

Tidal Lagoon Swansea Bay

Construction Environmental Management Plan Appendix AB

Reptile Strategy

DCO Requirement 5

Works 7a

May 2020

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1 Introduction

1.1 The development

- 1.1.1 Tidal Lagoon Swansea Bay (TLSB) will be the world's first purpose built tidal energy lagoon. The generating station will have an installed capacity of 320 Mega Watts (MW) and will enclose part of Swansea Bay, from the eastern side of the River Tawe to the eastern edge of the new Swansea University Bay-Campus. In total the seawall will form an approximately 9.5km-long, U-shaped seawall which will encompass approximately 11.5km² of the seabed, foreshore and intertidal area of Swansea Bay.
- 1.1.2 TLSB made an application for development consent to the Planning Inspectorate on 7 February 2014 for a Development Consent Order (DCO) for a tidal lagoon (the Project) in Swansea Bay, South Wales. Examination of the application closed on 10 December 2014 and development consent was granted by the Secretary of State (SoS) on 9 June 2015.
- 1.1.3 The Reptile Strategy is a requirement of the DCO, as required under DCO Requirement 5 Construction Environmental Management Plan (CEMP), and as such has been prepared by TLSB for approval by the relevant planning authorities.

2 Scope

2.1 Included in the scope of this strategy

- 2.1.1 A Reptile Strategy has been developed to ensure that all reasonable measures are undertaken to avoid the incidental mortality and injury of reptiles during construction works of the Project and so ensure compliance with the Wildlife and Countryside Act 1981 (as amended).
- 2.1.2 This Reptile Strategy is relevant to the initial works proposed under Phase 1 only – i.e. construction activity in Work 7a and in connection with Work 7a (with reference to Part 1A) a), temporary construction works, including workshops and stores, working areas, laydown areas, construction sites, and vehicle parking facilities; f) to the extent shown on the demolition plan, the alteration, removal, clearance, refurbishment, reconstruction, decommissioning and demolition of any buildings and structures within the Order limits; h) lighting columns and lighting; i) safety / emergency points.

2.2 DCO requirement

2.2.1 The DCO Requirement to which this document is relevant is as follows:

5.—(1) No authorised development are to commence until a CEMP substantially in accordance with the outline Construction Environmental Management Plan, has been submitted to and approved by the relevant planning authorities in consultation with Natural Resources Wales.

The CEMP must include, but not be limited to, mechanisms for the provision and implementation of the following mitigation matters—

(b) a Reptile Strategy which provides for their habitat retention and management, and where necessary, their translocation to suitable receptor sites;

2.3 Strategy principles

2.3.1 In summary, the Reptile Strategy is based on the following principles:

Site appraisal – survey to assess the status of the local reptile population;

Habitat manipulation – the manipulation of existing vegetation to encourage any reptiles present to naturally disperse;

Habitat retention – the demarcation and protection of existing habitat within the site to ensure these areas are not disturbed: and

Reptile exclusion, capture and relocation – details of exclusion, capture and relocation of reptiles from specific areas that are likely to be subject to significant disturbance during construction.

3 Site appraisal

3.1 Legislation

- 3.1.1 Four native species of reptile: grass snake *Natrix natrix*, adder *Vipera berus*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis* have historically been recorded within 2.5km of the site (TLSB Environmental Statement Chapter 12, 2013). These four species are offered legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). However, protection is not extended to their habitat under this legislation. TLSB will ensure that all reasonable measures are undertaken to ensure reptiles are adequately protected during construction.
- 3.1.2 All of the above species are also listed under Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006 as species of ‘principal importance for the purposes of conserving biodiversity’. Under this Act, all local and public authorities in England and Wales have a duty to promote and enhance biodiversity in all of their functions.

3.2 Desk study and surveys

- 3.2.1 Native terrestrial reptile species known to occur in the vicinity of Swansea include Adder, Grass Snake, Common Lizard and Slow-worm.
- 3.2.2 Records of the South East Wales Biodiversity Records Centre (SEWBReC) (TLSB, 2013) indicate that the records for Adder relate to Mumbles Hill, a location at the western side of Swansea Bay remote from the Project.
- 3.2.3 The majority of grass snake records are from the Tennant Canal (aligned east-west, to the south of Crymlyn Bog and to the north of Swansea Docks and Fabian Way) close to the settlement of Jersey Marine. Slow-worms have been recorded at the western edge of Crymlyn Bog and north-western edge of Port Talbot at Sandfields. Common Lizard have a wider distribution with known sites beside the River Neath at Baglan, locations to the south of Jersey Marine and at Swansea Docks, and within habitat to the north and south of the Prince of Wales Dock.
- 3.2.4 Habitat along the southern edge of Swansea Docks where the proposed grid connection works and access road are located was considered suitable to support reptiles, particularly Common Lizard and Slow-worm. Reptile surveys were therefore undertaken in this area in 2013 and 2017.
- 3.2.5 Crymlyn Burrows Site of Special Scientific Interest (SSSI) is known to support a reptile population, common lizard in particular (confirmed by work undertaken by Atkins (2012) for the Swansea University Bay Campus (SUBC)). As such, it was not considered necessary to undertake specific reptile surveys in relation to the Environmental Statement and an assumption was made that reptiles would be present throughout the SSSI.

- 3.2.6 Surveys associated with the docks estate followed guidelines outlined in the Herpetofauna Workers Manual (Gent & Gibson, 1998). A series of 11 visits was carried out between April and September 2013, at times of day and during weather conditions considered likely to favour detection of basking animals (intermittent sunshine in early morning or late afternoon with ambient temperature between 10 and 17°C). Each visit involved checking beneath refugia, as well as visual searches for any reptiles basking in the open.
- 3.2.7 Reptile surveys confirmed the presence of common lizard within coastal grassland habitat alongside the seawall to the south of Queens Dock. Common lizards were discovered in low numbers on eight of the eleven visits. On each of these occasions one to two individuals were recorded with the exception of a visit in late May 2013 when six individuals were recorded (four adults / two juveniles). Using the criteria of Froglife (1999) the discovery of 5-20 individuals of common lizard during any one survey visit is considered to represent a 'Good' population. Further reptiles were discovered in the 2017 survey.
- 3.2.8 Habitat comprised gorse scrub and rank grassland as well as areas of sparse vegetation (more species-rich grassland). The lizards were located within relatively sparsely vegetated ground beside by areas of scrub cover, mainly within a 60m x 12m strip at the eastern end of the docks. Figure 3.1 illustrates the location of the common lizard population found during surveys.
- 3.2.9 For the 2017 surveys, a series of artificial refugia (or 'tins') were deployed at potentially suitable reptile basking sites. The tins consisted of 50 x 50cm squares of heavy-duty roofing felt.
- 3.2.10 The surveys followed guidelines outlined in the Herpetofauna Workers Manual. A series of seven visits were carried out during May and June 2017, at times of day and during weather conditions considered likely to favour detection of basking animals (intermittent sunshine in early morning or late afternoon with ambient temperature between 10 and 17°C). Each visit involved checking beneath refugia, as well as visual searches for any reptiles basking in the open.
- 3.2.11 The reptile surveys undertaken during May and June 2017 support the findings of the 2013 surveys. Low numbers of common lizard were recorded, the maximum number observed at any one time was five; three adults and two juveniles on the 18th May 2017.
- 3.2.12 The surveys undertaken were presence/absence surveys, more intensive surveying (for example mark and recapture) in addition to statistical analysis would be required in order to give a robust estimate of population size. Given the relatively low numbers recorded in the two surveys completed to date and the low risk to the long term population status of the reptiles from the proposed works, the degree of survey effort required to estimate population size is not justified.
- 3.2.13 Notwithstanding this, commonly used methodologies including guidance on assessment of relative population size by Froglife (1999) suggests that a count of <5 adults on one visit by a single surveyor using a density of 10 tins/ha equates to a

Low Population. Counts of between 5-20 adults equates to a Good Population and a count of >20 adult common lizard would be considered Exceptional. The 2017 survey used a tin density in excess of 30 per hectare although these were clustered where habitat was most suitable.

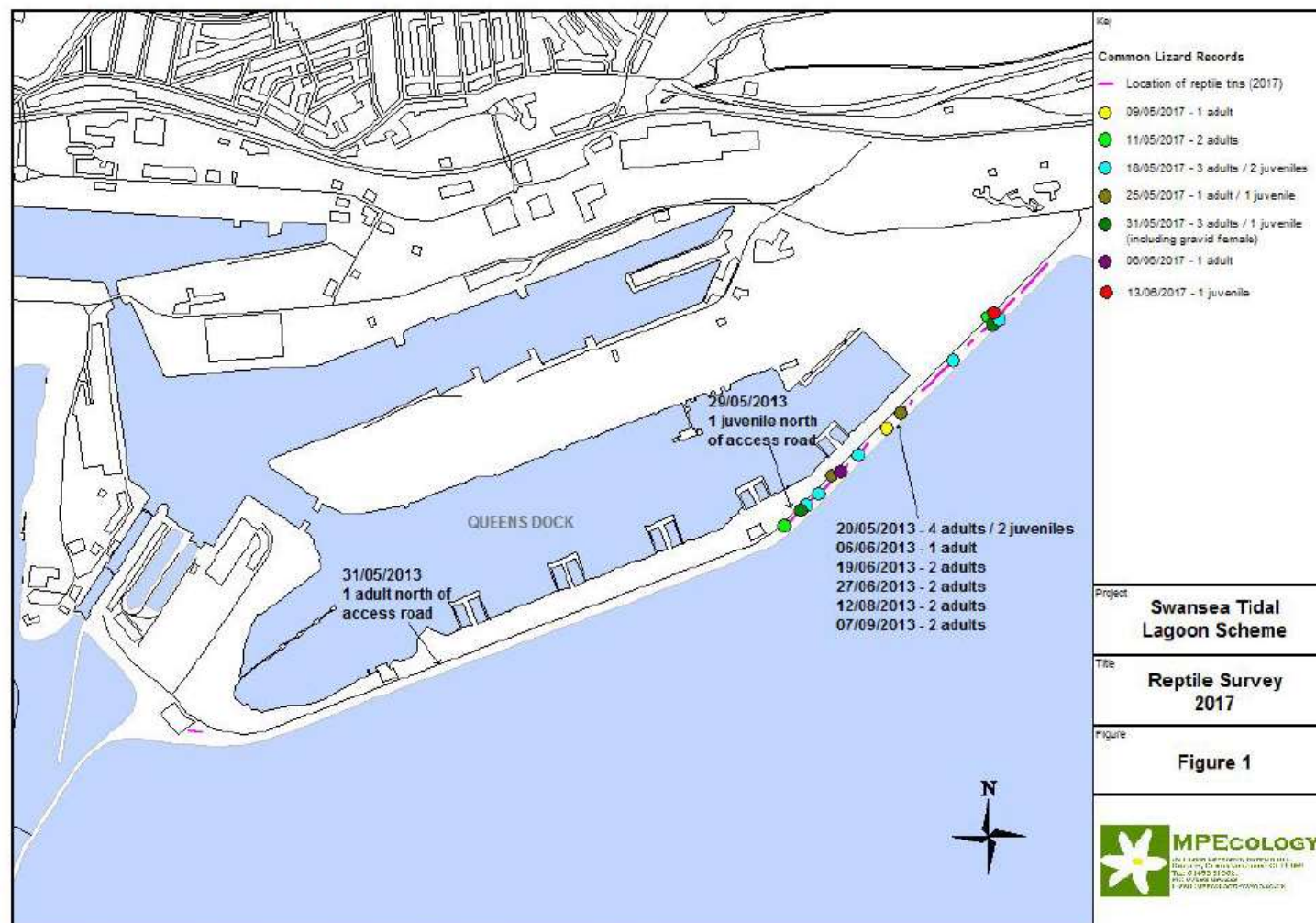
- 3.2.14 The reptile population does not appear to have expanded since the previous surveys in 2013. It can therefore be concluded that the habitat alongside the seawall supports a small population of breeding common lizard. Mitigation measures proposed to reduce the risk of incidental mortality and injury to reptiles should be proportionate to reflect the local importance of this population.

3.3 Swansea Docks

- 3.3.1 Habitat located between the existing port road and sea wall will be unaffected by construction of the internal access road proposed under Phase 1 as this will follow the route of the existing port access road. The main strip of coastal grassland between the internal access road and the sea wall will be retained during Phase 1.
- 3.3.2 Suitable habitat that will be affected by the Phase 1 works includes the eastern end of the access road (in the vicinity of the proposed security gate). The laydown and temporary storage/stockpile areas at the western end of the access road (identified on Drawing TLSB-ATK-03-XX-SK-D-00006_P01 as areas 1a and 1b – See Figure 3.2 below) were not found to support even low numbers of reptiles during the 2013 and 2017 surveys.
- 3.3.3 Coastal grassland to be retained within the Docks will be sympathetically managed to favour reptiles. During future phases, an area of coastal grassland will be created through deposition of dredged materials to make new ground adjoining the south-eastern corner of the Queens Dock creating an additional approximate 3ha of habitat. Patches of rough grassland will also be created at the periphery of the parking bays at the western end of the docks estate to provide further habitat suitable for reptiles.

Figure 3.1 Reptile Survey Results

Figure 1: Location of Common Lizards



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GENERAL NOTES:

- ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
- ONLY WRITTEN DIMENSIONS SHALL BE USED, DO NOT SCALE.
- INDICATIVE PROPOSALS ONLY. ALIGNMENT, EARTHWORKS, JUNCTION LAYOUTS TO BE CONFIRMED DURING DETAILED DESIGN.
- LAYOUT SUBJECT TO CLASH DETECTION / ANALYSIS WITH STATUTORY UNDERS TAKING ARRANGEMENTS.

REPTILE STRATEGY

REPTILE TRAPPING WILL BE CARRIED OUT WITHIN ALL AREAS OF VEGETATION THAT HAVE THE POTENTIAL TO SUPPORT REPTILES, FOLLOWING THE METHOD IDENTIFIED IN THE REPTILE STRATEGY (CDMP APPENDIX A5). VEGETATION WILL THEN BE CLARIFIED IN A SUSTAINABLE MANNER. THIS WILL INVOLVE AN INITIAL CUT TO REMOVE LEAVING THE AREAS FOR 24 HOURS TO PROVIDE A SUSTAINABLE REPTILES TO MOVE AWAY BEFORE FINAL WALKING/CAPTURE AND CLEARANCE UNDER STRIPS.

ECOLOGICAL SUPERVISION

THE PROPOSED APPROACH FOR RESTORATION OF ANY AREAS DISTURBED BY THE TA WORKS IS TO ALLOW NATURAL REGROWTH OF GRASS/COASTAL HERBACEITY FROM LOCAL NATIVE SEED MATERIAL WITHIN EXISTING STATION TOPSOIL. IN LINE WITH DOO REQUIREMENT 7 (1) AND (2), THE EXISTING COASTAL GRASSLAND IS ADAPTED TO THE LOCATION AND OF LOCAL PROVENANCE. THIS APPROACH WILL ENSURE THAT SPECIES THAT ARE NOT FOUND LOCALLY ARE NOT INTRODUCED AND ARE APPROPRIATE TO THE AREA. TOPSOIL FROM COASTAL GRASSLAND AREAS THAT IS FREE OF PERSISTENT WEEDS AND SUITABLE FOR REUSE IS TO BE STRIPPED AND STORED SEPARATELY FROM OTHER MATERIALS AND BE CLEARLY LABELLED/IDENTIFIED FOR REUSE. SOIL WILL BE STORED IN STOCKPILES LESS THAN 3m IN HEIGHT TO MAINTAIN SOIL STRUCTURE, SEEDBANK AND ASSOCIATED FAUNA.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the Hazardous Chemicals associated with the types of work detailed on this drawing, the following significant risks are identified and are to be taken into account in the design and construction.

CONSTRUCTION PHASES

1. EXISTING SITE INVESTIGATION AND SURVEYING

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4 Swansea Docks Reptile Strategy

4.1 Overview

- 4.1.1 This section relates to areas within the Docks that have the potential to support reptiles which are within the DCO boundary.
- 4.1.2 The area identified as supporting reptiles within Swansea Docks will be subject to disturbance over several stages of construction. As an interim approach for Phase 1, it is proposed to retain the coastal grassland between the existing Dock access road and the sea wall as a receptor site. However, for later phases it will be more appropriate to remove reptiles in advance of construction.
- 4.1.3 A potentially suitable long-term translocation receptor site has been identified for later phases at the Swansea Bay Golf Club. Further survey work will be carried out to confirm the existing population at this site and the works required to increase the carrying capacity of this site prior to these works commencing. Any works required to improve the carrying capacity of the receptor site will be undertaken over winter prior to the translocation of the reptiles.
- 4.1.4 Restoration of the coastal grassland area between the proposed shared footpath/cycleway and new access road, in combination with the creation of new coastal grassland and dune habitat adjacent to the existing breakwater due to be demolished, will increase the habitat resource available to reptiles in the long-term. This will ensure no net loss of reptile habitat.

4.2 Works 7a and associated development: Reptile surveys, capture and relocation

- 4.2.1 Areas of suitable vegetation that will be disturbed during Phase 1 the vegetation will be cleared in a 2-stage process. This will involve an initial cut to 150mm, leaving the areas for 24 hours to encourage any remaining reptiles to move away, before final walkover/trapping by hand and clearance under trained ecological supervision.
- 4.2.2 Reptile trapping will be carried out within all areas of vegetation that have the potential to support reptiles and that will be disturbed by the Phase 1 works. The laydown and stockpile areas are not considered to offer high potential for reptiles due to previous and ongoing disturbance. However, these areas will be reviewed by an ecologist prior to clearance.
- 4.2.3 From previous surveys it is not anticipated that reptiles will be present in high numbers. The area of greatest reptile potential is the coastal grassland along the sea wall, but as noted above, this area will not be disturbed during construction of Work 7a and associated development and will be retained.
- 4.2.4 Any individuals captured during clearance will be relocated 500m to a receptor site within coastal grassland by the sea wall that will not be disturbed by the proposed works.

- 4.2.5 The number and species of reptiles relocated will be recorded. Taking into account the number of reptiles found during previous surveys (maximum of six) it is considered that the number of individual reptiles requiring relocation is likely to be very small.

5 References

Edgar, P., Foster, J. and Baker, J. (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Froglife (1999) Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife advice sheet 10. Froglife, Halesworth.