



BirdLife Malta Comments and Recommendations on the Coordinated Assessment for the Proposed Marsalforn Coastal Defence system

6th December 2024

In response to the public consultation of the Environmental Impact Assessment (EIA), on the Coordinated Assessment for the Proposed Marsalforn Coastal Defence system, BirdLife Malta (BLM) would like to provide further comments and recommendations. This project provides an excellent opportunity to incorporate ecological considerations, to protect nearby coastal ecosystems and, in turn, the ecosystem services relied upon by residents, fishermen, boat owners, tourists, and the diving community along this stretch of coastline.

Land and sea use improvements for fishermen

As part of operational land and sea use improvements, BLM recommends further consultations with local fishermen and identify any other compensatory measures that can be provided such as providing additional storage rooms and provision of waste receptacles for oil and nets alongside the newly constructed breakwaters. Any berths on the sheltered side of the breakwaters should be reserved for fishermen, supporting their activities in the area.

Ecologically sensitive lighting scheme

The navigational lighting at the tips of both the Santa Marja and Menqa breakwaters should incorporate motion sensors to activate only when vessels approach, similar to a system already in use at Xlendi Bay. For path illumination along the breakwater, we suggest avoiding white LEDs and use downlighters with full cut off and with CCT $\leq 3000\text{K}$ ¹. We also suggest red lighting for the indicative general lighting, which is gentler on marine fauna than white LEDs. Lighting should be focused only on essential areas, minimising spillover into ecologically sensitive areas. These measures are critical to mitigating the effects of Artificial Light at Night (ALAN), which disrupts nocturnal behaviours and can lead to the loss of light-sensitive species in areas with persistent illumination. A recent

¹ Crymble, J. (2020). Guidelines for ecologically responsible lighting. BirdLife Malta. <https://birdlifemalta.org/wp-content/uploads/2020/07/Guidelines-for-Ecologically-Responsible-Lighting.pdf>.

study showed that ALAN in Ċirkewwa Harbour disrupted marine biodiversity, altering species behaviours and predator-prey dynamics².

Further assessments of increased turbidity and reduced circulation impacts on *Posidonia oceanica*

The Marsalforn defence system will involve groynes to regulate sediment flow from Marsalforn valley, preventing build-up at the mouth of the discharge channel and allowing unobstructed water release into the bay. However, redirecting sediment may affect *Posidonia oceanica* and benthic organisms, a consideration that requires further examination in the residual impacts of the EIA. Not to mention the reduced circulation within the bay which means that any suspended sediment following heavy rainfall will persist in the bay for days. In addition, as pointed out in the EIA, given that Marsalforn Bay is also a tourist destination, any contamination from leaking sewage or runoff could persist for days, risking economic harm but also potential impacts on *Posidonia* meadows and benthic communities, a factor that is currently underrepresented in residual impacts section of the EIA.

To mitigate sediment suspension during construction, the installation of silt curtains should not be viewed as an absolute solution. Under certain conditions, such as strong northeastern or northwestern currents, the silt curtains may be ineffective. Sediment suspension increases turbidity, a significant threat to the health of *P. oceanica*. Continuous monitoring of turbidity levels should occur throughout construction, with work suspended during unfavorable conditions that could cause sediment dispersion. It is essential to establish a turbidity limit and enforce regular environmental monitoring by local experts to safeguard marine health.

Further compensatory measures: Restoration, ecological mooring and bay clean-up

We strongly recommend undertaking restoration efforts for *P. oceanica* in Marsalforn Bay, given its high protection status and in line with the newly enacted Nature Restoration Law. Additionally, winter banquette formation of *Posidonia* on beaches offers natural coastal protection against erosion, potentially reducing sand loss from the nourished beach in Marsalforn³. The EIA identifies areas dominated by dead mattes of *P. oceanica*, marking the former presence of healthy meadows. We suggest these areas to be further

² Grillo, F., Marrone, A., Gauci, A., & Deidun, A. (2024). Maltese Coastline Never Sleeps: The Effects of Artificial Light at Night (ALAN) on the Local Infralittoral Assemblages—A Case Study. *Journal of Marine Science and Engineering*, 12(9), 1602.

³ Rotini, A., Chiesa, S., Manfra, L., Borrello, P., Piermarini, R., Silvestri, C., ... & Migliore, L. (2020). Effectiveness of the “ecological beach” model: Beneficial management of *posidonia* beach casts and banquette. *Water*, 12(11), 3238.

protected and prioritised for restoration, as studies indicate good survival rates for *P. oceanica* seedlings on dead mattes⁴.

During land reclamation and beach replenishment, uncontrolled anchoring by work vessels could harm the marine ecology in the area through physical damage to *Posidonia* meadows. While this impact is currently rated as minor, BLM believes it should be given moderate significance. We recommend that compensation for the loss of *P. oceanica* should include establishment of ecological mooring for public use across all the bay to prevent further meadow damage, especially as vessel traffic is expected to increase post-construction. The projected loss of 10,300 square meters of *P. oceanica* underscores the need for dedicated ecological mooring within the bay to protect the remaining meadows, as anchoring is a primary threat to seagrass ecosystems. As an additional compensatory measure for the project, the bay should also be cleaned of the discarded construction debris identified in the EIA (in Transect 3) and any other waste which pollutes the bay.

While the constructed groynes are expected to improve sediment flow from the Marsalforn valley and reduce local flooding, such efforts could also be extended further upstream of the Marsalforn valley. This could include regular upkeep of the valley bed, removal of waste and invasive species, and improved drainage management of the valley.

Final Comments

In conclusion, BLM recognises the Marsalforn Coastal Defence System project as a valuable opportunity to integrate environmental considerations that benefit both local communities and the coastal ecosystem. By prioritising the needs of local fishermen, implementing ecologically sensitive lighting, and ensuring ongoing management of sediment impacts on critical habitats like *P. oceanica*, this project can serve as a model for environmentally responsible coastal defence. Additionally, further compensatory actions, such as *Posidonia* restoration, ecological mooring, and bay clean-up, are essential to mitigating the project's ecological footprint while enhancing marine biodiversity.

⁴ Escandell-Westcott, A., Riera, R., & Hernández-Muñoz, N. (2023). *Posidonia oceanica* restoration review: Factors affecting seedlings. *Journal of Sea Research*, 191, 102337.