

**From:** Noel Roche [REDACTED]  
**Sent:** 31 March 2023 12:12  
**To:** Alab, Info <Info@alab.ie>  
**Subject:** Submissions by Noel Roche Ballyteigue Oysters Ltd on the appeals AP4-1\_23 by An Taisce and AP4-2\_23 Mr Jim Hurley against my licence T03/38

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Please find attached by submissions in defence of my licence against the two appeals that were recently lodged against it. I am sending a signed copy of both attachments by registered post today.  
Could you please acknowledge receipt of this email and the attachments please?  
As we are unable to activate read receipts please confirm by return email as soon as this is delivered to you.  
Yours Sincerely  
Noel Roche.

27/03/23

Ballyteigue Oysters Ltd

Lacken

Duncormick

Co. Wexford

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**Re: Submission on the appeal by Jim Hurley (AP4-2-2023) against the decision by DAFM to grant licence for application (T03/038) in Ballyteigue Bay, Co. Wexford**

Dear Sir/Madam,

Mr Jim Hurley has appealed (AP4-2-2023) the determination of the Minister of the Marine to grant an aquaculture and foreshore licence to my application T03/038. I now make my submission to ALAB in defence against appeal AP4-2-2023.

**Response to points raised in Annex 2:**

**Point 1:**

Mr Hurley submits a press article from the Wexford People 14<sup>th</sup> December 1989 (allegedly) pertaining to Duncormick Aquaculture Ltd. and makes the point that the article refers to it as '*one of the biggest shellfish farms in the country*'. This venture would have been one of the first oyster farms in the country. It wasn't a big oyster farm at all. By virtue of the fact it may have been the first oyster farm in the country has led to the claim in the press article regarding its size. The reference to 1 and ¾ million oysters is most likely in reference to the number of seed oysters used in the site which would probably give rise to 50-60 T oysters (not a big oyster farm at all). Indeed, in the second newspaper article that Mr Hurley submits regarding refusal of an application for an oyster farm at Duncormick (presumably the same venture) it refers to ½ a million seed invested by the company. This would be the smallest type of oyster farm in the context of oyster farming in Ireland and would probably yield about 17-18T with normal mortality levels. Not the huge oyster farm that Mr Hurley is alluding to.

In reference to the shellfish toxicity for Ballyteigue Bay the state monitoring programme for Biotoxins present in shellfish from Ballyteigue would demonstrate that closure of Ballyteigue Bay due to biotoxicity of shellfish and indeed public notices conveying that message have been exceedingly rare. Indeed, Ballyteigue Bay would be the envy of many an oyster producing bay in the southwest

of Ireland that suffer much more from bay closures due to phytotoxic algal blooms. The state biotoxin monitoring programme is first class at protecting consumers from shellfish poisoning and so any attempt by Mr Hurley to suggest otherwise doesn't concur with the reality of the state management shellfish production in Ballyteigue Bay.

**Point 2:** Two Governmental Departments produced the roadmap to compliance for the Assessment of Aquaculture for the Habitats Directive. Aquaculture is subjected to rigorous and I would say harsh Appropriate Assessments particularly in relation to SPA assessments. Even the 15% rule for aquaculture and protected habitats in SAC's was originally meant to be 25% as indicated in EC guidelines but in Ireland the much stricter and precautionary value of 15% was agreed. So whatever poor record historically that Mr Hurley refers to does not have a bearing on the assessment that my application has been subjected to. Indeed, as explained in detail in my submission to the An Taisce appeal (AP4-1-23) it is clear that the SPA assessment of my licence application has been particularly harsh and the comments that I have made in response to that appeal are applicable to Mr Hurley's appeal also.

**Point 3:**

There are many reasons for a habitat to be reported as in an Unfavourable status such degrading water quality caused by anthropogenic inputs which can lead to reduced biodiversity particularly in estuarine systems. Oyster farms provide ecosystem services that counteract such pressures and indeed the structures and microhabitats that oyster farming structures provide enhance biodiversity in otherwise bland mudflats.

**Point 4:**

The point that Mr Hurley makes is one that looks at Ireland's performance from a National viewpoint and can no way be interpreted as specific of Ireland's performance to the Ballyteigue Burrow SPA assessment.

**Point 5:**

My oyster farming activities pre-date the SPA and the SAC designations. I am not sure if it is correct to state as Mr Hurley does that the Ballyteigue estuary is a *de facto* MPA. Does he mean no activity can take place within it?

**Point 6:**

Mr Hurley is correct in stating that the bay in which I produce oysters and for which I have applied for a licence within is indeed a shellfish classified production area. As such it is monitored routinely for E. coli levels in oysters and biotoxin levels in oysters and phytoplankton species in water samples. The area is consistently classified as B for E coli which means it is safe to harvest and export to buyers who then deplete the oysters prior to human consumption. It has been extremely rare for the oysters to have biotoxins from toxic phytoplankton.

**Response to Annex 3 (Original Submission by SWC Promotions on my application).**

Mr Hurley has resubmitted his comments (objections) that he submitted to DAFM in 2022 in relation to my application. He has included them in Annex 3 of his Appeal I will respond again to the issues raised.

SWC (Mr Hurley) refer to the area being an Area of Scientific Interest in 1979 however my oyster farm which started in the early 1980's predates the designation of the area as an SAC or SPA. As far

as I am aware no oyster farm application can be refused by virtue of the fact that the area has not be designated as a Shellfish Designated Waterbody. SWC/Mr Hurley appear to be claiming that the latter must precede the former which isn't the natural order of events. Furthermore, my site and oysters have been tested systematically for microbiological and biotoxin status during the course of my operation here. Furthermore, SWC/Mr Hurley claim that a Special Unified Marking Scheme (SUMS) is required before an application can be made. Once again this is not the natural order of events. Sites are licenced first then a SUMS is devised for the sites. Note the plural. SUMS are not required for one site but can be *considered* for more than one site. There is no legal requirement for a SUMS. However, if my site is licenced the required marks will be put in as recommended in the submissions by the relevant authorities and I will certainly be availing of BIM expertise when it comes to marking sites. Currently my site is marked by floating orange buoys.

Oyster farming does not exacerbate the biodiversity crisis that exists in Ireland and beyond today. It is underpinning ecosystem health by mitigating against the impacts from nutrient inputs from land thus protecting against eutrophication. This is something that is sadly lost on most wildlife agencies and private objectors in Ireland. It is not however lost on the Marine Institute nor the International Academic Community involved in ecosystem science. The Marine Institute in their conclusion to the appropriate assessment of mussel aquaculture in Wexford Harbour state that mussels are mitigating against eutrophication. The text below is from the concluding statement:

*-The filtration capacity of the mussels may have a beneficial impact on the eutrophication status of the bay and the habitat provision by mussels can be beneficial to the ecological function of the system.*

*-The addition of more mussels to the system (with new applications) should have additional benefit in terms of reducing effects of eutrophication and may mitigate the water quality status in the Lower Slaney water-body.*

Oysters act in a similar manner and one could argue are even better for biodiversity due to the structures used and in the gentle harvest method employed. So, for SWC to say that Aquaculture has been 'identified by the competent authorities for nature conservation as a threat to conserving habitat quality in the protected area...' is just incorrect.

All of my proposed aquaculture activities are clearly stated in my application. It couldn't be any more transparent. They were considered in the SAC Appropriate Assessment, contrary to what SWC/Mr Hurley are claiming.

My shellfish business has since its beginning in the early 1980's not imported any invasive alien species, has not caused the settlement of wild gigas oysters and is currently under more regulation than ever before in this regard through the Fish Health Authorisation and Shellfish Gatherers Documents process. Oyster farming with *Crassostrea Gigas* occurs in other bays around Ireland under licence after strict Appropriate Assessment and with tight Regulatory Oversight. Given all of the above I do not believe that my business is a threat in this regard.

Regarding the various SPA Appropriate Assessment comments that SWC make it is clear that not all of these comments are correct e.g. we often see Brent Geese feeding on our trestles even when we are on site turning bags not more that 20m away from them. This is also seen in other oyster farming bays in the southeast. So, for the SPA AA to say that the impacts on Brent Geese are significant is rather concerning. It is well known that Brent Geese use multiple areas for feeding (fields, green areas of stony shore near freshwater inputs). Just because they happen to be at these locations and not on the oysters when the bird monitoring commences does not mean that there is a

displacement impact. If my oyster trestles were not there the Brent Geese wouldn't be there as there wouldn't be much green algae growing at that location on a muddy shore. There is a significant distortion of the truth in the SPA AA comment and the subsequent promotion of that comment as a valid argument by SWC/Mr Hurley.

Further attempts to distort the truth arise in relation to impacts on fish. SWC/Mr Hurley are trying to claim that filter feeders are eating fish eggs and larvae. Firstly, mussel farming has been in Wexford Harbour since the 1970 (in its present format) and yet Inland Fisheries Ireland say that the Harbour is a very important area as a Sea Bass nursery. It doesn't appear to be the case that thousands of tonnes of mussel cultivation are impacting on fish populations in Wexford Harbour over the last 52 years as in stark contradiction to the SWC argument. Similarly, I have been here since the early 1980's and has there been any observable decline in fish stocks? Could it be that by maintaining ecosystem health through nutrient removal oysters (and mussels) are actually improving the environment for fish? The answer is yes. Are oyster farming structures providing additional shelter for fish and for marine life that fish feed on? Yes. Come down here on any warm day and I will show you the fish that take shelter on my farm. Are there additional feeding resources for marine life on my structures? Yes, there are, and they are prey for other marine life who are prey for fish.

SWC/Mr Hurley refer to the precautionary principle. Have my 40 years of farming here not shown that the precautionary principle is no longer relevant as there is one thing clear and that is I haven't had the negative impacts that SWC/Mr Hurley are claiming. In fact, I believe that my presence here has actually protected the ecosystem. I would argue that the precautionary principle would be better used to prevent my removal as there could be unknown negative impacts of a much more serious and irreversible manner if my farm was removed.

If my operation down here is so harmful as SWC/Mr Hurley are attempting to make out, then why haven't the NPWS who are the guardians of wildlife and who know of my operations for decades not been screaming to get me out of there to avoid catastrophic impacts such as SWC/Mr Hurley refer to? Maybe they realise that I am causing no harm.

#### **Response to Annex 4:**

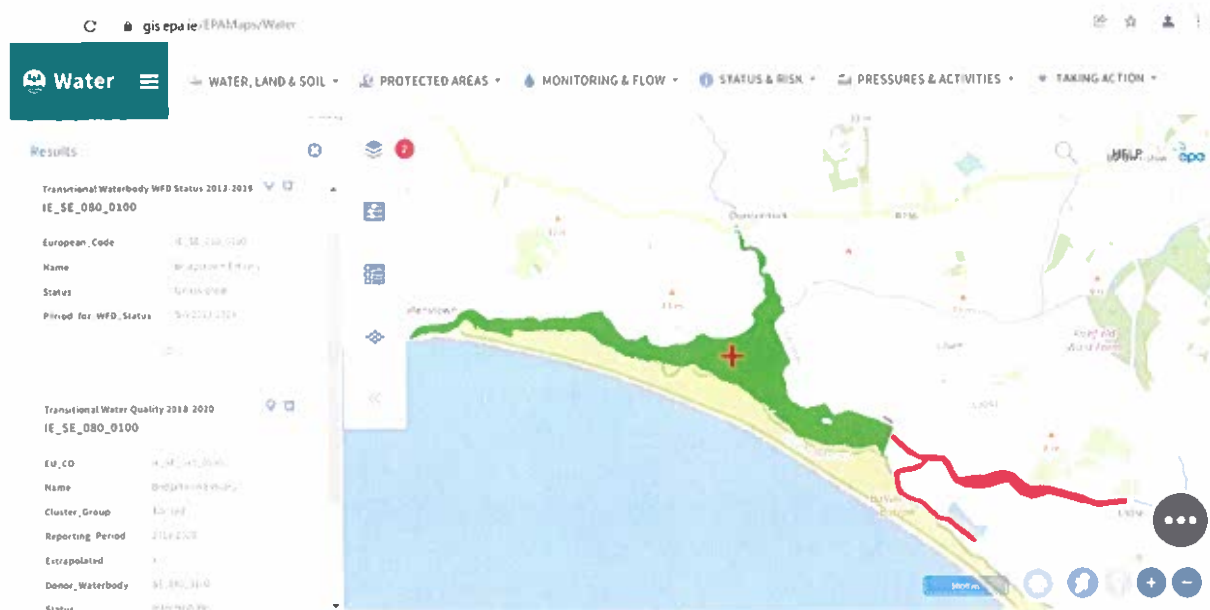
Mr Hurley states that shellfish aquaculture enriches the water. In other words, he is claiming that shellfish farming is in a manner akin to nutrient enrichment from agriculture or human waste water treatment plants is deteriorating the water quality. He remarkably then ventures further with this theory (that goes against all known academic knowledge) that as a result the licencing of my already existing oyster farm will affect the water in the bay so badly that failure to achieve the requirements of following Directives as pertaining to Ballyteigue Bay will result:

- The Habitat Directive for Ballyteigue
- The Birds Directive for Ballyteigue
- The WFD Directive for Ballyteigue
- The Marine Strategy Framework Directive for Ballyteigue

This is quite a remarkable statement in terms of the scale of the impact he believes oyster farming (even if currently existing for decades) will have on various Directives (that have a foundation in Water) but particularly in the utter ignorance he displays of the known benefits oyster farming has on water quality through in particular top down control of phytoplankton which has a positive impact on all of the above Directives. The evidence of this comes from many peer reviewed academic studies.

I note that the waterbody in which my site is located is referred to as IE\_SE\_080\_0100 under the Water Framework Directive and its latest status for Water Quality is Intermediate in the 2018-2020 assessment period. It is not 'bad'. I enclose a screenshot from the Catchments.ie website below. Oysters remove nitrogen and phosphorus from the waterbody during growth and at harvest. This is very well established in scientific peer reviewed scientific papers (see Summary end section and references

It is true to say that the waterbody that Mr Hurley refers to as 'bad' water quality under the 2013-2018 WFD status is named IE\_SE\_080\_0200 and is an almost enclosed channel with poor flow (see image below (the red channel). The reason for this status is not due to oyster farming and indeed it is oysters in Ballyteigue bay proper that are mitigating against the pressure exerted by this channel. Oysters drive ecosystems away from eutrophication by top down control of phytoplankton and through direct and indirect removal of nutrients.



**Image (above)** from Catchments.ie showing the 'bad' channel in red and the intermediate water body (green) which contains my oyster farm. The two water bodies are distinct.

So, when Mr Hurley suggests that oyster farming will add to the water quality pressures that are already evident from land he completely fails to understand that oyster farming is mitigating against the impact of land pressures on water quality. Oyster farming does not cause nutrient enrichment of sediments. It uses no artificial feed, it removes nutrients from the water column, drives the ecosystem away from eutrophication thus avoiding oxygen depletion caused by otherwise excessive alga growth. Enhanced bacterial denitrification can occur under oyster farms thus removing even more nitrogen from the transitional water body. The complete opposite of land-based agriculture.

It would be remiss of me not to bring to the attention of ALAB (for the purpose of responding to this appeal) the crucial ecosystem services that oyster farming provides as understood by academic experts who have looked at this objectively and which are mentioned below.

Although nitrogen is the main driver for eutrophication a dual-nutrient reduction strategy for Nitrogen and Phosphorus in Irish estuaries has been advocated (O' Boyle et al 2015). There are numerous studies calculating the nitrogen and phosphorus content of bivalve shellfish some of which are tabulated in a Review by Van der Schatte Olivier et al 2020 who calculate that on average, the dry weight of bivalve tissue contains 44.9% carbon, 9.3% nitrogen and 0.9% phosphorus, while

shell contains 11.7% carbon, 0.3% nitrogen and 0.04% phosphorus and through harvesting considerable quantities of these nutrients can be removed from the marine ecosystem.

However, Ferreira *et al* argue that harvest weight alone underestimates the annualized ecosystem service of nitrogen removal at the population level (three year grow out on farms) and has calculated that 11280 tons of oysters in Ireland remove 431.7 tons of nitrogen per year (Ferreira et al, 2016) or 38.27 kgN/ton of oysters. Hernández-Sancho calculates a shadow price for nitrogen removal of €30.93 Kg of N (conservative cost as it does not include capital costs of waste water treatment plant) (Hernandez-Sancho, 2010) and this is used by Norton in Irish ecosystem evaluations (Norton, 2018). So as an example, 10,000 tons of oysters would remove 382700Kg of N costing € 11,836,911 using the shadow cost of removal. This estimate is probably quite conservative given that costs for upgrades to wastewater treatment and urban stormwater collection in the USA can be as high as 7610 and 3629 US\$ /lb in the USA (Rose, 2014) or €14764 and €7041/kg N respectively.

In addition, bivalve shellfish enhance denitrification in sediments beneath them thus removing additional Nitrogen as harmless N<sub>2</sub> gas. Humphries determines that the denitrification rate for aquaculture oysters is 346  $\mu\text{mol N}_2\text{-N m}^2\text{h}^{-1}$  (Humphries, 2016) which is 0.0096926 grams of Nitrogen/m<sup>2</sup>/h-1 using a standard conversion. Rates of around 20 and some up to 1600  $\mu\text{mol N}_2\text{-N m}^2\text{h}^{-1}$  have been calculated by other researchers (Piehler, 2011), (Kellogg, 2013).

Under the 4th Nitrates Action Plan there is a Phosphorus (P) build up allowance for soil index types 1 and 2 for grasslands with a stocking rate above 130kg /Ha. Thus, any proposed intensification of agriculture could lead to increased levels of P in estuarine waters. The shadow cost of P removal is 93.63kg (Sebastiano, 2015) and is quoted by Norton in Valuing Ireland's Blue Ecosystem Services (Norton et al 2018). So, although there is less P removed by shellfish the shadow cost of removal is three times higher than for N. Thus, shellfish aquaculture is unique in providing the removal of N and P and could be involved in nutrient trading with agriculture but as it stands is offsetting agricultural inputs in real-time in the estuary.

Using the above conservative shadow prices, I would remove about 4200Kg of N per annum nett valued at 130,000 Euro (excluding the amount of Nitrogen removed through enhanced benthic-pelagic coupling) and also approximately 420 kg of P per annum nett valued at 39,000 Euro. If I was to average out of 40 years of oyster farming I have probably undertaken a nutrient removal service conservatively valued at over 6.5 million Euro in today's money. One could argue that I have done the most for protecting the environment in Ballyteigue through this service. More than any paper designation under the Habitats Directive. Of course, the cost of remediating a nutrient sensitive marine ecosystem that falls into a eutrophic state with associated oxygen depletions and widespread benthic dead zones, fish kills and removal of food resources to birds would be absolutely huge. Thus, there is an additional inherent economic value to the service that my farm provides by preventing such a catastrophe.

Shellfish aquaculture is at the very low end of the carbon footprint scale. A recent (September 2021) study published in Nature '*Environmental Performance of Blue Foods*' shows this clearly. <https://www.nature.com/articles/s41586-021-03889-2>

Good large-scale examples of this scientific/academically proven knowledge being put into action include the Billion Oyster Project in New York Harbour (<https://www.billionoysterproject.org/ecosystem-engineers> ) where water quality and ecosystem improvements in New York Harbour are achieved by **adding oysters** to the waterbody. Equally the Chesapeake Bay Foundation who are restoring water quality in the bay using oysters <https://www.cbf.org/about-cbf/our-mission/restore/oyster-restoration/index.html>

And the Oyster Recovery Partnership (ORP) also in Chesapeake Bay using oysters to clean up the water. Indeed, the public can even buy oysters to be placed in the waterbody to assist with the process.

<https://oysterrecovery.org/water-quality-improvement/#:~:text=Science%20has%20shown%20that%20oysters,into%20their%20tissue%20and%20shells.>

The above examples use native oysters but the same principle can be applied to aquaculture oysters as recommended by the National Oceanic and Atmospheric Administration (NOAA) who say as an example in a recent joint study that all of the nitrogen currently polluting the Potomac River estuary could be removed if 40 percent of its river bed were used for shellfish cultivation. The very same principles apply.

<https://oceanservice.noaa.gov/news/apr14/oyster-aquaculture.html>

According to NOAA

*-this alternative approach to water quality management has the potential to address legacy pollution, provide a marketable seafood product if there are no other contaminant issues that would prevent human consumption, and enhance local economies with additional income to growers through the possible development of a program—similar to those being considered in other parts of the country—where growers would be paid for the water cleaning services done by their oysters.*

There are many more examples of using oysters and other filter feeders to keep ecosystems healthy and diverse all around the world.

Unfortunately for oyster farmers in Ireland, not only would it even be considered that they get paid for such water cleaning services but we have people and organisations who proclaim to be protecting the environment actually still believing or at the very least are trying to propagate the untruth that oysters cause water quality problems and doing everything they can to prevent oyster farming in estuaries. A pretty bleak assessment of the state of environmental protection by those proclaiming to care the most in this country.

Does Mr Hurley honestly believe that by taking the one species that consume phytoplankton in huge quantities out of a waterbody that has high nutrient loadings that it is going to improve water quality and therefore lead to increased Directive compliance? Wexford County Council in their submission to my application previously stated their support for my licence on the basis of the positive impact it will have on water quality. At least they and the Marine Institute know how important shellfish are to water quality and ecosystem health. Like New York Harbour, Chesapeake Bay and the Potomac Estuary maybe the solution would be to have more oysters in the bay.

The only thing I can give Mr Hurley credit for in the point he makes in Annex 4 is that he has realised that good water quality is the foundation of a healthy ecosystem and thus underpins compliance



with the Directives he lists. In that regard he is ahead of An Taisce in understanding of the importance of water quality.

#### **Annex 5:**

In Annex 4 Mr Hurley makes reference to hedgerow clearing exacerbating fertiliser run-off from agriculture. That may well be very true. He goes on to make a separate point of it in Annex 5 and highlights the hydro morphological connection between fields adjacent to the estuary that have had hedgerows cleared. Firstly, I'll state the obvious in that I have no say as to what hedgerows are removed as it isn't my land. Secondly I would reiterate that given the nutrient pressures incoming into the estuary from land it is even more important that my shellfish farm is licenced as removal of it will lead to a rapid decline in the water quality status of the estuary and will indeed as Mr Hurley alludes to in Annex 4 cause problems with the ecosystem in terms of compliance with various directives based in water. It's quite remarkable that he is suggesting that oysters will add to the water quality problems. I refer back to the above points I have made in response to his Annex 4 points. He in Annex 5 is suggesting that because several hedgerows have been cleared close to the waterbody that is **another reason** not licence me. Clearly a desperate mind-boggling attempt to stop the licence that really isn't worthy of serious consideration.

Yours Sincerely

Noel Roche

Ballyteigue Oysters Ltd.

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