

Aughinish Biodiversity

Seán Dundon¹, Stephan Beaulieu²

1. Environmental and Ecological Technologist

2. Process and Efficiencies Coordinator

RUSAL Aughinish, Askeaton, County Limerick, Ireland

Corresponding author: sean.dundon@augh.com

Abstract

DOWNLOAD
FULL PAPER



The Aughinish Alumina (AAL) refinery is located on Aughinish Island on the shore of the Shannon Estuary 33 kilometres west of Limerick city in the South West of Ireland. The plant, commenced operation in 1983 and has a current production capability of 1.99 million tons per annum. Aughinish is located alongside Special Areas of Conservation (SACs) and Special Protection Areas for Birds (SPAs). Both SACs and SPAs are designations from the 1992 EU Habitats directive and the 2009 EU birds' directive respectively. The company is responsible for the protection of these habitats within the Aughinish ecosystem. The ecosystem around the refinery is made up of numerous habitat types from woodland, intertidal flats, grasslands to lagoons. This diversity of habitats has led to a very complex ecosystem establishing. The ecosystem at Aughinish is made up of a wide range of species from orchids, otters, peregrine falcons to lizards. All of this biodiversity is recognized by the company and embedded in the Aughinish Alumina Biodiversity Management Plan (BMP). The BMP sets out time bound objectives over a five-year period to enhance the overall biodiversity of the ecosystem. The commitment of Aughinish to community and biodiversity includes development of nature trails through the Aughinish ecosystem so that it is a wildlife haven and a place of education for future generations. This paper outlines biodiversity management so far and into the future.

Keywords: Ecosystem, Protected sites, Habitat, Species.

1. Introduction

AAL operates a long-established alumina refinery, located at Aughinish on the southern side of the Shannon Estuary near the village of Foynes, County Limerick. The refining process removes the alumina from bauxite. The bauxite, which is transported by ship from West Africa and South America, is unloaded at a dedicated Marine Terminal located in the Shannon Estuary and transferred by enclosed conveyor to the plant. It is refined using the Bayer process which results in the production of alumina and a bauxite residue, which is deposited in the Bauxite Residue Disposal Area (BRDA). Alumina is exported to smelters in other European countries, where it is used to produce aluminium.

The alumina refinery commenced operation in 1983, and has been the subject of considerable expansion and investment. The plant is now one of the most energy efficient facilities, with one of the lowest carbon footprints of any alumina refinery in the world, and the state-of-the-art facilities provide considerable employment in this region.

The Shannon Estuary is the most important geographical feature for biodiversity in Aughinish. The estuary is home to bottlenose dolphins (*Tursiops truncatus*), Eurasian otters (*Lutra lutra*), numerous species of birds, fish and bivalves. The estuary creates many habitats for flora and fauna to thrive including intertidal flats, calcareous rock slopes, siliceous rock slopes, salt marsh and the estuary itself. These habitats provide vital food sources for mammals, birds and invertebrates. The estuary allows rivers like the Robertstown River to flow into it, thus allowing adult salmon

to swim from salt water to fresh water to spawn. The main terrestrial habitats are agricultural grassland, semi natural grassland, hedgerows, scrubland and semi natural woodland.



Figure 1. Photo of Shannon Estuary and Aughinish.

The bird sanctuary located on the North West side of the island is a key habitat for numerous bird and mammal species. Large flocks of migratory winter waders descend upon the bird sanctuary for food and shelter. All variety of waders are present in the bird sanctuary in the winter months from Wigeon (*Anas Penelope*) to Shoveler (*Anas clypeata*) to Mute Swans (*Cygnus olor*). The tall reeds are used as ideal protection from large predators like buzzards (*Buteo buteo*). Another key habitat located on Aughinish is Hunt's Dragonfly Lough located along the east side of Aughinish. This lough is rich in species of dragonflies and damselflies. Common Darter (*Sympetrum striolatum*) to four spotted Chaser (*Libellula quadrimaculata*) to the Irish damselfly (*Coenagrion lunulatum*) have all been recorded in Hunt's Dragonfly lough. The lough is also used by numerous species such as mallards (*Anas platyrhynchos*), smooth newts (*Lissotriton vulgaris*) and grey herons (*Ardea cinerea*).

Aughinish Alumina has been vital in the preservation and ongoing maintenance of the lowland hay meadow on Aughinish. The installation of otter holts around Aughinish has helped to expand the population of the Eurasian Otter (*Lutra lutra*) across Aughinish. The active management from Aughinish of American mink populations has led to stable and expanding native wildfowl populations.

Protecting the habitats and species on Aughinish is only part of what Aughinish (AAL) is going to achieve as part of the AALBMP. Education of its workforce and the wider community to understand the biodiversity of Aughinish and why it is so important is a vital part of the AALBMP.

Aughinish Island under the stewardship of Aughinish (AAL) has seen its habitats trend in a positive direction. The monitoring of these habitats has been vital for Aughinish Alumina to understand and address the needs of individual habitats and species. The AALBMP is leading Aughinish Alumina forward to not only protect the habitats and species but also improve and expand the biodiversity that forms the Aughinish ecosystem.

7. References

Specific data sources reviewed, which are the most recently published, include:

1. National Biodiversity Action Plan 2017-2021, <https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf>. (accessed 01 October 2021)
2. Environmental Impact Statement (EIS) Aughinish Alumina for the BRDA extension June 2005.
3. NPWS the monitoring and assessment of three EU Habitats Directive Annex I grassland habitats, <https://www.npws.ie/sites/default/files/publications/pdf/IWM%20102%20Annex%201%20Grasslands.pdf> (accessed 01 October 2021)
4. The Irish semi-natural grasslands survey 2007-2012, <https://www.npws.ie/sites/default/files/publications/pdf/IWM-78-Irish-semi-natural-grassland-survey.pdf> (accessed 01 October 2021)
5. Management Plan for the rare plant receptor areas Aughinish Alumina, County Limerick.
6. Birds of Conservation Concern in Ireland, <https://birdwatchireland.ie/app/uploads/2019/09/BOCCI.pdf>. (accessed 01 October 2021)
7. All-Ireland Pollinator Plan 2021-2025, <https://pollinators.ie/aipp-2021-2025/>. (accessed 01 October 2021)
8. Dragonfly dash 2019- 2024, <https://www.biodiversityireland.ie/projects/monitoring-scheme-initiatives/dragonfly-ireland-2019-2024/dragonfly-dash-may-2020/>. (accessed 01 October 2021)
9. A manifesto for Nature (Proposals to address the Biodiversity and climate emergency in Ireland), <https://birdwatchireland.ie/app/uploads/2020/01/BirdWatch-Ireland-Manifesto-for-Nature-GE2020.pdf>, (accessed 01 October 2021)
10. Guidance to manage the risk to marine mammals from manmade sound sources in Irish waters (NPWS, 2014), https://www.npws.ie/sites/default/files/general/Underwater%20sound%20guidance_Jan%202014.pdf, (accessed 01 October 2021)
11. The status of EU Protected Habitats and Species in Ireland 2019, https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol1_Summary_Article17.pdf, (accessed 01 October 2021)
12. Aughinish Alumina Ltd. Biodiversity Management Plan 2021-2026