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BirdWatch Ireland submission to the further information requested from Arklow Bank Wind Park 2

A report by staff at BirdWatch Ireland

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Introduction

BirdWatch Ireland is Ireland's leading charity focused on the conservation of wild birds. Established in 1968, we currently have over 15,000 members and supporters and a local network of over 30 branches nationwide. As an organisation, our conservation team is actively involved in seabird conservation, research, and monitoring. Our policy and advocacy team are active stakeholders contributing to marine conservation at a national and EU level. We are the Irish partner of Birdlife International and are members of the Irish Environmental Network, Stop Climate Chaos, and the Sustainable Water Network, and a founding partner of the Fair Seas coalition. Our vision is that Ireland should become a world leader in marine conservation and the sustainable management of our marine environment, in which the protection and restoration of Ireland's biodiversity is vital.

For many years BirdWatch Ireland has been working to gather data and information on the importance and usage of our marine environment for seabirds and waterbirds, including tagging and tracking of seabirds at key sites, Digital Aerial Survey (DAS) work, observations on the daily movements and flight lines of a range of species, annual monitoring and management of key seabird colonies for more than 20 years (carried out largely under contract to the National Parks and Wildlife Service (NPWS)), advocacy for increased protections and concise management plans for seabirds, and responding to consultations regarding proposed offshore developments in Irish and UK waters. BirdWatch Ireland therefore has a unique understanding of the importance of Ireland for birds and the possible impacts of continuing and increasing marine activities on their populations.

Ireland's Seabirds

Ireland's marine environment plays host to a huge diversity of ornithological life year-round. In summer, our offshore islands and cliffs host seabird breeding colonies, many of which are of international importance or regional significance. In winter, our coasts and estuaries are of huge importance for wintering waterbirds. Seabirds, as apex marine feeders, are exposed to all threats affecting the ocean and are excellent biodiversity indicators, providing us with an insight into the health of, and pressures facing, our marine environment [1].

However, 23 of 24 breeding seabirds in Ireland are either Red or Amber listed Birds of Conservation Concern [2]. They are highly vulnerable, facing current pressures and future threats [3], including bycatch and incidental killing (due to fishing and hunting activities) [4], desynchronisation of biological/ecological processes due to climate change, decline or extinction of related species (e.g. food source/prey, predator/parasite, symbiote, etc.), other invasive alien species (other than species of Union concern), and now new potential impacts from offshore renewables (ORE), including associated infrastructure on both land and sea.

The main impacts of ORE windfarm projects on seabirds and waterbirds include displacement, disturbance, and collision risks. However, there are a range of other possible impacts, including barrier effects (where wind turbines and structural development can interfere with birds foraging and migration routes, increasing their individual energy expenditure and limiting available habitat), cumulative impacts (how impacts of all current and future ORE projects within and around the Irish marine environment work in concert with each other and affect birds who interact with them), wider ecological impacts on fish stocks/prey base and ORE development's impact on fishing effort and location (impacts prey base/fish stocks, such as changes in prey populations and locations, during the infrastructure's lifespan and how that might consequently impact seabird foraging opportunities), and impacts on non-seabird species, waterbirds and other larger birds using the air space.

Even though Ireland has designated a network of Special Protected Areas (SPAs) at coastal sites aimed at protecting the most important areas for breeding seabirds, trends in population and range show that some species are in decline [5] and more needs to be done to address threats to seabirds. In particular, the cumulative effects of multiple types of activities and developments within the marine environment must be adequately assessed.

BirdWatch Ireland submission to the further information requested from Arklow Bank Wind Park 2

We at BirdWatch Ireland welcome the opportunity to respond to the Further Information reported by Arklow Bank Wind Park 2 (hereafter referred to as ABWP2) and produced in response to the Further Information requested by An Coimisiún Pleanála (hereafter referred to as ACP). In our original submission to ABWP2's project application, we expressed some concerns around the way birds using the ABWP2 project area were being considered within the Environmental Impact Assessment Report (EIAR) and were glad to see similar and expanded bird concerns expressed by others and ACP in the documentation that has been made available since the original ABWP2 project application.

While we appreciate that many of our concerns were addressed by ACP and ABWP2, we believe some of our concerns still require further consideration or research before we can agree with the determination that ABWP2's offshore wind development will not have a significant impact on birds. Below we have detailed where we continue to have strong concerns, along with the data and rationale that warrants either further consideration or appropriate mitigation in order to limit impacts to birds to an acceptable level before a determination is made and/or construction begins. For ease of comprehension, we have also included the table below as a summary of our continued concerns following the Further Information requested and received that are discussed within this document (Table 1).

Table 1: Summary table of BirdWatch Ireland’s concerns based on the reports from ACP and ABWP2 as part of the Further Information Request process. All concerns are expanded upon within this document below.

Specific BWI Concern	Section number within this document	Additional details
Need for more research into prey species shifts after habitat alterations and potential impacts to foraging seabirds	1	Concerns about the potential impacts to seabirds through changes in prey species and foraging habitat. Need for more information on prey species availability and whether additional foraging areas exist. Also call for further research into the movement patterns of locally nesting seabirds at Wicklow Head SPA, beyond the Kittiwake tagging already supported.
Risk of cumulative impact and displacement of sensitive bird species from east Irish coastline	2	Concerns about the risk of cumulative impacts from 3 of the Phase I projects, including ABWP2, to seabirds utilising the east Irish Sea. We are particularly concerned with impacts to auks, wintering seabirds, and birds migrating through the Irish Sea.
Issues with the updated Kittiwake collision estimates	3	Issues with the update Kittiwake collision risk estimates used by ABPW2, and an alternative methodology proposed within this submission that should be used in future modelling and impact assessments.
Mitigation and post-construction monitoring	4	Suggestions on post-construction monitoring that should be required within any consents to ensure that impacts to birds are properly recorded and addressed through mitigation when needed. This section has two subsections (<i>4.1- Radar and continuation of monitoring throughout ABWP2 lifespan</i> and <i>4.2- Continued support for blade-painting trials in Irish waters on Phase I projects</i>)

Before getting into our concerns, we would like to commend ABWP2 for their support of continued research and observation of the seabirds utilising the Wicklow coast. ABWP2’s support of projects such as the Black-legged Kittiwake (*Rissa tridactyla*; hereby referred to as Kittiwake) tagging at Wicklow Head, led by Dr. Mark Jessopp’s research unit at University College Cork, is important for better understanding the behaviours and movements of Kittiwakes in the Irish Sea. With Kittiwakes in serious decline throughout Ireland and globally [2,3], continued research into their movements, feeding areas and diet are crucial, and we look

forward to publications detailing the results of this work. Research has shown that *'it is vital to know the colony-specific foraging grounds of seabirds that may be impacted, when identifying potential wind farm sites...'* [6] and we commend ABWP2 for supporting this work and urge them to continue this. A comprehensive understanding of the local seabird communities within this specific area of the Irish Sea, including how breeding colonies and passage birds utilise the local marine environment, is not only important to better modeling of potential impacts ahead of construction, but also to understand and properly adapt to impacts in real-time during the operational lifespan of the project. We appreciate ABWP2's support of this important research on locally breeding Irish seabirds and urge the continuation of such work.

1. Need for more research into prey species shifts after habitat alterations and potential impacts to foraging seabirds

In our original submission, we highlighted that *'key seabird species breeding at the Wicklow Head SPA are likely to forage in the unprotected waters nearby including the Arklow Bank'* and acknowledged the above Kittiwake tracking work to address the lack of data on their feeding areas. Our concerns were echoed by ACP in their Further Information Request when they requested *'a comprehensive assessment of fish and shellfish ecology within the EIA should be ensured to confidently discount potential impacts to Natura 2000 sites designated for QIs that rely on fish and shellfish as prey items'* and added that *'the applicant consider providing distribution modelling and analysis of overlap between seabird populations, prey species / fisheries and the project'*. We acknowledge the work done by ABWP2 within both *Chapter 10: Fish, Shellfish, and Sea Turtle Ecology* and *Chapter 12: Offshore Ornithology* on this topic of potential foraging impacts to seabirds from prey fish changes due to the ABWP2 development; however, we remain concerned that there is still potential for significant adverse impacts to foraging seabirds through impacts to prey and high-quality foraging habitat. Throughout ABWP2's assessments of impacts to seabird prey species and foraging habitat, there was too much emphasis placed on the expectation that habitat and fish will recover and/or that alternative foraging areas exist to support the nearby breeding colonies when ABWP2's construction and operations reduces habitat availability or quality along the Arklow Bank. Without better knowledge, we believe this is an oversimplification and places unnecessary additional pressures on seabirds that are already vulnerable and experiencing population declines. For this reason, we believe that further research is needed on both the specific foraging use of this area by other key seabird species that rely on it and on the extent of foraging habitat available within foraging range distance of potentially impacted colonies.

In both *Chapter 10: Fish, Shellfish, and Sea Turtle Ecology* and *Chapter 12: Offshore Ornithology*, it was stated that *'... there would be no significant effects during the construction, operational and maintenance, or decommissioning phases of the Proposed Development'*, and that there would be a *'slight or imperceptible adverse direct impact on fish prey species will have an undetectable indirect impact on seabird species'* through habitat loss. While most

impacts to prey species from the ABWP2 development are determined to be either slightly adverse or negligible, and therefore not significant in EIAR terms, these assumptions rely on the ability for the prey to quickly recover and for seabirds to be able to forage elsewhere when the impacts have altered the habitat quality or prey availability. Within *Chapter 12: Offshore Ornithology*, impacts from the construction of ABWP2 to prey fish are predicted to have a '*rapid recoverability following cessation of the effect*' and '*the impact of displacement and disturbance is predicted to be of local spatial extent, long term duration, continuous and high reversibility*' during operation, while '*affect[ing] seabirds indirectly*'. There is no evidence provided to support this statement that the impacts to prey fish will be 'recoverable' or 'reversible', and it is possible that construction and operation of ABWP2 will permanently alter the seabed surface and make the habitat no longer suitable for some specific and important prey species.

This potential to permanently change the habitat type within the ABWP2 marine footprint and surrounding marine environment is particularly important as it relates to prey fish that rely on sandy shallow waters, such as critically important prey species like herring (*Clupeiformes*) and sandeel (*Ammodytidae*). We appreciate that ABWP2 did investigate the overlap between their area and important spawning and nursery grounds for these critical species, as highlighted by Figure 10.3 from *Chapter 10: Fish, Shellfish, and Sea Turtle Ecology* (a panel of which is presented below as Figure 1); however, there was no evidence included that supported the recoverability of the habitat and prey fish. The hard infrastructure from ABWP2 could permanently change the substrate of this area and alter the foraging availability of prey fish that are more tied to sandy soft substrates, such as sandeels. ABWP2's own reporting states that '*...displacement of sandeel-dependent seabirds from optimal habitat may increase mortality*' so it is important that we fully understand (1) how the habitat might change, (2) whether there is alternative habitat that is accessible and can support the reliant seabird colonies during times when the Arklow Bank is not available due to ABWP2, and (3) the timeframe for recoverability or reinstatement of sufficient habitat quality for prey fish communities that can support foraging seabirds. Without this information and evidence, there is still the potential for significant adverse impacts to foraging birds and nearby breeding colonies such as Wicklow Head SPA, the closest SPA to ABWP2 [7].

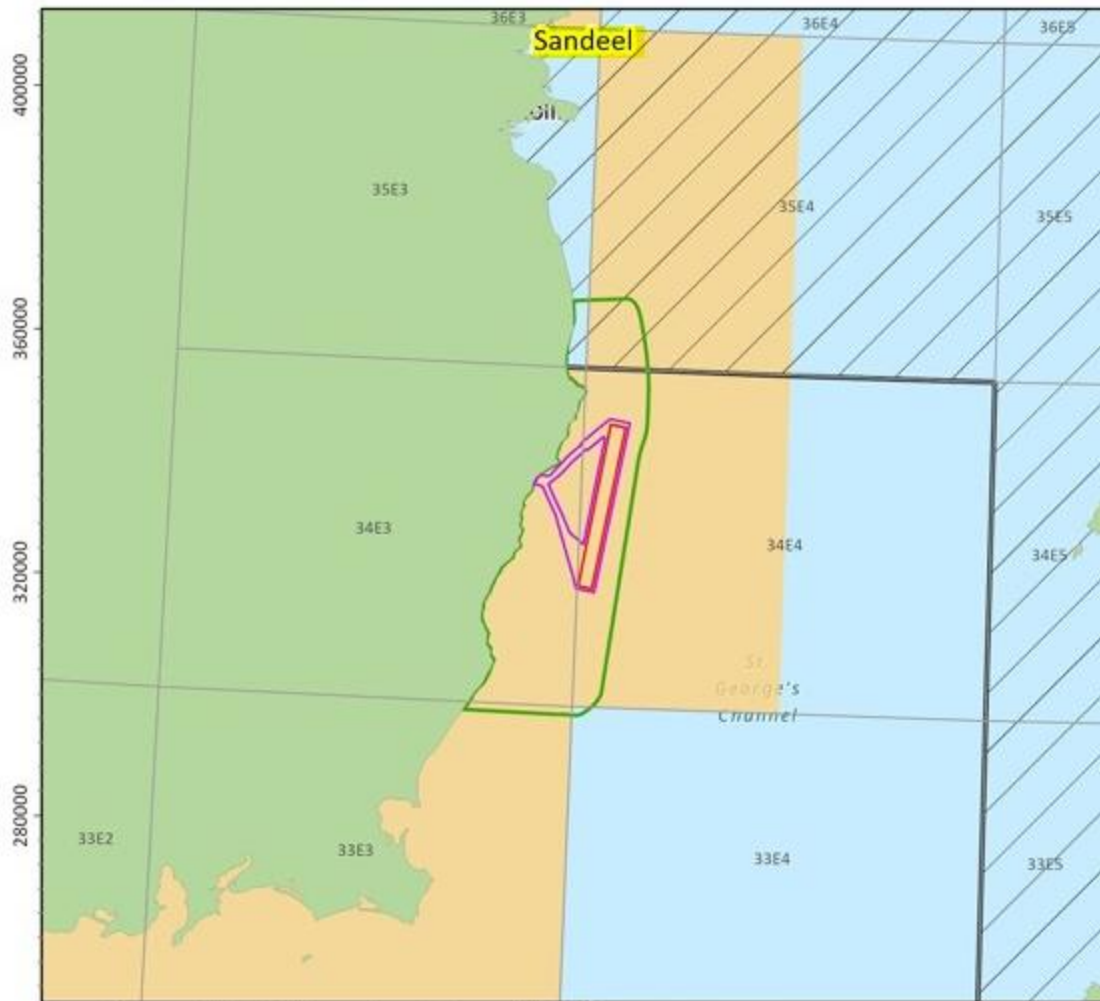


Figure Reference: Ark_004_FishNurserySpawningGroundsFig10.3

Figure 1: A reprint of one panel from *Figure 10.3 Spawning and nursery grounds* in *Chapter 10: Fish, Shellfish, and Sea Turtle Ecology* showing the spawning and nursery grounds for sandeels (orange polygons) that overlap with ABWP2's marine footprint (purple and pink lines).

Along with the ongoing research on the marine use and movement of Kittiwakes from Wicklow Head SPA, we also called for further research into the foraging patterns for the other seabird species nesting at the Wicklow Head SPA (Guillemot (*Uria aalge*), Razorbill (*Alca torda*), and Shag (*Phalacrocorax aristotelis*)) within our original submission. We highlighted that Shag are 'most likely to utilise the shallow waters of the Arklow Bank' for foraging and the other auk species also nest with the Wicklow Head SPA, making a nearby foraging ground critical to reproductive success and population growth. We believe these species warrant further research and consideration within the ABWP2 project application and EIAR. Information about their foraging behaviour would offer more clarity on the potential impact of ABWP2 on the foraging quality of Arklow Bank, and whether there are alternative foraging areas for these breeding seabirds should the habitat quality of Arklow Bank diminish during the ABWP2 construction and operation. This information would also help inform mitigation strategies, changes in operational

plans to limit impacts to birds, and/or compensation if/when needed to address ABWP2's impacts on prey availability and quality (more on this below in section 4: *Mitigation and post-construction monitoring*).

2. Potential for cumulative impact and displacement of sensitive bird species from east Irish coastline

We have serious concerns about the cumulative effects of the ABWP2 with the other two offshore wind farms proposed off Dublin and Wicklow counties, Codling Wind Park (An Bord Pleanála Case OA29N.320768) and Dublin Array Offshore Wind Farm (An Bord Pleanála Case OA06D.321992). These proposed windfarms lie in a row from Dún Laoghaire to Gorey (Figure 2 below). As such, they have the potential to create a barrier for birds either migrating through or breeding within the Irish Sea to a large swath of the east Irish coastline and both the existing and candidate SPAs. This includes movements between two of the three marine SPAs in Ireland, the Northwest Irish Sea cSPA [8] to the north and Seas off Wexford cSPA [9] to the south, as well as movements to breeding colonies like Wicklow Head SPA [7], the Murrough SPA [10], Dalkey Islands SPA [11], and South Dublin Bay and River Tolka Estuary SPA [12].

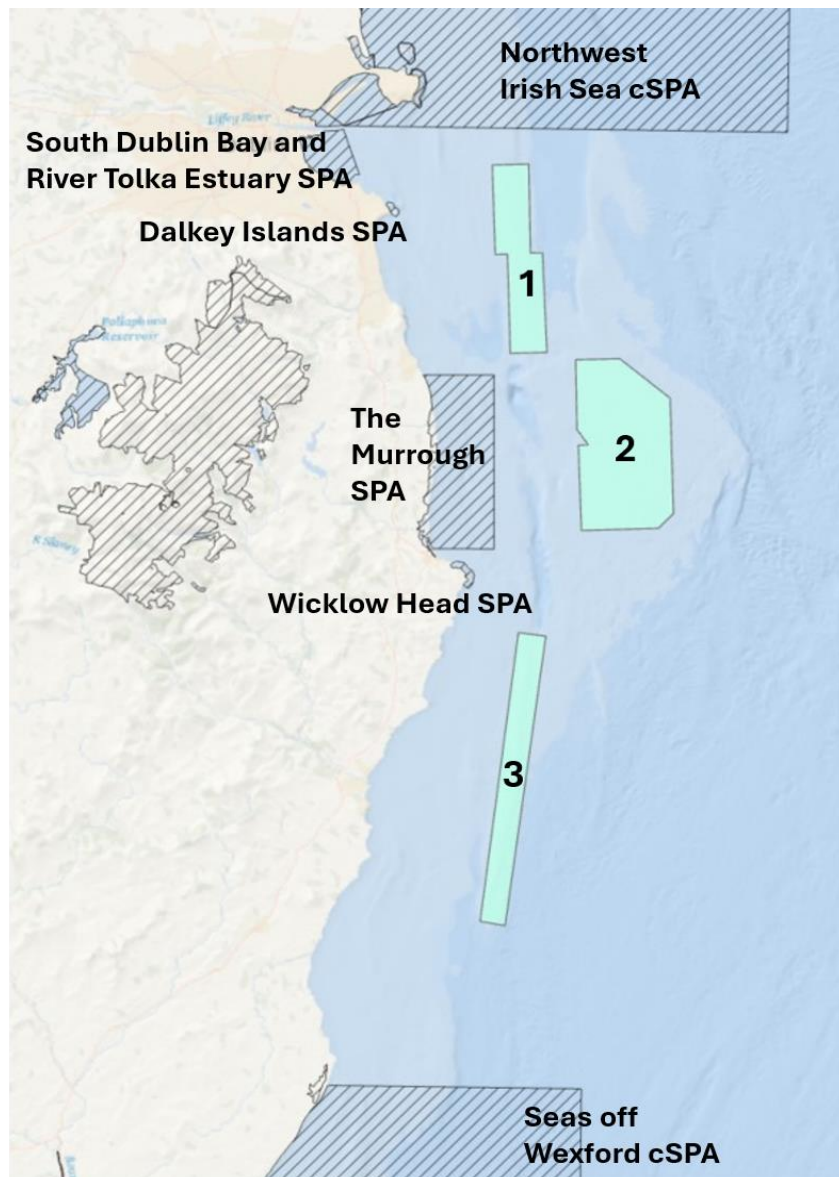


Figure 2: Map of the locations of the three proposed offshore wind farms (light green polygons) showing the stretch of coastline they will inhabit within the Irish Sea, with nearby SPAs (lined polygons). From top to bottom, the wind farms are Dublin Array Offshore Wind Farm (1), Codling Wind Park (2), and ABWP2 (3).

Within the Further Information Requested, ACP requested that ABWP2 ‘*revise the Cumulative Effects Assessment (CEA) to ensure impacts are presented and assessed against the breeding and non-breeding season populations separately*’ and that an assessment of ‘*cumulative impacts to migratory bird populations*’ is completed. In answer to this Further Information Requested, ABWP2 states in *Chapter 12: Offshore Ornithology* that ‘*the Proposed Development is not considered to present a barrier to movement, either alone or cumulatively with the other Phase 1 projects...*’; however, we do not agree with this assertion. With the three Phase I

windfarms within such a small section of the Irish Sea, the combined associated displacement from the south Dublin and Wicklow coastline could lead to the abandonment of breeding colonies and sites along this coastline or decrease in their reproductive output through forcing birds to fly further to forage [13,14]. It could also seriously impact and displace both wintering birds from an important wintering site within the Irish Sea and passage or migratory birds moving through the Irish Sea.

The marine space inshore and surrounding these Phase I windfarms, including ABWP2, is highly utilised and important for wintering seabirds. This is mentioned by ACP within the Further Information Requested, where they state that '*survey results have demonstrated that the Arklow Bank is of high ornithological conservation value for a range of seabirds, including during the non-breeding (migration and overwintering)*' and Figure 12.1.3 from *Volume III, Appendix 12.1: Offshore Ornithology Technical Report - Overview (Revised March 2026)* also shows high use of the ABWP2 array area by seabirds throughout the year, including during winter, particularly by auks. ObSERVE II results analysed by BirdWatch Ireland also showed that the area within and directly inshore from ABWP2 and the other two Phase I projects planned for the east Irish coastline is within the top 1% use areas of the entire Irish Exclusive Economic Zone (EEZ) for all breeding seabird species in winter, particularly auk species (Figure 3) [15,16].

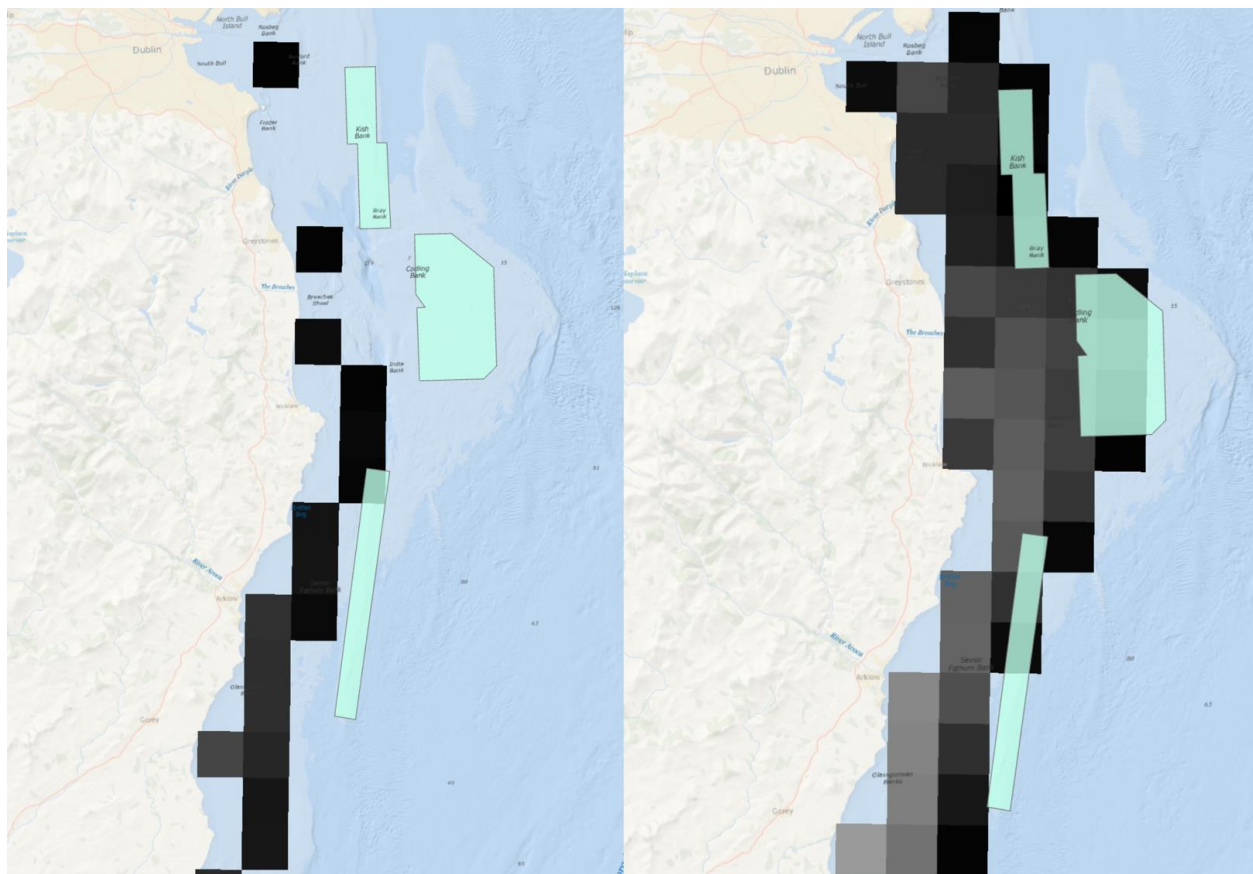


Figure 3: Map of the three Phase I projects (light green polygons) and a section of the national top 1% of areas (black and white raster layer going from black to white as highest to lowest use within the top 1% use threshold) used in winter for all seabirds (left panel) and for just auk species (right panel) from ObSERVE II survey data.

Auks are known to have high sensitivity to displacement impacts from offshore windfarms [17,18]; preliminary sensitivity indexing of birds within Irish waters by BirdWatch Ireland and BirdLife International as part of an ongoing avian offshore wind sensitivity mapping project (*in prep.*) also indicates this. Given this high sensitivity to displacement from offshore windfarms, there is evidence that ABWP2 and the two other Phase I projects could result in the removal of this critical habitat from use by auks and other seabirds through cumulative displacement. This should be thoroughly investigated before decisions are made on these offshore wind developments.

Additionally, in our original submission to the ABWP2 planning application to ACP, we stated that *‘Wicklow Head is also well known amongst ornithologists as a seabird ‘bottleneck’ during late summer and autumn migration window’* [19] due to *‘... certain conditions (northeast, east or southeast winds), [where] seabirds are pushed close to land and funneled round the headland, which is also very close to the north end of the Arklow Bank’*. Given that migratory and passage birds may be funneled into ABWP2 and the other two Phase I projects along the east Irish coastline, or closer than they would otherwise like to be, it is of extreme importance that a cumulative impact assessment to migratory bird populations is done as requested by ACP. We do not agree with the assertion of ABWP2 that barrier effects do not need to be considered in cumulative assessment, nor that *‘potential impacts for migration movements’* should be scoped out of cumulative assessments. We believe that there could be impacts from ABWP2 *‘combine(d) with other projects to produce a cumulative barrier effect during the breeding or nonbreeding seasons’*. Given the high displacement sensitivities of critical birds that use this part of the Irish coast and the unique conditions for migratory birds in this area that make the marine environment around ABWP2 and the other two Phase I projects nearby a *‘bottleneck’* for birds, we do not agree with the assertion that there will not be barrier impacts cumulatively across the Phase I projects and urge ACP to require further impact assessments and research on cumulative impacts of displacement/barrier effects to seabirds before consents are given.

3. Issues with the updated Kittiwake collision estimates

While we appreciate the work on Kittiwake currently ongoing and supported by ABWP2, we believe that the updated Kittiwake collision risk estimates were inaccurately assessed and should be re-evaluated accordingly. For the Further Information assessment, ABWP2 revised their Kittiwake collision risk estimates with site specific flight heights they collected by boat from September 2025 and January 2026. Within the species-specific seasonal definitions used by ABWP2 (as stated in Table 12.8 of *Chapter 12: Offshore Ornithology*), only the autumn

migration period is fully contained within this survey window, though spring migration does have a single month within the survey window (January). As Kittiwakes have differing ecological requirements and foraging strategies during the summer and winter periods [20], we believe that the site-specific flight height data should only be used for the season it was collected in and the overall Kittiwake collision risks should be re-evaluated accordingly. We would advocate for the use of Option 1's site specific estimates during the appropriate period(s) and Option 2's literature supported estimates for the periods when surveys were not undertaken (Table 2).

Table 2: Comparison of collision impact estimates from ABWP2's *Chapter 12: Offshore Ornithology* report, along with our opinions on the most appropriate option to use for each season and the updated estimates from this opinion

Season	Option 1 - site specific (# of individuals)	Option 2- literature supported (# of individuals)	Most appropriate option to use	Precautionary estimates of Kittiwake collisions (# of individuals)*
<i>Breeding Season</i>	5	22.6	Option 2	22.6
<i>Autumn migration</i>	7.8	35.0	Option 1	7.8
<i>Spring migration</i>	17.5	78.5	Option 2*	78.5
<i>All seasons</i>	30.3	136.0		108.9

* *Spring migration does have a single month (January) within the survey window but is not used in this estimation. Using Option 1 for Spring migration would change the all seasons Kittiwake collision estimate to 47.9 individuals.*

This approach that utilises both the site-specific information when applicable, and the literature supported information when it is not, is the most precautionary estimate of potential collision risk and mortality from ABWP2 and should be carried forward into future assessments. This precautionary collision risk estimate of 108.9 individuals is the most appropriate and precautionary estimate; however, even if Option 1 is used for spring migration due to the one month being within the survey window, the new estimate for collision mortality of Kittiwakes would still increase from the estimate reported by ABWP2 to 47.9 individuals. While neither of these alternative methods increase the mortality rate to more than 1% (0.099 and 0.043%

increases respectively), we believe these are more accurate assessments of the potential Kittiwake collision mortality of ABWP2 and should be used in both individual and cumulative assessments of collision mortality.

4. Mitigation and post-construction monitoring

We would also like to take this opportunity to comment on potential mitigation measures and post-construction requirements that we believe should be implemented to ensure that, should ABWP2 receive planning permission, the real impacts of the development on birds can be minimised and documented, with any issues that may arise being addressed as soon as possible. We acknowledge that in Table 12.75 within *Chapter 12: Offshore Ornithology*, ABWP2 states commitment to monitoring '*for a period of five years post-construction*' on disturbance and displacement and participating in the East Coast Monitoring Group on collision risk impacts collectively across the Phase I projects. Additionally, ACP requested that '*any potential specific mitigation measures to minimise the effects of the project on birds ... should also be included and addressed in the application documentation*', but no mitigation measures are proposed in ABWP2's documentation. We believe that there should be mitigation measures and post-construction requirements that are explicitly required by any planning permissions or consents given to the project.

4.1- Radar and continuation of monitoring throughout ABWP2 lifespan

Information on both foraging and migration patterns of key seabird species along the Wicklow Coast and the Irish Sea should be collected both before, during, and after construction of ABWP2 and the other Phase I projects. This specific use information on the behaviour of different seabirds that utilise the ABWP2 marine footprint and the Wicklow Coast is key as background information about the bird use of the local marine environment and will aid in assessing the future impacts of the ABWP2 development, determining if new or continued mitigation is necessary, and/or addressing whether compensation is needed and what compensation would be applicable to address impacts. Continued pre- and post-construction monitoring is key to this and continuing to participate in this type of monitoring, particularly of nearby colonies like Wicklow Head SPA that are likely to be impacted, should be a requirement of consent.

We believe that radar or camera should be placed on the turbines of ABWP2 to both monitor bird use of the array area and potentially used in curtailment/shutdowns during high bird use periods, but also to collect data on the frequency and species use of the ABWP2 marine footprint as part of a robust post-construction monitoring scheme. Radar or camera assisted shutdowns have been used in other windfarms as an adaptive management strategy to reduce impacts on birds [21] and the technology to monitor the array area is widely available to developers. Additionally, this technology has also proven effective at identifying and curtailing

bat collisions as well [22] and could be particularly useful in terms of our concerns regarding passage or migrating birds, as radar could be used to recognise when pulses of migrants are moving through the ABWP2 marine space as both a part of post-construction monitoring and to allow for appropriate curtailment of the windfarm.

Currently there is no legal requirement that ABWP2 use any of this technology to monitor and mitigate their impacts to birds during operation. We believe that the use of appropriate on-turbine detection systems should be a legal requirement of any consents given, and would request that ABWP2 be required to continue in long-term monitoring of locally nesting seabirds at Wicklow Head SPA throughout construction and the operational lifespan of the project to both ensure that impacts from the offshore windfarm do not exceed expected/predicted impacts by the EIAR and to help inform any additional mitigation and/or compensation measures that may be required if impacts do exceed predictions.

4.2- Continued support for blade-painting trials in Irish waters on Phase I projects

While we acknowledge that blade painting is a relatively new and untested measure, particularly offshore, and that studies have shown different levels of effectiveness, we still think there is merit in trialing this potential mitigation strategy on the Phase I projects, including ABWP2. Staff from BirdWatch attended a panel at the 2025 Conference on Wind energy and Wildlife Impacts entitled '*Exploring blade patterning as a mitigation strategy- Results from studies across the globe, lessons learned, and the way forward*'. Experts, including authors involved in studies in Belgium, Norway, and South Africa, expressed the opinion that blade painting is worth trialing at offshore developments. Since most of these studies were Before-After Control studies, which required the construction and running of the turbines for a certain period of time without painted blades before then turning off the turbines and painting blades while the turbines are in-place and constructed, the panelists lamented that cost reduced their ability to blade-paint at scale; there is much scope for future study in this area. Painting blades ahead of construction in order to reduce costs and allow for more research into their effectiveness in different environments and setups was recommended. Given the nascency of Ireland's offshore wind environment, trialing blade painting is a relatively cheap mitigation option that could be a chance for Ireland to be a pioneer if blade painting proves a successful mitigation strategy; however, even if studies show that blade painting is not effective as a mitigation measure, any Irish studies would still add to the scientific community's understanding of offshore wind mitigation and put Ireland at the forefront of trialing measures to reduce biodiversity impacts of offshore wind. We believe that blade painting is a low-cost win-win situation for future offshore wind projects within Ireland and would still advocate for this as a potential mitigation strategy worthy of testing within our waters.

It is important to note that there is no one-size-fits-all approach to mitigation measures to reduce bird impacts of windfarms and '*the best mitigation option may involve a combination of*

more than one measure, adapted to the specificities of each site, wind farm, and target species [23]. Also, these potential measures do not address displacement impacts to birds, something we are still very concerned with in regard to ABWP2, and they may also not work for all species that can be impacted. Improper placement of offshore windfarms in sensitive areas where impacts to birds are high cannot be addressed solely by mitigation measures, which is why proper marine spatial planning that avoids these environmentally sensitive areas is key. Since the Phase I offshore windfarms did not undergo any environmental constraints mapping ahead of site selection, like the areas being identified under the Designated Marine Area Plans (DMAPs), and as we are still undergoing an offshore wind sensitivity mapping project with BirdLife International to identify areas of low, medium and high risk to birds from offshore wind, we are not at this stage unable to state with certainty how impactful ABWP2's offshore windfarm placement may be to birds. Providing the additional information we have set out in this document will assist with better understanding of the potential impacts and possible future appropriate mitigation.

Conclusion

While we appreciate the ongoing support of research on relevant local seabirds and acknowledge the amount of effort undertaken after the ACP Further Information Requests, we still believe that there are a few areas where additional knowledge is needed to make the best-informed decisions before a consenting decision can be finalised for ABWP2. As mentioned by ACP within the Further Information Requested, the location for ABWP2 has been shown to be *'... of high ornithological conservation value for a range of seabirds, including during the non-breeding (migration and overwintering)'* and for this reason, proper consideration and caution is needed throughout the planning process, consenting decisions, and operational plans.

As mentioned above, because mitigation possibilities are limited for birds, proper siting of offshore windfarms is critical to ensure limited impacts on birds from offshore wind development [24,25]. We are particularly concerned that more information is needed on the displacement and barrier effects of ABWP2, both alone and cumulatively with the other Phase I projects, and on the ability of the Arklow Bank to continue to provide necessary prey fish species for wintering and breeding seabirds is needed before consents are given. Without more information, these knowledge gaps leave crucial unknown consequences that could have serious implications for local Irish seabirds. Additionally, as work on our offshore wind sensitivity mapping project with BirdLife International is ongoing, it is also unknown if ABWP2 is located within a particularly sensitive area for birds of the Irish marine environment. For this reason, a precautionary approach is crucial during planning and consenting to ensure that birds are not adversely affected by offshore wind developments.

We also believe that any consents given to the project should include a proper mitigation plan and concrete requirements for post-construction monitoring to understand and address any

impacts the project may have to birds appropriately and quickly. Additionally, if consents are given, we would request that post-construction monitoring reports be made publicly available according to a pre-determined schedule to inform stakeholders and provide transparency. BirdWatch Ireland is fully supportive of the development of offshore wind, but we rue the lack of preparedness of government to fund the necessary studies on prey species and to understand species interactions in the marine environment ahead of these large offshore developments. It is undermining the urgent need to roll out offshore wind to tackle climate breakdown which is also affecting wild birds.

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