



Biodiversity Action Plan for EGA's UAE Operations

Summary Report

March 2025



This document has been collated by Nautica Environmental Associates LLC for Emirates Global Aluminium.

©2025 Nautica Environmental Associates LLC (NEA).

This document has been prepared for the above titled project and should not be relied upon or used for any other project without first obtaining the written consent of EGA.

NEA will accept no responsibility or liability for this document to any party other than the client for whom it was commissioned.

1.0 Introduction

There is global recognition that biodiversity is not only essential for sustaining human society by providing critical ecosystem services such as food, clean water, climate regulation, and natural resources, but it also underpins economic resilience, public health, and social well-being. Consequently, mechanisms such as the United Nations' Sustainable Development Goals (SDGs) and the Convention on Biological Diversity (CBD) and its recent Global Biodiversity Framework (GBF) are developing targeted funding methods to restore ecosystems, protect habitats and species, and ensure natural systems continue to thrive for future generations. Crucially, the CBD was the original impetus behind the development of the Biodiversity Action Plan (BAP), an internationally recognised tool which addresses threatened habitats and species and is designed to protect and restore biological systems.

A BAP has been compiled for Emirates Global Aluminium (EGA) with the specific overall aim of developing a suite of targeted actions to mitigate EGA's potential negative effects on the biodiversity at the company's two sites in the UAE. Ultimately, these actions would position the company as a net positive contributor to biodiversity in the UAE. Moreover, the BAP's structure has drawn from and aligns with the International Finance Corporation (IFC) and the Aluminium Stewardship Initiative (ASI) Performance Standard Version 3, two instruments which EGA aligns with (IFC) or is formally a member of (ASI).

The EGA BAP has briefly introduced EGA's operations in the UAE, highlighted the legal regulatory framework in the UAE, provided an up-to-date biodiversity baseline for both sites where the company operates (Al Taweelah and Jebel Ali), undertaken a critical habitat assessment (CHA) at both locations, and identified potential biodiversity impacts associated with EGA's activities. Consequently, the BAP has developed specific biodiversity actions for biodiversity enhancements for consideration by EGA and which are detailed below.

Briefly, at Al Taweelah, the biodiversity baseline has identified critical habitats in the immediate vicinity of the main EGA facility including coral reefs, mangroves and seagrass beds. Importantly, the Khalifa Economic Zones Abu Dhabi (KEZAD), where EGA and other industrial facilities are located, is a few kilometres from the Al Ghanadah Basin, the location of the Ras Ghanadah MPA (Marine Protected Area), an internationally recognised IUCN (International Union for Conservation of Nature) Management Category IV protected site established in 2017. In addition to biodiverse habitats, Al Taweelah hosts vulnerable species such as Dugongs (IUCN - VU), spotted with calves during recent surveys ~3km north of the EGA wharf, endangered Green Turtles (IUCN – EN) and critically endangered (IUCN – CR) Hawksbill Turtles. The critical habitat assessment has confirmed Al Taweelah not only hosts critical habitats and vulnerable, endangered and critically endangered species but, crucially, the CHA has highlighted the importance of connectivity amongst marine habitats whereby a range of cross-ecosystem interactions ensures one ecosystem creates favourable conditions for the maintenance of its neighbouring ecosystems. Coral reefs, for instance, by dissipating wave and current energy, provide calm environments for seagrass and mangroves to develop, which in return stabilize the very environment required by coral reefs to thrive.

Potential impacts to biodiversity features associated with EGA facilities at Taweelah include:

- Bioaccumulation of pollutants, e.g., aluminium, in the marine environment affecting critical habitats/species.
- Wind-blown bauxite emissions from offloading activities impacting coral reefs, seagrass beds and Hawksbill turtle nesting beach.

- Fluoride emissions impacting nearby mangroves (potentially impacting more extensive mangrove habitats north-east of the facility).
- Noise and light pollution affecting Hawksbill turtle nesting beach.
- Wind-blown emissions at the Bauxite Residue Storage Area (BRSA) affecting terrestrial fauna (BRSA is located ~30km east of the KEZAD).

Lastly, the KEZAD water intake channel at Taweelah has the potential for both adverse effects (entrapment) and positive impacts (development of biodiverse environment via the entry of juvenile marine organisms).

At Jebel Ali, marine habitats are of limited ecological interest and do not support any substantial abundance or diversity of species with nearshore areas largely composed of unconsolidated bottom habitat, dominated by algae with no corals or seagrass beds. However, Green Turtles (IUCN - EN), likely experiencing stress and disorientation due to the high shipping activity in Jebel Ali, have been found trapped at EGA's water intake facility. To support their welfare, EGA collaborates closely with the Dubai Turtle Rehabilitation Project to ensure that turtles in need receive medical care at their turtle rehabilitation facilities. Areas of biodiversity interest have been observed at the EGA's golf course with high diversity of terrestrial species including several migratory bird species, abundant pollinating invertebrates and the presence of a roosting bat colony.

Recognising the potential for EGA activities to impact biodiversity, the BAP proposes a series of targeted actions, detailed below, to mitigate potential negative effects and position EGA as a net positive contributor to biodiversity in the UAE.

The BAP has also identified potential opportunities including alignment and/or collaboration with existing and/or planned initiatives addressing major challenges such as the effects of climate change on coral reefs across the UAE and exploiting the carbon storage capacity of seagrass beds and mangroves. These prospects are detailed in the BAP report.

The actions and opportunities identified and described in the EGA BAP, although developed as part of EGA's activities in the UAE, reflect the global urgency required to halt the decline of biodiversity and restoring nature, both crucial to a sustainable and equitable future for mankind. In addition, there is widespread recognition that given biodiversity is the foundation of life on Earth, its preservation is paramount, not only for its intrinsic value, but as there is now overwhelming evidence that biodiversity helps fight climate change through carbon storage and plays a key role in mitigating the impact of natural hazards such as coastal erosion and storm surges (seagrass beds, coral reefs and mangrove forests acting as effective barriers). The EGA specific actions presented below align fully with this understanding and support the UAE National Climate Change Plan 2017-2050 and Net Zero 2050 strategic initiatives.

2.0 Action Planning

Biodiversity action planning needs to focus on species and habitats with management requirements according to the associated condition, conservation status, potential impacts, and opportunities for meaningful positive outcomes for biodiversity. Priorities for this BAP have been ascertained from baseline data, including survey results and the critical habitat assessment detailed above.

The critical habitat assessment has identified a few habitats and species for which specific actions have been developed. The individual Action Sheets detailed below include detailed measures undertaken for these features, and awareness actions, with specific, measurable targets and indicators to monitor and ensure their successful implementation.

Each Action Sheet includes the biodiversity feature or other being considered, e.g., turtles, the specific *action* being recommended for implementation, the *target* detailing the specific results of the action, the *indicator* which details the success of the action (number of healthy turtles recorded), which mitigation measure (*activity*) is being addressed (e.g. avoidance), when the action will be undertaken (*Start/End*, i.e., time of the year or duration), *frequency* of the action undertaken (e.g. monthly) and the *monitoring* and *resourcing* requirements associated with a particular action.

The Mitigation Hierarchy highlighted below is a reminder of how this tool has been implemented and referred to in each Action Sheet detailed below. Hence, for each action, reference is made to which hierarchy step has been considered.

The mitigation hierarchy is based on a series of essential, sequential, but iterative, steps taken throughout the project's life cycle, in order to limit any negative impacts on biodiversity as outlined in Figure 1 below.

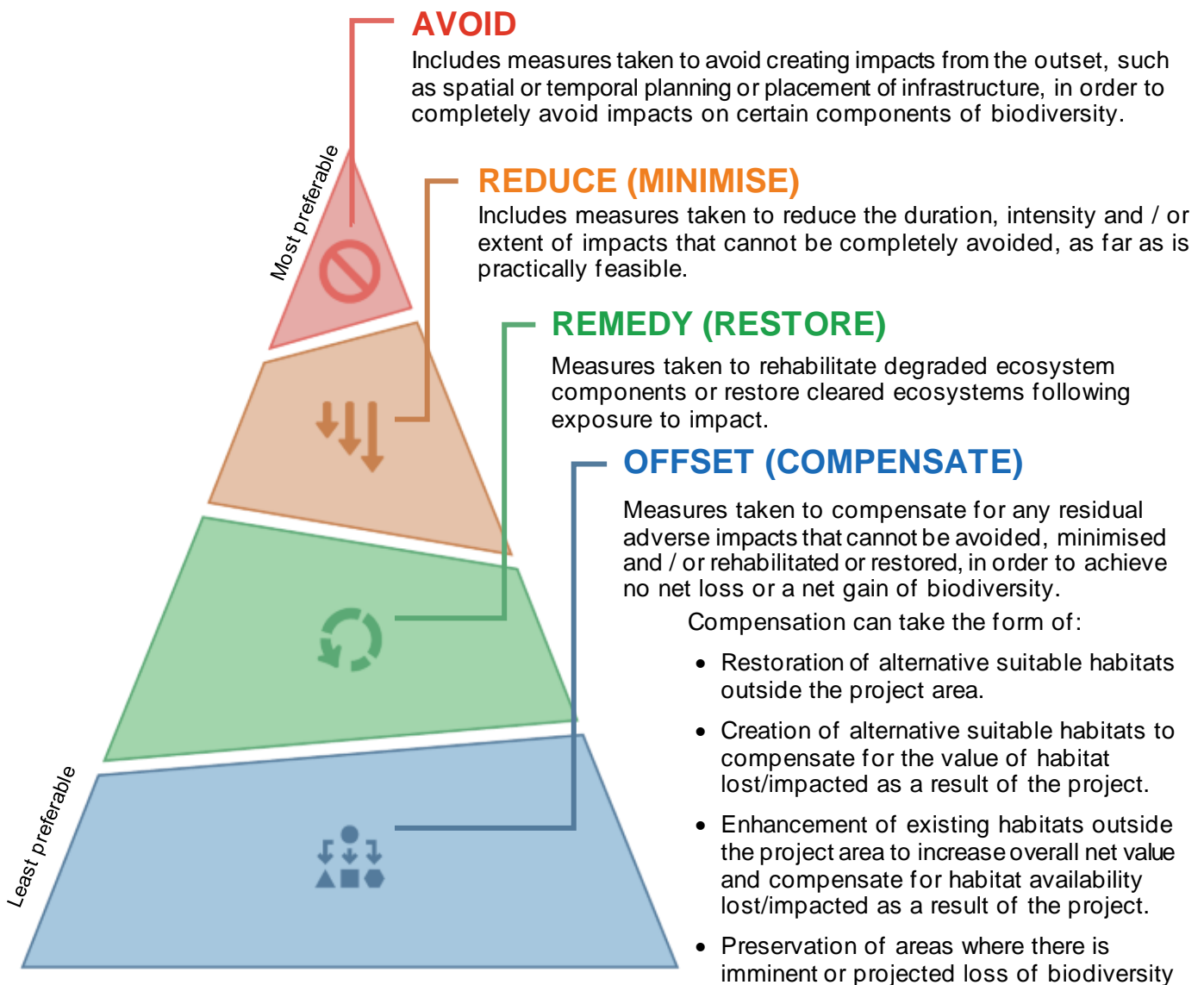


Figure 1: Levels in the Mitigation Hierarchy

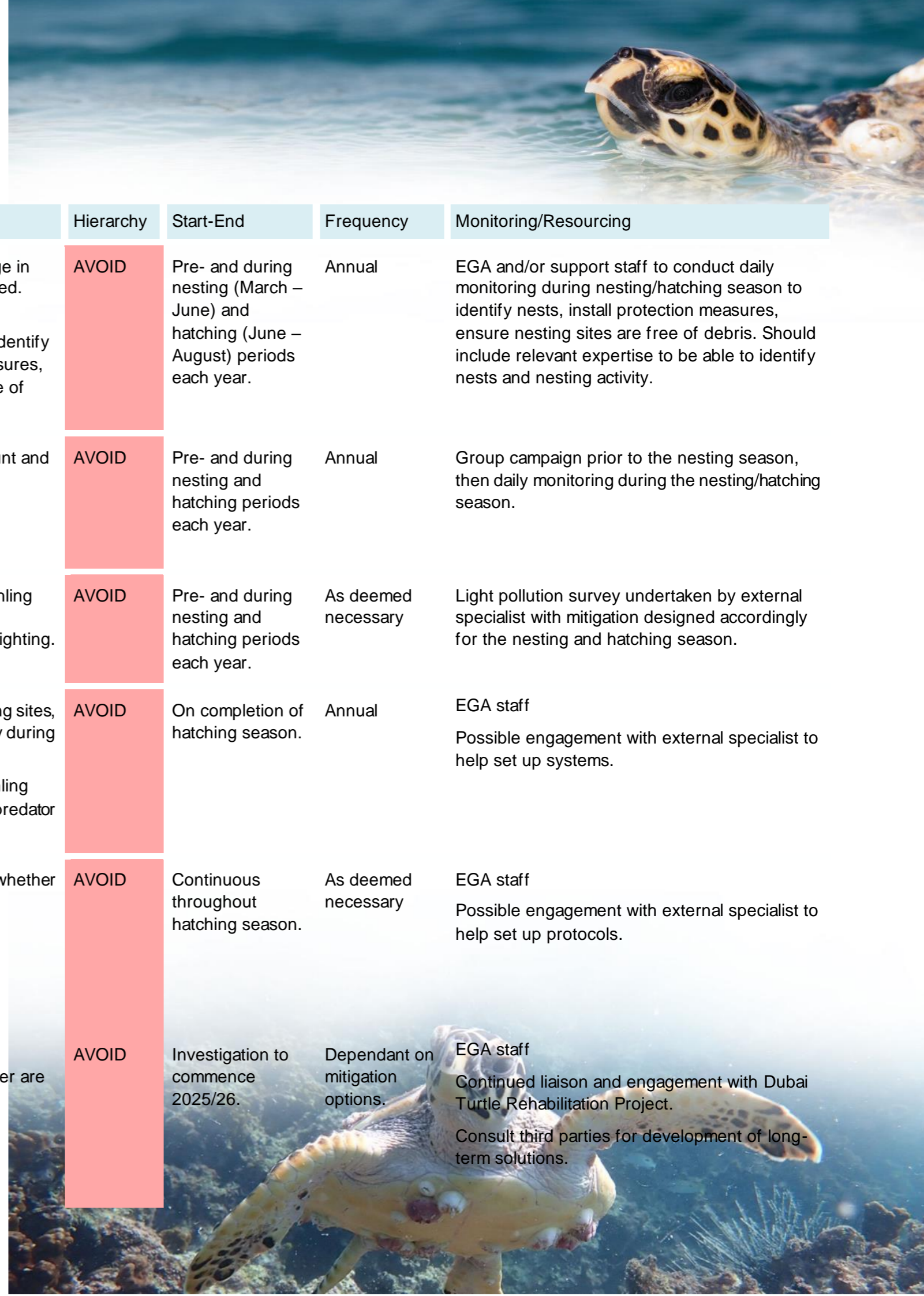
In addition to applying the mitigation hierarchy, EGA is actively identifying opportunities for biodiversity enhancements, aiming not only to avoid and minimise harm but also to contribute positively to the ecosystems the company interacts with.

Progress on the actions outlined in this BAP will be published to ensure transparency and accountability, allowing stakeholders to assess EGA’s performance in achieving the Plan’s objectives.



Turtles (ID: T = Al Taweelah / J = Jebel Ali / Tu = Turtles)

ID	Action	Target	Indicator	Hierarchy	Start-End	Frequency	Monitoring/Resourcing
T-Tu1	Protection of Hawksbill Turtle nesting beach in Al Taweelah.	<ul style="list-style-type: none"> ✓ Ensure protection measures in place during nesting/hatching season to reduce risk of predation by feral species. 	<ul style="list-style-type: none"> ✓ Appropriately worded signage in place and security staff trained. ✓ Daily monitoring during nesting/hatching season to identify nests, install protection measures, ensure nesting sites are free of debris. 	AVOID	Pre- and during nesting (March – June) and hatching (June – August) periods each year.	Annual	EGA and/or support staff to conduct daily monitoring during nesting/hatching season to identify nests, install protection measures, ensure nesting sites are free of debris. Should include relevant expertise to be able to identify nests and nesting activity.
T-Tu2	Beach clean-ups.	<ul style="list-style-type: none"> ✓ Beach cleans ups to take place to negate risk of ingestion or entanglement by adults and/or juveniles from anthropogenic and/or natural debris washed ashore. 	<ul style="list-style-type: none"> ✓ Records maintained of amount and type (Plastics, wood, etc.). 	AVOID	Pre- and during nesting and hatching periods each year.	Annual	Group campaign prior to the nesting season, then daily monitoring during the nesting/hatching season.
T-Tu3	Conduct impact assessment of light and noise pollution on the AT turtle nesting beach.	<ul style="list-style-type: none"> ✓ Minimise/negate disruption of nesting and/or hatching cycle through light pollution impacts. 	<ul style="list-style-type: none"> ✓ Records maintained of hatchling mortality associated with disorientation from artificial lighting. 	AVOID	Pre- and during nesting and hatching periods each year.	As deemed necessary	Light pollution survey undertaken by external specialist with mitigation designed accordingly for the nesting and hatching season.
T-Tu4	Comparative analysis of successful nesting/hatching between years to identify opportunities for improvement.	<ul style="list-style-type: none"> ✓ Record activity and nest locations throughout nesting season. 	<ul style="list-style-type: none"> ✓ Records maintained of nesting sites, with locations monitored daily during nesting season. ✓ Records maintained of hatchling deaths or injuries from feral predator species or any other means. 	AVOID	On completion of hatching season.	Annual	EGA staff Possible engagement with external specialist to help set up systems.
T-Tu5	Assess the risks associated with the AT intake channel during the turtle hatching season to determine the need for a monitoring protocol.	<ul style="list-style-type: none"> ✓ Establish responsibility for the intake facility. ✓ To establish a protocol for entrapment if EGA responsibility is sole or shared. 	<ul style="list-style-type: none"> ✓ Review records to establish whether entrapment occurs. 	AVOID	Continuous throughout hatching season.	As deemed necessary	EGA staff Possible engagement with external specialist to help set up protocols.
J-Tu1	Assess the impact of the intake on marine life and evaluate improvements for mitigation.	<ul style="list-style-type: none"> ✓ Conduct daily checks of the intake basins. ✓ Implement a collection/transfer protocol for sightings. ✓ Identify long-term solutions to prevent entrapment of marine life. 	<ul style="list-style-type: none"> ✓ Records of entrapment and subsequent collection/transfer are maintained. 	AVOID	Investigation to commence 2025/26.	Dependant on mitigation options.	EGA staff Continued liaison and engagement with Dubai Turtle Rehabilitation Project. Consult third parties for development of long-term solutions.





Seagrass (ID: S^g = Seagrass / T = Al Taweelah)

ID	Action	Target	Indicator	Hierarchy	Start-End	Frequency	Monitoring/Resourcing
T-S ^g 1	Seagrass monitoring using stereo baited remote underwater video units (BRUV).	<ul style="list-style-type: none"> ✓ Establish a greater understanding of seagrass health in the marine environment bordering the AT facility, through monitoring of associate faunal communities, including elasmobranchs (sharks and rays) and fish. 	<ul style="list-style-type: none"> ✓ Understanding of increase/decrease in seagrass and associated flora/fauna assemblages, highlighting Seagrass health and function. 	ENHANCE	2025	Annual	EGA staff Support specialist dive team, vessel and equipment to set up BRUV units and assist with analysis of data.
T-S ^g 2	Seagrass monitoring using quadrat and Seagrasswatch.net protocols.	<ul style="list-style-type: none"> ✓ Establish a greater understanding of seagrass health in the marine environment bordering the AT facility, through more detailed monitoring techniques. 	<ul style="list-style-type: none"> ✓ Understanding of increase/decrease in seagrass health through dataset acquisition. 	ENHANCE	2025	Annual	EGA staff Support specialist dive team, vessel and equipment to enable SCUBA and transect methods (approximately 6 x 25m transects).



Wildlife Encounters (ID: W = Wildlife / TJ = Al Taweelah & Jebel Ali)

ID	Action	Target	Indicator	Hierarchy	Start-End	Frequency	Monitoring/Resourcing
TJ-W1	Establish a protocol for monitoring and/or relocation, of incidental encounters with wildlife.	<ul style="list-style-type: none"> ✓ Species include, but are not limited to, both harmful and non-harmful fauna (e.g. gazelles, foxes, feral cats, snakes). ✓ At both facility locations. 	<ul style="list-style-type: none"> ✓ Maintenance of observational records. 	ENHANCE	2025/26	Annual	EGA staff



Sediment Quality and Bioaccumulation (ID: S_d = Sediments / T = Al Taweelah)

ID	Action	Target	Indicator	Hierarchy	Start-End	Frequency	Monitoring/Resourcing
T-S _d 1	Assess a need to expand sediment monitoring to other nearby critical habitats	<ul style="list-style-type: none"> ✓ Evaluate potential spread of bauxite compounds/metals in sediment 	<ul style="list-style-type: none"> ✓ Sediment quality test results 	ENHANCE	2026	Annual	EGA staff Specialist third party for assessment, testing and analysis.

