RISK ASSESSMENT FOR ANNEX IV SPECIES

Extensive Aquaculture

Valentia Harbour & Portmagee Channel SAC

(Site Code: 2262)

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Marine Institute

Rinville, Oranmore,

Co. Galway

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Introduction

This Annex IV Risk Assessment has been prepared by the Marine Institute to comply with the provisions of Article 12 and 13 of Council Directive 92/43/EC in relation to the protection afforded to Annex IV species from disturbance or harm. Specifically, this Risk Assessment appraises the current and proposed extensive aquaculture activities at the Valentia Harbour and Portmagee Channel SAC (Site Code: 2262).

Legislative Context

The Habitats Directive has identified a number of animal and plant species across Europe, which are rare or are threatened with extinction and which need special measures to be taken to ensure their long-term survival. Under Article 12 and 13 of the Habitats Directive, Member States must establish systems of strict protection for animal and plant species which are listed on Annex IV of the Habitats Directive. Article 12 and 13 of the Habitats Directive are transposed into Irish law by Regulations 51 and 52 of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended[1].

The aim of the strict protection measures (set out in Article 12 (for animals) and 13 (for plants) of the Directive) is that the species in question will reach and remain at favourable conservation status. This means that the population dynamics of the species concerned can maintain itself on a long-term basis as a viable component of its natural habitats. It also means that the natural range of the species is neither being reduced, nor is likely to be reduced for the foreseeable future, and that there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Annex IV species are afforded strict protection throughout their range, both inside and outside of designated protected areas. This protection is afforded to these species at all stages of their life cycle and wherever they occur. This protection includes from deliberate disturbance of these species, particularly during periods of breeding, rearing, hibernation and migration. It is an offence to deliberately capture or kill, keep, transport or sell, injure or disturb a specimen in the wild, or damage or destroy a breeding site or resting place of an Annex IV animal species. For plants it is an offence to deliberately pick, collect, cut, uproot or destroy any specimen of these species in the wild, or keep, transport, or sell any specimen of these species taken in the wild.

S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011
Protection of fauna referred to in the First Schedule **51.** (1) The Minister shall take the requisite measures to establish a system of strict protection for the fauna consisting of the species referred to in Part 1 of the First Schedule. (2) Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a licence granted by the Minister under Regulation 54 or 54A, a person who in respect of the species referred to in Part 1 of the First Schedule— a) deliberately captures or kills any specimen of these species in the wild, b) deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration,

[1] https://www.npws.ie/legislation

c) deliberately takes or destroys eggs of those species from the wild,
d) damages or destroys a breeding site or resting place of such an animal, or
e) keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive,

shall be guilty of an offence.

(3) The prohibitions referred to in paragraph (2) shall apply to all stages of life of the biological cycle of fauna to which this Regulation applies.

(4) The Minister shall establish a system to monitor the incidental capture and killing of fauna consisting of the animal species referred to in Part 1 of the First Schedule and, having regard to the information gathered, he or she shall conduct further research or take such conservation measures as required to ensure that incidental capture and killing does not have a significant negative impact on the species concerned.

Protection of flora referred to in the First Schedule

52.

(1) The Minister shall take the requisite measures to establish a system of strict protection for the flora consisting of the plant species referred to in Part 1 of the First Schedule.

(2) Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a licence granted by the Minister under Regulation 54 or 54A, a person who in respect of the plant species referred to in Part 1 of the First Schedule—

a) deliberately picks, collects, cuts, uproots or destroys any specimen of these species in the wild, or
b) keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in the wild, other than those taken legally as referred to in Article 13(1)(b) of the Habitats Directive

shall be guilty of an offence.

(3) The prohibitions referred to in paragraph (2) shall apply to all stages of the biological cycle of the flora to which this Regulation applies.

The list of Annex IV species which occur in Ireland and its waters[2] is set out in Table 1.

Table 1 Annex IV species which occur in Ireland (NPWS).

Animals	Plants
All bat species	Killarney Fern
Otter	Slender Naiad
Natterjack Toad	Marsh Saxifrage
Kerry Slug	
Dolphins, Whales and Porpoises	
Marine Turtles	

As an Annex IV species may be found throughout the country, the protection of these species is not restricted in geographical terms and is not necessarily associated with areas subject to a specific designation. Any works or projects must ensure compliance with the requirements of the Regulations, which means avoiding impacts to Annex IV species. To do this a project must determine the probability of the protected species being present in the area affected by the works, using existing information,

[2] https://www.npws.ie/legislation

and applying the precautionary principle. If it is highly unlikely that an Annex IV species could be present or affected by the works, then the works will be compliant with Regulations 51 and 52[3].

If information shows that the Annex IV species is present, or may be present, then an investigation to establish presence is required. The Precautionary Principle must be applied in relation to this matter at this stage. If the investigation finds the species to not be present then the project may proceed. If an Annex IV species is found to be present, or there is a breeding or resting place to which the animals are likely to return, then the likely impacts of the project needs to be examined to see if those impacts can be avoided through the design of the works[4].

[3] Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. 2021. National Parks and Wildlife Service Guidance Series 1. DHLGH Link

[4] Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland. 2021. National Parks and Wildlife Service Guidance Series 1. DHLGH Link

Outline of the Proposed Aquaculture Activities

This is an assessment covering extensive aquaculture activities within the Valentia Harbour and Portmagee Channel SAC (Site Code: 2262). Currently within the SAC there are 13 sites at different stages within the licencing process (Table 2 and Figure 1):

- 4 Licensed sites:
    - 4 intertidal shellfish sites for culture of Pacific oysters
        - T06-366A, T06-374A, T06-389A and T06-365A
- 9 Applications sites:
    - 9 sites for intertidal shellfish culture of Pacific oysters
        - T06-503A, T06-461A, T06-514A, T06-502A, T06-515A, T06-521A, T06-517A, T06-509A and T06-450A

There are 2 additional sites for the culture of Pacific Oysters (T06- 416A -licenced and T06-518A - application) that lie outside the boundaries of the SAC but are within the Valentia Harbour system (i.e., Ferta River Estuary).

Table 2 Licenced aquaculture and applications for aquaculture activities considered in this report.

Site No.	Status	Activity/Species	Total Area (ha.)
T06-366A	Licensed	Pacific Oyster	6.0
T06-374A	Licensed	Pacific Oyster	7.64
T06-416A	Licensed	Pacific Oyster	1.56
T06-389A	Licensed	Pacific Oyster	5.60
T06-365A	Licensed	Pacific Oyster	5.65
T06-503A	Application	Pacific Oyster	4.55
T06-461A	Application	Pacific Oyster	9.64
T06-514A	Application	Pacific Oyster	4.93
T06-502A	Application	Pacific Oyster	4.77
T06-515A	Application	Pacific Oyster	1.0
T06-521A	Application	Pacific Oyster	2.28
T06-517A	Application	Pacific Oyster	10.37
T06-509A	Application	Pacific Oyster	12.1
T06-450A	Application	Pacific Oyster	8.47
T06-518A	Application	Pacific Oyster	3.52

Existing and proposed aquaculture sites are presented in Figure 1.

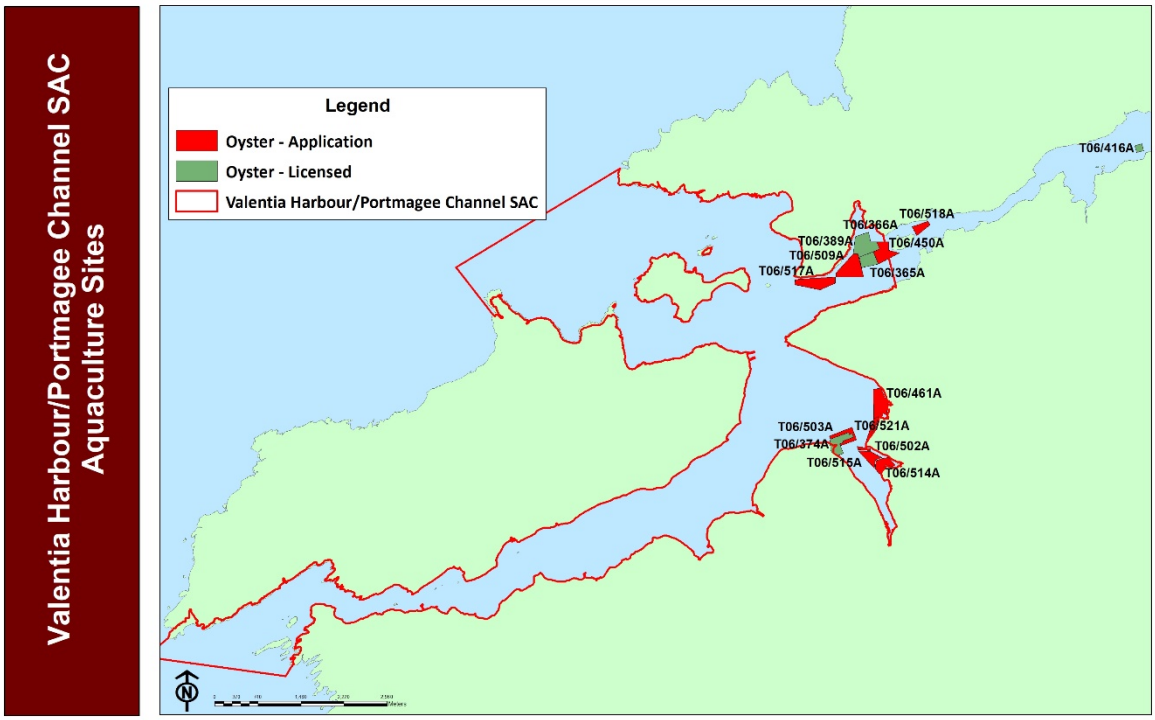

Figure 1 Existing and proposed aquaculture sites (Licenced and Applications) in Valentia Harbour/Portmagee Channel SAC (and surrounds).

Extensive Oyster Culture - *Magallana gigas*

Oyster farming in Valentia takes place in the intertidal zone using the standard bag and trestle culture method as employed across Europe and the world. Cultivation of the Pacific oyster (*Magallana gigas*) is carried out by growing oysters in mesh bags placed on steel trestles to keep them elevated above the seabed. Oysters are not artificially fed nor do they receive any medicinal treatments. They are filter feeders relying completely on the natural environment for food, and consume phytoplankton when submerged during high tide periods. Water quality conditions are considered important for successful shellfish culture.

Currently Valentia Harbour is used for the production of half-grown oysters which are harvested at this size and finished in other bays both in Ireland and in France. The production cycle begins in Valentia when triploid G6 seed is introduced from the French hatchery, France Nissan. Production takes 18-24 months on site. Upon receipt from the hatchery, seed is placed in the mesh plastic bags with mesh size and stocking density appropriate to the seed grade. As the oysters grow stocking densities are reduced. Bag sizes used on site are 2mm to 9mm.

Grading takes place annually between October and April. Grading and harvesting activities entails actually removing the bags from the inter-tidal zone to a land based site. They are collected by hand, loaded onto trailers and transported by tractor. Maintenance activities on-site include shaking and turning of bags, which are shaken and turned on site. Tractor movements in this instance are for the transport of staff to and from site. There are a number of access routes for the operators in the area to the applied licensed sites. For the sites in the northern portion of the SAC, frequency of site access is every day by tractor along the margin of upper shore and land from Ballycarbery Castle to the sites.

These habitats are typically hard packed sand. Other oyster culture sites have direct access from land with little or no access along the shore outside of licenced areas. Access to sites the Derreen River is along the shore or directly from land. It is proposed that, two sites (T06-461A, T06-521A) will be accessed by boat only from a launch point near the mouth of the Derreen River.

Harvesting occurs between September and June and involves hand placing of the bags on tractor and trailer to be brought ashore.

Relevant Annex IV Species

The Habitats Directive has identified a number of plant and animal species across Europe, which are rare or are threatened with extinction and which need special measures to be taken to ensure their long-term survival. All species listed under Annex IV with the potential to be impacted by the existing and proposed aquaculture activities should be included, even if they have been separately assessed in the AA process.

Of the animal and plant species on Annex IV known to occur in Ireland, the following species were identified as relevant to the existing and proposed aquaculture sites:

Dolphins, Whales and Porpoises

There are a number dolphin, whale and porpoise species recorded within the greater Kenmare Bay area (proximate to Valentia Harbour). These are large mammals, that utilise a wide range of marine habitat environments. Whales tend to be migratory, following food, and are found in open ocean. Dolphins are found from shallow coastal waters to the deeper open ocean. They feed on a variety of fish and invertebrates, such as squid. Porpoises are also found from shallow coastal waters to the deeper open ocean, and are generally shy and elusive and prefer to avoid contact with boats and humans. The depth at the extensive aquaculture sites, which are chiefly inter-tidal, is not suitable habitat for dolphins, whales and porpoises in general. While there may be isolated sightings in the vicinity, the lack of spatial overlap or likely interactions between the Annex IV species and the aquaculture activities means there is no significant risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced by the existing and proposed shellfish aquaculture operations.

Otter

Ireland remains a European stronghold for the otter and the species is widespread here in rivers and streams and along the coastline and lakeshores. Otters have two basic habitat requirements: adequate prey; and safe refuges where they can rest and breed. Otters maintain territories along river banks, lake shores and coasts. Coastal territories require a freshwater source for the otter to wash, so will always include a stream or spring. In productive areas, such as coastlines, territories are in the range of 5-6 km. On the coast, otters forage within 80-100m of the coastline, typically in depth of <3m, but up to 10-12m. For foraging they prefer shallow, rocky environments with seaweed cover. Otters maintains numerous resting places, known as couches (above-ground, hidden in foliage) and holts (underground, among roots, rocks, or tunnels) within its territory. They breed all year, nesting in a well-hidden natal holt.

Otter are reported within the area of the SAC so are considered in more detail in this risk assessment.

All bat species

These are marine sites at a distance from bat habitats. These projects do not impact on trees, hedges, buildings, bridges, caves, souterrains or changes in lighting, so bats are not likely to be present or affected by the works. As bats are not likely to present, the lack of spatial overlap or likely interactions between the Annex IV species and the aquaculture activities means there is no significant risk to the

number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced.

Natterjack Toad

The natural ranges for the Natterjack Toad are freshwater and terrestrial. Populations are restricted to sites in County Kerry. They were recorded present at Ballycarberry, adjacent to the aquaculture sites, but have become extinct at this site during the last 50 years, due to agricultural drainage. Natterjacks are nocturnal and during the day they hide under logs and stones. Over winter, natterjacks hibernate in burrows that they dig themselves in sandy soils, or in piles of rocks or dry-stone walls. The toad breeds in shallow ponds and forages in the areas around those ponds at these locations. The extensive aquaculture sites are not a suitable habitat for Natterjack toads. Any overlap between these marine sites and this species is highly unlikely, so there is no risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced.

The Kerry Slug

The Kerry Slug are terrestrial and nocturnal (generally), with their natural ranges restricted to sites in County Kerry and west Cork (and more recently found in Galway, Limerick and Tipperary). Its habitats are woodland, and lichen covered rock outcrops and boulders. These aquaculture sites are not a suitable habitat for the Kerry slug. Any overlap between these marine sites and this species is highly unlikely, so there is no risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced.

Plants

The natural ranges for the Annex IV plants species (Killarney Fern, Slender Naiad, and Marsh Saxifrage) are terrestrial and it is highly unlikely to be impacted by these projects, so there is no risk to these Annex IV species.

Marine Turtles

Leatherback turtles (*Dermochelys coriacea*) are occasional visitors to Irish waters. During the ObSERVE surveys[5], 3 leatherback turtles and 2 unidentified turtles were recorded during the summer months, 4 in the southern extent of the Celtic Sea survey area and 1 to the north of the Porcupine bank. Considering the rarity in Irish waters of these widely roaming marine species, that may utilise entire oceans, it is highly unlikely that there will be any significant interactions with these Annex IV species, and there is no risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced.

Conclusion

The relevant Annex IV species which are likely to be present in the area or potentially affected by these projects, and considered for further investigation, are: Otter.

[5] Rogan, E., Breen, P., Mackey, M., Cañadas, A., Scheidat, M., Geelhoed, S. & Jessopp, M.(2018). Aerial surveys of cetaceans and seabirds in Irish waters: Occurrence, distribution and abundance in 2015-2017. Department of Communications, Climate Action & Environment and National Parks and Wildlife Service (NPWS), Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland. 297pp

Risk Assessment

Assessment

Otter

Otter are reported within the area of the SAC. The nature of the extensive aquaculture means it will not have an effect on the number or availability of prey for the otter – which is an opportunist, mainly eating fish, but eats frogs, small birds, eggs, mussels, crabs and other invertebrates. While the general habitat in the area is likely to support otters, the intertidal areas of extensive aquaculture are not considered ideal foraging areas for otter, which prefer shallow, rocky environments with seaweed cover for foraging. The extensive aquaculture, being in the intertidal area, and the access routes, being in well-travelled routes, are highly unlikely to interfere with the couches and holts within its territory, nor to disturb the breeding locations.

Summary of Potential Impacts and Risk Assessment

The main impacts associated with the proposed projects on otter are related to:

- Obstruction - The structures (generally trestles) and activities associated with this form of oyster culture structures are positioned on, and rising to approximately 1m above, the intertidal seabed. They are oriented in rows with gaps between structures, thus allowing free movement through and within the sites. The structures are placed on the lower-shore, in the intertidal area, which is covered by water for most of the tide. They will not interfere with the natural behaviour of the otter.
- Entanglement - Shellfish production activities are highly unlikely to pose any risk to otter populations through entrapment or direct physical injury.
- Displacement - The number of couching sites and holts or, therefore, the distribution, will not be directly affected by aquaculture activities.
- Disturbance - The proposed culture operations are generally carried out in daylight hours. The interaction with the otter will be minimal, given that otter foraging is primarily crepuscular. Disturbance associated with vessel traffic could potentially affect otter at these sites. However, the level of disturbance is likely to be very low given the likely encounter rates will be low dictated primarily by tidal state and in daylight hours.

The potential for impact from the listed hazards are generally highly unlikely or of low intensity. The lack of significant spatial overlap or likely interactions between the Annex IV species and the aquaculture activities means there is no significant risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced.

Mitigation Measures

Otter

Otters are highly unlikely to interact with extensive aquaculture sites. Based on the information above, no mitigation measures for otter encounters are considered necessary for these extensive aquaculture activities.

Conclusions

Following a risk assessment of the current and proposed aquaculture sites at Valentia Harbour and Portmagee Channel SAC (Site Code: 2262), Co. Kerry, the activities pose no risk to the number of individuals to breed successfully, nor to the survival of the population, and the species natural range is secure and will not be reduced, for the Annex IV species which occur in Ireland and its waters.