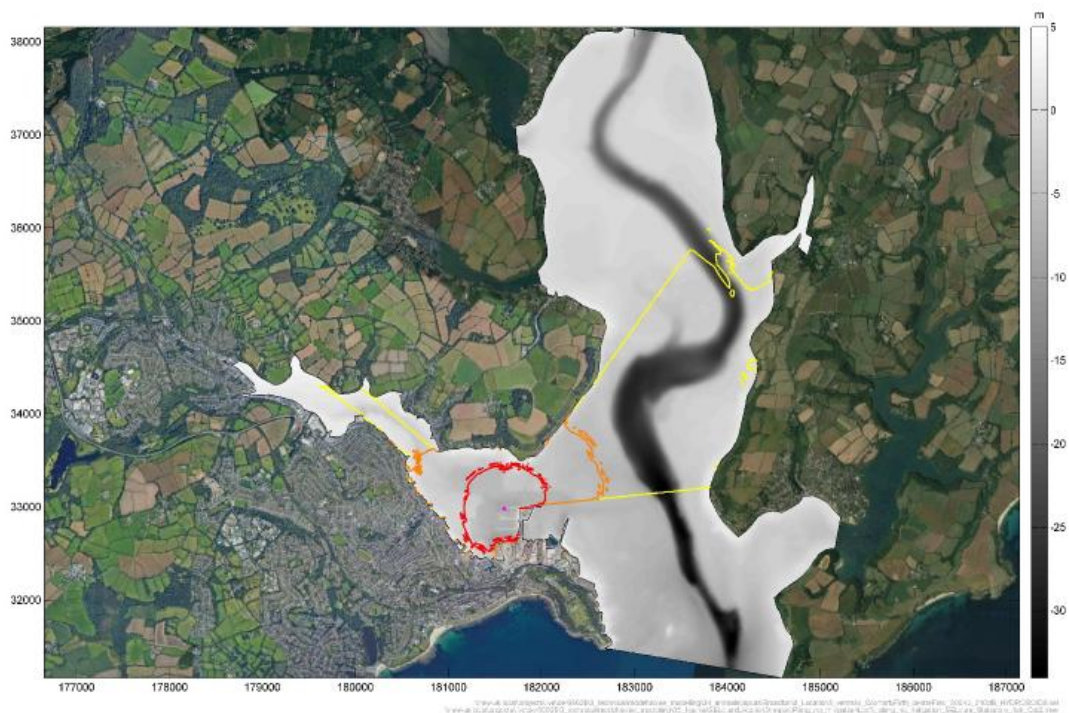


Figure 4. Predicted SELcum impact footprint for the category 2 stationary fish for percussive piling, with a soft start procedure, at the Queen's Wharf (Location 3).

Notes: TTS – yellow; PTS – orange; mortal injury – red



Figure 5. Predicted SELcum impact footprint for the for category 2 stationary fish for percussive piling, with a soft start procedure, at the FLOW Deck (Location 4).

Notes: TTS – yellow; PTS – orange; mortal injury - red

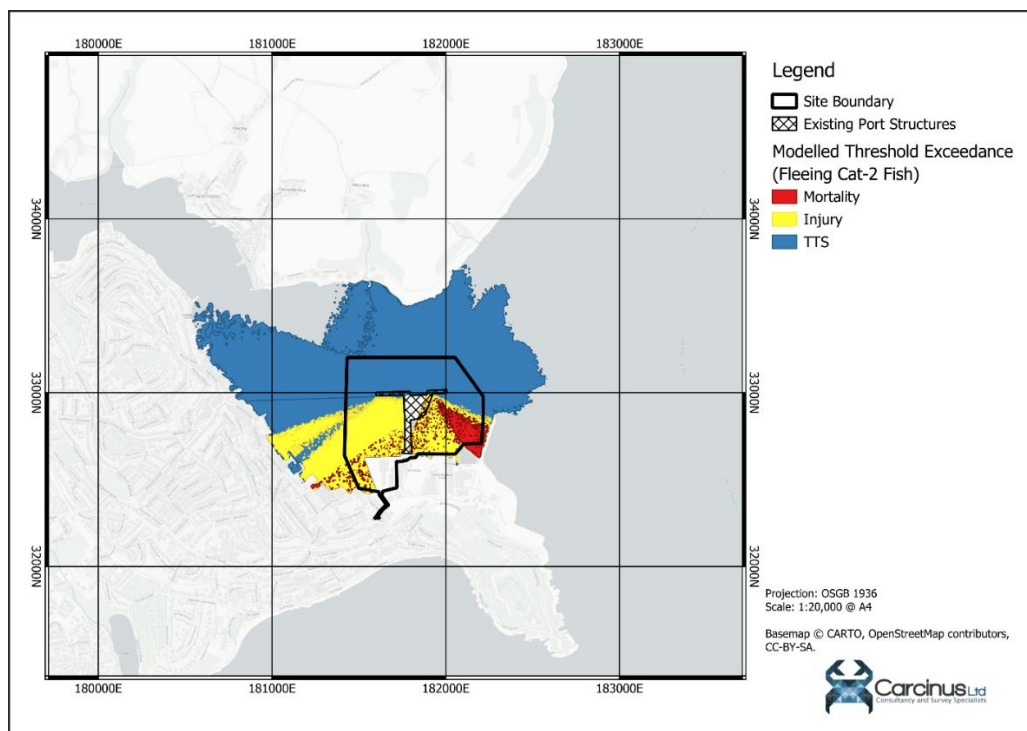


Figure 6. Fleeing Category 2 noise threshold exceedance as a result of impact piling operations. All three modelled locations overlaid (including a soft-start).



Figure 7. Predicted SELcum impact footprint for fleeing fish for percussive piling, with a soft start procedure, at the Western Wharf (Location 2).

Notes: TTS – yellow; PTS – orange; mortal injury – red



Figure 8. Predicted SELcum impact footprint for fleeing fish for percussive piling, with a soft start procedure, at the Queen's Wharf (Location 3).

Notes: TTS – yellow; PTS – orange; mortal injury – red



Figure 9. Predicted SELcum impact footprint for fleeing fish for percussive piling, with a soft start procedure, at the FLOW Deck (Location 4).

Notes: TTS – yellow; PTS – orange; mortal injury - red